

Why Does What
Exists Exist?
Some Hypotheses
on the Ultimate
“Why” Question

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Edited by

Mariano L. Bianca and Paolo Piccari

**Cambridge
Scholars
Publishing**



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This book first published 2021

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

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ISBN (10): 1-5275-6294-8

ISBN (13): 978-1-5275-6294-3

TABLE OF CONTENTS

Foreword	vii
Chapter One.....	1
Constitutive Foundation and Ontic Eventuality	
Mariano L. Bianca	
Chapter Two	35
Ground and Addition: Short Theses on the Origin of ‘Everything’	
Enrico Guglielminetti	
Chapter Three	42
On Nothing: A Hypothesis	
Paolo Piccari	
Chapter Four.....	56
Wittgenstein and Priest on Nothing	
Konstantinos Boultzis	
Chapter Five	65
Who is the Author of Existence?	
Crister Nyberg	
Chapter Six	79
Toward the Unity of Everything	
Marco G. Giammarchi	
Chapter Seven.....	84
From the Datum to Duration: Determination and Disposition	
in Phenomenology	
Roberta Lanfredini	
Chapter Eight.....	99
What is the Power of Recording?	
Maurizio Ferraris	

Chapter Nine.....	118
Is the Method of Physics a Metaphysics?	
Paolo Rossi	
Chapter Ten.....	124
Language and Ontology: Between Science and Hermeneutics	
Fabio Minazzi	
Chapter Eleven.....	169
I Own therefore I Am: The Ontology of Property and the Obsession to Own	
Marina Christodoulou	
Contributors.....	183

FOREWORD

The question posed in the title of this volume, “Why does what exists exist?”, is a venerable one that asks why there is something rather than nothing. Although such a question, which has a claim to be philosophy’s fundamental question, is attributable to Leibniz, its origin lies in Parmenides’ denial of the very possibility of non-existence. If nothing can arise from nothing, and only being can arise from being, is there any reason (other than the fact that something exists) for anything to exist?

The combination of current cosmology, physical theories, ancient cosmogonies, theologies, and metaphysics poses two further questions: What is the origin of everything? Why does being take many forms? Many different answers have been given in various different fields to these questions.

The principal answers which the ultimate question of “why?” receives are of two kinds. First, in theological, creationist metaphysics, we have the following response: the existence of a creator has given rise not only to everything, but also to the laws that govern existence; therefore the existence of anything at all can be explained only if we suppose that there is a supreme being, who exists of necessity and is the source of all being. Non-theological metaphysics, on the contrary, has proposed some first principles (*archai*) in place of the supreme being from which the reality would derive in its various forms. Second, it is held that physics will provide the response, because cosmological theories are being continually developed and improved to such a point that, sooner or later, they will be able to formulate an explanation of why our universe exists, and hence, more generally, of the fact that something exists. Science for a long time evaded these questions, focusing primarily on particular aspects of reality by formulating explanations of natural phenomena. In the course of their current development, physics (including quantum theory) and cosmology have finally posed questions concerning the origin of the whole universe and the reasons for its existence. In addition, other questions may be added to those just mentioned, including: Is it possible to have a theory of everything? What aspects of reality are unknowable? Are there one or multiple universes? Can the laws of physics apply to the entire cosmos?

The papers collected in this volume are intended to offer, from different points of view, a significant contribution to the debate on the ultimate “why” question.

We wish to thank the authors of the essays for their precious reflections on the theoretical discussion about this issue. We also wish to thank the staff at Cambridge Scholars, who made this project both possible and pleasing.

Mariano L. Bianca and Paolo Piccari

CHAPTER ONE

CONSTITUTIVE FOUNDATION AND ONTIC EVENTUALITY

MARIANO L. BIANCA

Utrum ex nihilo possit aliquid fieri

In this analysis, which aims at answering the question *why does what exists exist*, many theoretical notions are employed, the most important of which are the following: *anything*, *constitutive-ontic foundation*, *ontic constitution*, *eventualism* and *ontic eventuality*.

1. Two Kinds of Anything

In this section, devoted to assigning existence to anything, two kinds of anything are analyzed. Before considering them, what is meant by the term anything will be specified.

The word *anything* (*something* or *anything*, *quelque chose*, *etwas*) refers to any entity, phenomenon, whether natural or artificial, process or event, whether natural, social or anthropological, included mental entities and processes, without considering any other attribute than that of belonging to *BR* (Being or Real). *BR is considered as the set of all anythings deemed to be existing or supposed so and BR is the name of this set.* The set *BR* is not an overall reality different from all the single anythings and considered as existing in itself; the existence attribute is not *directly* applied to *BR*, but only to the entities that are part of it; however, we can indirectly assign the existence attribute to *BR* because all the anythings of *BR* exist or they are part of it.

Each anything belongs to *BR*, even if there is no subject or artifact that can detect its existence and therefore it exists independently from any epistemological or gnoseological perspective. However, it is theoretically plausible that for any anything there could be a subject or a device that

detects it, meaning something that relates to it, even if this relationship may not be as cognitive as it is for an artificial device or a human subject that consciously detects the attributes of anything including it/himself.

Any anything can be any entity (process or event) to which, as for all of them, the primary ontic attribute of *belonging to BR* is assigned: apart from this assignment, formulated by a subject or device, we state ontologically that each anything possesses the primary ontic attribute of belonging to BR.

The Latin term, corresponding to the word anything is *aliquid*, neutral gender of the pronoun *aliquis*, which indicates something indefinite. In Latin philosophical literature *aliquid* is used to refer to any type of anything (or *res*), even apart from its attributes except for the primary ontic one of belonging to BR.

In an epistemological and gnoseological perspective the term anything refers to *empirical* or *perceptive* entities (processes or events) as well as to *theoretical* entities that are not, or are temporarily not, detectable by sensations, perceptions or with the use of any device which can empirically detect them or describe them in empirical-perceptual terms.

The following definition states what is meant by anything.

Def. 1.1.

Each anything A' owns the primary ontic attribute of belonging to BR (Being or Real) and is a portion of it placed in space and time and also at different instants of time and in more than one place; it is formed by its constituents and ontic attributes, its internal and dynamic processes and its relationships with other anythings in a certain condition in an ontic environment. Each anything is at the same time a set of ontic constituents and attributes, dynamic processes and relationships with other anythings.

The following definition indicates the three primary characteristics of each anything.

Def. 1.2.

Each anything has three primary characteristics: 1) belonging to BR, 2) having an ontic constitution and 3) being eventual.

The second and third characteristics will be analyzed in the following sections.

The reason for the existence of anything is founded on the fact that it exists: *it exists because it exists*; the reason for its existence is the existence itself. This means that the existence cannot be distinguished from what exists, so that what does not exist can have no reason to exist. Therefore, we can use the verb exist only for anything that exists or is deemed to exist; similarly, the adjective *existing* can only be assigned to an anything that exists or that is believed to exist in some way.

In order to use the verb to exist and its adjectives there must be an anything that is able to use the verb exist and its adjectives correctly; from here a theoretical clarification.

Thesis 1.1.

The assertion that a given anything exists can be formulated by whatever anything is able to formulate it, that is, by anything that has the following four cognitive abilities:

- a) observing /perceiving anything and getting in relation with it*
- b) assigning existence to any theoretical anything*
- c) having an explicit awareness of this assignment or relationship with the anythings*
- d) activating a natural mental process (or similar artificial process) to formulate in a given language (even non-verbal or purely behavioral) the mental contents referred to an empirical or theoretical anything.*

Therefore no anything that does not have these four cognitive abilities is able to assert its existence and the existence of anything with which it has an empirical or theoretical relationship. The anythings that have the four abilities are called *anythings which state onticity* A(sO), i.e. anythings that detect empirical or theoretical onticity and formulate statements about the existence of some anything. All other anythings are named *anythings that constitute themselves without an explicit self-stating of their existence-constitutivity*: A(¬sO).

Therefore, only the A(sO) are able to assign existence to themselves and to other anythings. The A(¬sO) do not say that they exist: they do not speak of themselves, they do not describe themselves or affirm their existence; this is true not only for all non-living entities but for many living beings as well.

However, you may wonder if the anythings around us, those that as $A(sO)$ we assign existence to and about which we formulate statements that ascertain their existence, are excluded from any way of *self-ascertainment* that would enable them to form and manifest the modalities of their existence even in forms very different from those formulated by $A(sO)$. To this question we must answer negatively; this means that $A(\neg sO)$, though they do not formulate any sO 'statements in a suitable way and do not declare themselves existing in the way that an $A(sO)$ could do towards them, do have a *self-ascertainment of existence which consists in their constitutivity*, that is, in what they are in their onticity and in their manifestations under the different conditions which they can be in.

The $A(\neg sO)$ do not either affirm their existence in any way or formulate explicit statements that ascertain this existence and their characteristics in different conditions; but their *self-ascertainment*, which is neither linguistic nor semantic, is grounded on their own constituting as existing, that is, how they are and what modalities they take on in their being in the world and in relating to others. This is an *ontic self-ascertainment* that allows them to be what they are in their different ontic conditions. A branch of a tree, for instance, ascertains its constitutivity as a branch of a tree attached to a trunk, but also when it falls from the trunk, or is broken by the wind or reduced to ash by fire. In a metaphysical perspective, then, we can formulate the following thesis.

Thesis 1.2.

Every anything can ascertain it is what it is and manifests itself in different forms in its constitution and in what it is under different conditions.

However, this self-ascertainment is obviously not a kind of awareness like that of the $A(sO)$; rather, it is a condition called *constitutive-self ascertained onticity* and manifested in different ways of being, as in the case of the branch of a tree. Such *constitutive-self ascertained onticity* is not an attribute possessed only by the $A(\neg sO)$, but also by the $A(sO)$ which, as has been said, also possess the modality of affirmation of onticity referring to themselves as well, and so they possess both attributes.

Therefore, for the $A(\neg sO)$, in order to ascertain and manifest their constitutivity, it is not necessary to possess the awareness that have the $A(sO)$ with respect to themselves and others. In the case of the branch of a tree it can be stated that it ascertains that it is a branch and part of a tree and that it reacts in a given way in the different conditions under which it is. An

$A(\neg sO)$ does not affirm its existence, nor that of other anythings, as does an $A(sO)$; rather, it does so in the modality of the ontic self-ascertainment of itself and of any other anything.

In anthropomorphic terms it can be argued that all $A(\neg sO)$ *know* what they are and self-ascertain themselves through their manifestations and that they assign existence to other anythings through their different relational manifestations; in this way they use signs/states/behaviors related to their ontic ascertainment, i.e., their self-ascertained onticity. However, the use of the word *know* cannot be applied to $A(\neg sO)$ as it can when we refer to humans.

However, the $A(sO)$, like humans and other hypothetical beings that have the abilities a), b), c), d), formulate ascertainment of themselves and other anythings also with mental contents and their awareness of such contents, and with their formulation in signic or linguistic characters. Similarly, each $A(\neg sO)$ manifests its *constitutive-self-ascertained onticity* with reactions, states and signs, like the presence of the wind manifested by the sign of the bending of the branch, grounded on its *constitutive-self-ascertained onticity*. This statement can be considered an *antropomorphization* of the world similar to those of various forms of animism and, in fact, may be associated with the latter even if it has nothing to do with the assignment of a sort of 'spirit' to each anything like an animal or a tree.

Hence, on the grounds of what has been said up to now, we can formulate the following theses.

Thesis 1.3.

Only $A(sO)$ can claim their own onticity or that of any other anything with which they relate and hence formulate ontological statements, also with the use of signs referred to themselves and to every other anything.

Thesis 1.4.

No anything $A(\neg sO)$ formulates statements about its existence or that of other anythings.

Thesis 1.5.

Each anything $A(\neg sO)$ express its constitutive-selfascertained onticity with reactions, states and signs.

These theses make it possible to clarify, as we have already said, that there is no $A(\neg sO)$ able to ‘talk’ about itself or about anything else; hence the following metaphysical-ontological theses.

Thesis 1.6.

No $A(\neg sO)$ can explicitly affirm that it exists because it does not have the abilities a, b, c, d , and in particular the awareness that allows it to claim that it exists.

Thesis 1.7.

Any $A(\neg sO)$ belongs to BR but does not explicitly say that it belongs to it.

Thesis 1.8.

In order to exist it is not necessary to claim to exist, even if there is the constitutive-self-ascertainment, and the claim of onticity belongs only to the $A(sO)$.

Consequently, if only the $A(sO)$ are those anythings that recognize, ascertain and claim *explicitly* to exist, then the question *why does what exists exist?* can be formulated only by these anythings; and only they, in that they possess the abilities $a), b), c), d)$, are able to answer this question referring to themselves and to any other anything.

All other anythings $A(\neg sO)$ exist because they exist, and this existence is inherent to their being constituted: thus, their ontic constitution is at one and the same time the reason for their existence and their belonging to BR.

The answer to the question *why does what exists exist?* can be formulated by adopting an ontological-metaphysical thesis grounded on the notion of the *constitutive-ontic foundation*.

2. Constitutivism, Constitutive-ontic foundation and Ontic Constitution

The search for the foundations of every anything (including the entire reality BR) is a philosophical issue which concerns not only philosophy but many other human disciplines and sciences. However, the question of the foundations of each anything is specific to philosophy which through its history has always searched for the foundations of each anything, of a set of

many anythings, or of the whole BR considered as the set of all the anythings that are considered in various ways to be existing or supposed so.

In the field of philosophy the problem of foundations has involved almost all philosophical disciplines, including ethics and aesthetics, but also political philosophy, gnoseology and epistemology. In particular, this topic has always been especially relevant for metaphysics and ontology; as is known, it focuses on two distinct questions: *what is existing?* and *what is what is existing?* Starting from these two fundamental questions, have been formulated not only answers, but also theoretical systems, ontologies and metaphysics that in one way or another have been considered to be foundational systems both for theoretical constructions and for any form of philosophical investigation, and therefore also for the formulation of various philosophical disciplines.

The problem of foundations is present in various research areas, both scientific and humanistic. We need only consider, for instance, the foundations of mathematics, which philosophers and logicians like Hilbert and Gödel have worked on; hence, the hypothesis that mathematics may be founded on arithmetic, but more than any mathematical theory it may be founded on a complete formal system from which every mathematical statement can be logically derived. Moreover, as we know, this conception of a complete axiomatic foundation was undermined by Gödel's proof of 1931 (the theorem of incompleteness), which demonstrated the incompleteness of foundational axiomatic systems seeing that they could contain at least one not logically demonstrable proposition inside the system. Hence the problem of the undecidability of formal systems and particularly of those considered foundational. Gödel's proof was made up of two theses: *if the system of axioms of arithmetic is coherent then it is not complete*; this means that this coherent system, in which there are no contradictions, contains statements which are neither demonstrable nor refutable, that is, they are undecidable propositions; Gödel also *formally demonstrated that the coherence of arithmetic cannot be demonstrated using the system of axioms of arithmetic*. However, this undecidability of the formal system underlying arithmetic does not entirely affect the arithmetic foundation of mathematics.

Analogous reflections were generated, more or less in the same historical period, in physics, not only Newtonian but even more so in relativistic and quantic physics. The problem of foundations also arose in many other areas of scientific research and was applied to other disciplines, including humanistic disciplines such as Chomsky's formal linguistics.

Why, then, does the question of foundations arise? This question can be answered by asserting that this problem always arises when we experience theoretical uncertainty related to formulating and answering the ontological question: *Why does what exists exist?* This question requires twofold research aimed not only at delineating what exists but also at investigating why this something exists, or at least can be considered to exist, meaning by this that it is an entity belonging to BR. On the grounds of this twofold answer, it is possible to investigate in greater depth why there is what exists. In this second direction the problem of the search for foundations arises when we wish to identify what is considered as the foundation, or *raison d'être*, not only of one's own speech or ontological or metaphysical theory, but of the whole of reality and of anything this speech refers to, whether it be an empirical reality, i.e., a reality in some way empirically ascertainable, or a reality that has been supposed to exist in a purely theoretical way.

The problem of the search for foundations is, we may say, the theoretical attempt to annul, or at least lower, theoretical uncertainty and therefore to attempt to strengthen what is asserted about the whole of reality or about any anything.

Considering what has been claimed by various philosophers and the cases of mathematics, physics and humanistic disciplines, is it possible to clarify what can be meant by foundations referable to each research area? To answer this question, it is useful to clarify the different meanings and references of the term 'foundation' and therefore of the related concept.

The search for foundations can help to answer the question that we explore in this paper: *why does what exists exist?*

2.1. The Notion of Foundation

The notion of foundation has been investigated throughout the history of philosophy, and in particular since Aristotle, who united the concept of foundation with that of cause (*aitia*), considered not in a strictly physical sense but as the *raison d'être* of a thing for which the foundation, or *raison d'être*, allows us to assert not only that it is what it is, but also that it is what it is since the presence of the *raison d'être* means it can only be what it is. In Aristotle, therefore, the notion of foundation is correlated not only with that of the cause (or origin) of a thing but also with that of necessity; in this sense the *cause of being of a thing lies in its raison d'être, which is a necessary cause because it determines what a certain thing is and cannot be anything else than it is.*

This notion of foundation has been adopted, albeit in different forms, by many other philosophers; according to them, the search for the foundation and the notion itself are always referable to something that founds or gives reason for the existence of any anything. There is nothing that is affirmed or supposed to exist that cannot be assigned its reason for being, that is, for being a certain anything and not another. From this derive the possible answers to the questions: *what is existing?* and *what is what is existing?* Referring not only to the whole of reality but also to each anything or set of anythings.

As we know, in this regard Leibniz used the notion of *sufficient reason* which, although not strictly linked to necessity, is what makes a thing what it is. While Aristotle aimed to clarify why a particular thing is what it is and cannot be other than what it is, Leibniz theorized only the possibility that a thing is what it is. Both addressed the problem of foundation, which ultimately appears to be a search aimed at understanding why there is a particular thing and the reason why such a thing is what it is: by necessity (for Aristotle) or as possibility (for Leibniz).

Of particular relevance to the philosophical understanding of the notion of foundation is Wolff's metaphysics, which had a deep influence on later philosophers, including Kant and Hegel. Here we do not analyze Wolff's metaphysical thought, but only aim to clarify how he understood the philosophical notion of foundation.

Wolff accepts Leibniz's principle of sufficient reason and understands it as a foundation, but he makes a distinction between the *principium essendi*, which indicates the possibility of the existence of a thing, and the *principium fiendi*, which indicates the happening of something. These principles, as he says, seek out the reason why something is or is happening. Both these principles of reason involve the concept of necessity, as was also claimed by Aristotle, according to which something is or is happening *de necessitate*, expressed by the *principium essendi* and *principium fiendi*.

Wolff believes that the primary task of philosophy in its entirety is to identify the foundations of BR and of each anything. Doing so, he adds, not only makes it possible to give the reason for their existence, but also to achieve knowledge of them, because for Wolff knowing in a philosophical sense really means knowing the reason and the way of being of anything, according to the *essendi* and *fiendi principia*.

The meanings indicated out by these authors, although very different, coincide with one of the most common way of thinking not only in philosophical but also in common and scientific thought: *the foundation is what makes a thing be what it is*; in this sense, the first and most comprehensive meaning of the term foundation is that of cause, reason or *raison d'être* of any anything and, in the broadest way if you will, of the whole reality of BR.

At this point a crucial question must be asked: is the foundation formulated before, during or after ascertaining the existence of anything? On the one hand, this question can be answered by affirming that reasons, causes, principles, foundations or the like are always referable to a given anything, including the whole of reality. As such they can also be considered as ontic attributes of each anything, or even predicates if one operates within a discourse that speaks about something and that has as semantic reference anything considered to be ascertained or supposed to exist. On the other hand, it can be said that the foundation can be laid before a theorization; this happens, for example, in the formation of a formal or axiomatic system in which the formulation of the axioms takes place before the formation of this system. This modality can also occur in the philosophical realm if one aims to formulate a metaphysics for which the foundations are formulated before the structuring of this metaphysics.

In other cases, however, as often happens not only in philosophical but also in scientific and ordinary knowledge, in the first instance propositions are formulated and linked together to form a vision, a theory or a conception, and only subsequently we try to avoid their theoretical and semantic uncertainty through the definition of foundations considered able to generate all the formulated propositions. In this way, a foundation is also assigned to the various propositions, but even more important is that a foundation is assigned to the references of these propositions, that is, to the anything to which they refer; hence, the foundation shifts from the realm of thought and language to the ontic realm.

The problem of the foundations, obviously, as specified in Section 1, *Two Kinds of Anything*, can only be posed by any anything $A(sO)$, and not by anythings $A(\neg sO)$, which do not possess the abilities a), b), c), d). Hence, they are not able to ask questions about foundations, not only of the whole of reality, but also of specific anythings, nor even of themselves (see what has been stated in Section 1 - *Two Kinds of Anything*).

If we consider foundations referring to the ontic realm, excluding the presence of a subject that could ascertain the existence of something, we claim that the foundation is considered as *what makes a thing what it is*; however, it should be underscored that this statement does not clarify the expression *what makes it*. So, it remains to ask in what way the expression *what makes it* can be understood.

What makes a thing what it is, as has been said with reference to some philosophers, can be understood as the *cause of* (as in Aristotle) or the *reason for* or *principle of* (as in Leibniz as well as in Wolff), but it can also be understood in other ways. However, before mentioning these different ways, let us focus only on those mentioned above.

We shall start with the notion of cause considered as foundation. Can the cause of being of anything be considered its foundation, that is, what makes it what it is? It seems that the two terms in some cases can converge, whereas in many others they do not. A thing can be generated by a cause, but this cause may not give us information on its ontic structure. Think, for instance, of one of the causes that could have generated the current state of our planet, that is, the impact with another cosmic object called Theia, which also caused the birth of the Moon. Can this cause be considered as the foundation or reason for the existence of the Earth? Partly yes and partly no.

A cause can give rise to several and different anythings, but these cannot be ontically distinguished only on the ground of this cause. Hence arises the most crucial problem of the notion of foundation: does the foundation allow us to delineate the ontic constitution of anything, that is, what makes that something be what it is? Is the foundation related only to how it was generated, or is it in a certain state, or does it indicate something that relates to the ontic constitution of its being as it is?

In ordinary language the term foundation is used without claiming to indicate the ontic constitution or nature of anything, but only either the cause of its origin, or why it is in a certain state, or something that allows it to be in a certain state. Think, for instance, about the foundations of a building. They do not indicate what that building is, but only that these foundations are what allows that building to exist; however, with the same foundations as a cause, many different buildings can arise which are all compatible with these foundations. The foundation considered as a cause and also as a *raison d'être* can indicate nothing about the constitution of a given anything, or at least it can only indicate that it is necessary for its possibility of being (perhaps in the sense indicated by Leibniz's principle of sufficient reason).

In the case of the building, the foundations can also be such as to support any other building quite different from that which was built.

Hence, causes and reasons can be considered as foundations, but they do not indicate what it is, that is to say, a particular anything that stands on these causes or reasons.

One could assert that a foundation is necessary for the existence of what it is, but this what it is could also be what it is on the ground of different reasons or causes. For example, the origin of our planet might have been caused by some cosmic event other than the impact of Theia. In other words, causes and principles understood as foundations of a given anything can also be such for an undetermined number of other anythings.

Though this statement appears to be very strong, especially if referred to the macroscopic world, it can be acceptable if it refers to the quantum world in which events or anything, like the Higgs's boson, could be generated not by causes like those that occur in the Large Hadron Collider of Geneva, but also by other causes and conditions. Indeed, in this area of research it is believed that a Higgs's boson has been identified in a process of the Large Hadron Collider. This process lasted a few millionths of a second, but it is also, and above all, surmised that this process occurs very often in the whole cosmos, in particular during the inflation that arose after the Big Bang and which has continued in the following 14 billion years that have led to the current state of the universe. Therefore, the Higgs's bosons that assign mass to all elementary particles may not be founded or be caused in the same way as the boson generated in the Large Hadron Collider. Thus, we can assert not only that the foundation or cause of the existence of a Higgs's boson could be different under many other cosmic conditions but also that this cause does not answer the questions of what a Higgs's boson is and why it can assign mass to every elementary particle.

Hence, although it is acceptable to consider the foundation as a cause or *raison d'être*, this alone does not enable us to declare that this anything is what originated from a certain cause, since, as we have already said, it could have been generated by causes very different from those that can be analyzed. It is also true that the same cause could generate something different, as in the case of building foundations on which buildings other than the one considered could be built.

Therefore, the foundation as cause, reason or origin may not give any information on what a thing is (as in the case of the Earth and of the Higgs's

boson). Thus it is difficult to accept it as the only way to understand the notion of foundation, if by foundation is meant something for which anything is what it is and does not refer only to the way in which it was generated by a particular cause or *raison d'être*, but instead must be able to indicate its ontic constitution. Hence, Leibniz's principle of sufficient reason cannot be considered as a foundation that explains why something is what it is (its ontic constitution), but only that this thing must have a reason for its existence; so, the notion of intrinsic possibility is included within the principle of sufficient reason. In other words, a thing is what it is because a reason has allowed its existence.

This analysis can continue referring to other meanings of the notion of foundation, but always considering this notion as referring not only to possibilities or causes but also to the ontic constitution of anything.

Another way of understanding the foundation is to consider it as a *justification*, and this applies to the dimension of speech and thought as well as to the ontic dimension when referring to anything considered, ascertained or supposed to exist or, in other words, as part of what we consider as Being or Real: that is, those things to which we can assign the primary predicate of existing or belonging to BR. In the dimension of speech and thought it is acceptable to consider the foundation as a justification referring, of course, to individual sentences, arguments, strictly logical-formal processes and even more so to large noetic structures such as a scientific theory, a paradigm or a conception of the world.

In this regard, the example of the foundation of mathematics can be taken up again. To say that mathematics is based on an arithmetic-formal system means that every mathematical statement can be justified on the ground of a deductive chain of statements which in turn refer to the arithmetic axioms. Each mathematical statement is justified, or can be justified, on the ground of such a logical-deductive chain of statements. In this context, we may also consider Kuhn's notion of scientific paradigm: any statement of a scientific discipline is justified within a given paradigm from which all statements of a discipline that is part of this paradigm can be deduced.

This notion of foundation as justification applies in many other areas, including that of argumentation. A given thesis finds its justifying foundation on the basis of arguments which, as is known, refer to notions, concepts or world views that are previously accepted or even considered as the first principles of this argumentation and that as such are not questionable. This is the case of the axioms of a formal system which are

not all demonstrable, as Gödel also indicated in the second part of his incompleteness theorem.

The notion of foundation as justification obviously applies to the ontic realm with reference to the acceptance of a specific scientific or even common sense statement. In this case, to justify means to assign a foundation to a statement. As is well known, this justification can employ two different modes: *reference to experimental results* or *reference to accepted theoretical conceptions*.

In the first mode, the justification is related to experimenting or presenting experimental data or perceptions which in theory should state that a given statement has a certain degree of reliability, or, in other words, that it corresponds to or simply does not conflict with a state of affairs in the world. Thus, the justification has a strictly semantic character, that is, it is relative to a relationship between statements and states of affairs, or in general between language and the world. However, we must specify that this foundational justification process considers only statements that are assertions, namely, propositions that can be true or false, and therefore whose reliability can be tested, thereby allowing us to decide on their truth with respect to certain states of affairs of the world.

However, this foundational justification process does not apply to all propositions. In particular it does not apply to propositions relating to worldviews, beliefs, points of view or opinions, which cannot be considered either true or false because they belong to the world of *doxa* and not *aletheia*. On the one hand there are *doxastic propositions* which are opinions or beliefs, such as religious, aesthetic or ethical ones; on the other, there are propositions (assertions) that refer to states of affairs of the world and can be true or false.

In reference to doxastic propositions can we claim that there will be a supporting justifying foundation? What would its nature be? This justifying foundation is in no way grounded on the reliability of statements like the ones indicated above, which relate assertions to states of affairs in the world; rather, it is considered within an ordered system of beliefs, opinions, conceptions or world views. Hence, a proposition of belief, or doxastic one, could be foundationally justified on the one hand by its possible derivability from propositions considered as foundations of a doxastic system, i.e., a logical or argumentative derivation. On the other hand, it could be foundationally justified by its coherence or non-contradiction with other utterances of this doxastic system.

In the second justification mode an assertive statement can be considered true or false, or at least acceptable, if it is not only consonant with an accepted theory but is also not in conflict with other statements of that theory. However, in many cases this justifying foundation tries to find support also in some results obtained in the first mode, that is, the one concerning the comparison between statements and states of affairs in the world.

These modes of justifying foundations can be asked the same question, as the one referred to the meaning of foundation as cause, origin or *raison d'être*. The foundation as justification can be useful to state why something is what it is (its ontic constitution) and therefore also to answer questions like: *what is it?* Or *why is there what's there?*

Unlike the foundation as cause, origin or *raison d'être*, the justifying foundation can and cannot provide information as to why anything is what it is.

The justifying foundation can provide indications as to why anything is what it is only in the case of the second mode in which an assertive statement can be considered true or false, or at least reliable or acceptable, if it is not only consonant with an accepted theory but also does not conflict with other statements of this theory, particularly with those statements that derive from data or experiments. However, as has already been said, in many cases this justifying foundation also tries to be supported by results obtained from the first mode, that is, by comparison between statements and states of affairs in the world. Under these conditions, though the justifying foundation does not provide information as to *the ontic constitution of each anything*, the processes that take place to form and use it can do so, because when we use the first mode we make empirical and theoretical investigations that allow wider knowledge of the onticity of a given anything, and this information is also useful to make the justifying process more acceptable.

However, this process doesn't occur in cases where the justificatory foundation refers to speech, and in particular to doxastic or belief propositions, because in these cases it is, so to speak, self-referential: justification applies to a conceptual system of beliefs that is given and accepted as self-justified.

To the meanings of the term foundation that have already been indicated, others can be added which we shall treat briefly, even if they can play a fundamental role in theorizations in which the terms used do not have an

explicitly direct semantic reference to states of affairs in the world. Additional ways of understanding the notion of foundation can be the following: a) *assignment of meaning*, b) *assignment of value*, and c) *ontic constitution*. We shall briefly focus on the first two and then we shall analyze more fully the third, which involves the questions: *what is existing?* and *what is what is existing?*

Foundation as assignment of meaning is a foundation that has a relational character whereby anything can be considered as founded if it has acceptable relationships with others, with a world view or with a conceptual system. This foundation may concern the dimension of thought and speech or the ontic dimension. In the first case, an utterance is considered to be founded on meaning because it is compatible with a system of utterances in which it can be inserted and which is considered as accepted or shared. In the second case, however, an anything is considered to be founded on meaning because its existence is compatible with that of other anythings with which it can have ontic relationships.

As can be seen, these two ways of considering the foundation as assignment of meaning, although acceptable, can correlate with those that have been analyzed above, namely, those of reason, sufficient reason, cause and justification which do not refer to the ontic constitution of anything. This also holds for the notion of foundation considered as assignment of value.

The foundation considered as assignment of value is widespread both in ordinary thought and in philosophical disciplines and human sciences. In ordinary thought, anythings, conceptions or even judgments on something, are considered founded if a value has been assigned to them, where the term *value states that something is considered relevant* in a given personal, interpersonal or social condition. The clearest example of this conception of the foundation as a value is obviously that referred to the ethical values assigned to behaviors, actions or ways of thinking. In these cases, the foundation of anything, like behavior, lies in the value assigned to it, that is, in the fact that it is considered as relevant.

The conception of the foundation as value is also widespread in the human sciences. Indeed, in psychological, anthropological or sociological analyses it is fundamental to refer to human behaviors or relationships with reference to the values assigned to them; thus behaviors and actions can be considered founded on a system of values.

The different meanings of the notion of foundation, as we have already affirmed, do not involve, at least directly, the ontic constitution of anything, but only the origin, the cause or in general the reason for its presence and existence in the world. It is then possible to introduce a conception of the foundation that directly involves the notion of the onticity of anything, and that is named the *constitutive-ontic foundation of whatever anything* (or in general *of the set of all anythings*, BR), and this kind of foundation can be useful to formulate a possible and partial answer to the questions: *what is what exists?*, *Why it is what exists?*, *Why does what exists exist?*

2.2. Constitutivism: constitutive-ontic foundation

The *constitutive-ontic foundation* of anything, unlike the other forms of foundation that have been mentioned, would allow us to detect the ontic constitution of each anything. In theoretical terms this means detecting the constituents or attributes of any anything regardless of the way in which it has been formed or generated. In non-philosophical terms we can refer, for instance, to the ontic constitution of an atom, i.e. the presence of the mass number, the spin, the number of electrons, neutrons, protons and other particles, along with the relationships regulated by the strong force that binds neutrons and protons in the nucleus and the weak force that binds the nucleus to the electrons.

We can refer to any other anything, for instance the planet Earth, which has already been mentioned: the constitutive-ontic foundation of planet Earth is neither its origin nor the cause of its formation; rather, we can consider the constitutive-ontic foundation of the Earth to be the physical, geological and chemical structure that currently characterizes it and that has changed over a few billion years, as well as the physical forces that involve it (such as the gravity of the Sun, the atmosphere, the magnetic shield, etc.) and the relationships it has with space and with other cosmic entities like the Moon and Mars.

Thus, the following theses can be advanced.

Thesis 2.2.1.

The constitutive-ontic foundation of an anything A' is made up of all the attributes and relationships, internal or external with others, which constitute it and which identify it within an ontic environment and ontic conditions.

With this constitutive foundation we can answer the ontological question that has been put forward previously: *what is it that makes a thing what it is?* The only plausible answer to this question lies in detecting its constitutive-ontic foundation which, as we have highlighted here above, means detecting its ontic constituents.

The constitutive-ontic foundation detects those attributes which are *essential* to something, so that without these attributes this something cannot be identified or differentiated from others.

Corollary 2.2.1.1.

The constitutive-ontic foundation of any anything A' allows the ontic constitution of A' under given conditions.

From this thesis and corollary derives the following thesis.

Thesis 2.2.2.

Each anything is said to be well founded if the constitutive-ontic foundation which allows its ontic constitution it is detected, and some of the other foundations related to its cause, origin and justification are detected.

This means that the constitutive foundation appears primary and unavoidable, while the others may exist or not exist, and when they do exist they are part of the constitutive-ontic foundation of a given anything.

With reference to the theses presented above, it is useful to clarify the difference between *constitutive-ontic foundation* and *ontic constitution*. The former, as has been noted, includes all the essential features (attributes, etc.) of each anything without which it would not be what it is. The *ontic constitution*, instead is the constitution of anything A' which has been realized in a given condition; in terms of eventualism, which will be considered later, this constitution of anything will be called an *effective* of A', that is to say, an *eventual* of A' that has occurred or been realized.

To take a simple example, we can refer to the constitutive-ontic foundation of H_2O . Its ontic foundation includes its chemical composition (two hydrogen atoms and one oxygen atom) and its physic-chemical characters. Instead, its ontic constitution may be different in various conditions: H_2O can exist in the solid, liquid and gaseous states, and in each of these states H_2O possesses, as is known, different attributes and characteristics; thus, H_2O may have different ontic constitutions under the various conditions that are allowed by its constitutive-ontic foundation. Similarly, we can observe the condition of gases that are heated at a very high temperature, with the result that atoms clash with sufficient energy to cause the expulsion of some electrons which in turn generate negative charges (electrons) and positive ones (ions) that have lost some negative charge. Therefore, gases have a given ontic constitution, but under certain conditions they acquire the state of plasma.

The ontic constitution of anything A' can be defined in the following way.

Def. 2.2.1.

The ontic constitution of an anything A' is the set of characters of its constitutive-ontic foundation and of the attributes that it possesses and manifests in a given condition.

As will be specified later, both the constitutive-ontic foundation and the constitution are subject to eventual processes proper to each anything that cause them to be eventual (see Sections 4 and 5).

What has been said so far allows us to solve the problem of the foundation referred to each anything, and more broadly, although here it is not analyzed, to the entire set of anythings named as BR (Being or Real). Hence, it can be claimed that in philosophical terms the search for the foundation of anything can be considered as the search that includes the various meanings of the foundation that have been analyzed, i.e., from the meanings that determine the reason for its ontic origin and presence to the meaning whose aim is to indicate what constitutes each anything, that is, its ontic constitution in any given condition.

At this point we might ask what role the other meanings of the notion of foundation that have been discussed could have. The answer to this question is that they contribute to the search for and formulation of the constitutive-ontic foundation and the ontic constitution of anything.

On the basis of what has been said, we can argue that a possible answer to the question *why does what exists exist?* has to take into account the problem of foundation, and in particular the constitutive-ontic foundation and the ontic constitution. Thus, the answer to the question is that *what is existing exists because it has a constitutive-ontic foundation and an ontic constitution* or, in other words, because it is constituted in a given way. The constitutive-ontic foundation of an anything is what brings with it the existence of this anything: *it exists because it was constituted in a foundational way*; in the terms already mentioned, it exists insofar as it exists in a foundational-constitutive way. In Section 5 we shall see that foundation and constitution are subject to eventual processes

However, this foundational constitutivity, which brings with it the existence of each anything, is not considered as something that has originated out of necessity, but that an anything has originated in an eventual way, hence the notion of *constitutive eventuality* is involved. The constitutive-ontic foundation and the ontic constitution have the primary ontic character of every anything, namely, that of being eventual. Thus, the foundation is also an *eventual foundation* because every anything is eventual and it is eventual in its constitutivity.

This analysis will be clarified in the following section, in which we briefly introduce the notions of *eventuality* and *effectivity*.

3. Eventuality and effectivity

In order to take into account this topic it is necessary to deal briefly with the theoretical notions of *eventuality* and *effectivity* within the wider metaphysical notion called *eventualism* (see M.Bianca, *Eventualismo - Fondamenti di una metafisica eventuale* (*Eventualism - Foundation of an eventual metaphysics*), Mimesis, 2020).

The notions of *eventuality* and *effectivity* are the most relevant for *eventual metaphysics*, and at the same time they are two characteristics of every anything, including constitutive-ontic foundation and ontic constitution.

Thesis 3.1.

Every anything is effective as long as some aspect of it has been realized, and at the same time it is eventual because an aspect of it which has not been realized could be or could not be realized in a given condition.

The notions of effectiveness and eventuality, while being different, as will be seen, can be compared with those of *act* or *actuality* (*entelechia*) and *potential* or *potentiality* (*dunamis*) as defined in Aristotle's *Metaphysics*.

Actual is anything which is currently happening (*entelechia* or *entelechy*) and is "the being of a thing" (*Met.* IX - 6). Instead the *potential* of a thing is the possibility of being, or better of its change, but a thing is not always in potential but is only so in "given conditions" (*Met.* IX - 5). With reference to the relationship between *act* and *potential*, Aristotle states that: "The act precedes each potential" and "what is in act derives from what is in potential", whereby "what is in act must precede chronologically what is in potential, in the sense that before the thing in potential there is a thing in act" (*Met.* IX - 6).

The analysis that will be formulated, although not following Aristotle's thought directly, shares his statement that any anything is what it is (in *act*, here indicated as an *effective*) and at the same time it possesses the possibility to be another, or better to change and become another, thereby making its *potential* come true (eventual which becomes effective). It follows that *any anything is both effective and eventual*.

Thesis 3.2. - *Ontic eventuality and effectivity of every anything*

Every anything is constituted by two ontic modalities: effectivity and eventuality.

3.1. Effectivity of every anything

Each constituted anything *A'* realizes itself in countless *effectives*, which are the outcome of the processes of its eventuality. From this statement derive the theses and corollaries that follow.

Thesis 3.1.1.

*Every anything *A'* has an effectivity as a result of its eventual dynamics.*

Thesis 3.1.2.

*The effectivity of each anything *A'* is realized in countless effectives.*

Thesis 3.1.3.

*Each effective of *A'* is a realized eventual of *A'*.*

Corollary 3.1.3.1.

Each effective of A' is A' as it is currently realized and constituted or was constituted in conditions prior to the current ones.

Corollary 3.1.3.2.

Each effective Ef' of A' occurs in a portion of space-time.

Thesis 3.1.4. - Inertial and non-inertial effectives

Each anything is realized in inertial and non-inertial effectives.

Def. 3.1.1. - Inertial effective

The inertial effective $(Ef_i)(A')$ is that effective of A' which occurs in cases in which A' is in an inertial state, and therefore it is not subjected to any force, its atomic-molecular cohesion (Cs) is not altered or A' is in a state of uniform rectilinear movement.

$(Ef_i)(A')$ follows the first law of classical mechanics, according to which it remains in its state of quiet or uniform rectilinear movement.

Thesis 3.1.5. - Realization of an inertial effective

The realization in a space-time st' of an effective $r(Ef_i(A')_{st'})$ of any anything A' is directly proportional to the sum of its atomic-molecular cohesion and the gravity G that operates on it:

$$r(Ef_i(A')_{st'}) / (Cs + G) \quad (1)$$

Def. 3.1.2. - Non-inertial effective

A non-inertial effective of A' is the result of: a) the application of a force F on A' or b) a modification of the structure of its atomic-molecular cohesion without the intervention of an external force F .

Thesis 3.1.6.

Every non-inertial effective of force Ef_{-ij} of an anything A' , generated by the application of a force on A' , is different from any previous $Ef_i(A')$.

If a force F is applied to A' then it can increase or decrease the degree of realization of a non-inertial effective of A' , that is to say, an effective that is realized on the basis of the application of a force on A' ; therefore, the degree