TRUTH, STRUCTURE AND OBJECT

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ABSTRACT: To address the question "on what there is" raised by Quine, and to accomplish the task of comprehending exhaustively the many ontological units that populate the great province of Being, we propose as an alternative to Puntel's ontology a new ontology designated as "Structural Ontology" (SO). Such ontology is based on systematic-structural theoretical foundations, but leads to a diverse view in which structured factual units, structural configurations (dynamics), as well as apparent ontological units (objects), all encompassed by the temporal sub-dimension that interconnects them, understood as an internal sub-dimension of the macro-dimension of Being, co-subsist. In this sense, we begin by situating the ontological theme in current philosophical discussion from a Quinean perspective. We then present a concept of truth derived from our reading of puntelian philosophy, which will be the point of connection between language and the world. Subsequently, we show how from the concept of truth, after a brief foray into philosophical semantics, we arrive at the ontological field from the ontological categories of structure and ontological state. Finally, we outline, in its general features, our structural ontology, which includes its own ontological notions that give new directions to philosophical understanding of this great theme.

Keywords: Systematic-structural philosophy. Structural ontology. Structural theory of the object. Concept of truth.

I. INTRODUCTION: ARRIVING AT THE "ONTOLOGICAL SPACE"

In the varied and sometimes confusing landscape of contemporary ontologies, it can be difficult to establish an ontology that is stable, broad, and sufficiently grounded throughout its theoretical development. Lorenz Puntel is an exceptional example in this sense, not only for his rigor, but especially for the breadth of the ontology outlined in his work "*Structure and Being: a theoretical framework for a systematic philosophy*." However, we intend, with all due respect, to suggest a philosophical alternative for the description of the ontological dimension, even if based on the systematic-structural philosophy's theoretical foundations. Starting from Puntelian basic concepts and views, especially those of "structure" and "truth", we will propose an expansion and transformation of the "ontological province" view so that we can articulate a new ontology, diverse, designated as "structural ontology". To accomplish this task, we need to return to the initial point of the interweaving of language and the world, and for that, we will start with W. V. O. Quine.

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Quine's philosophical criteria for semantically purging natural language to make it more adequate for expressing "what there is" in the ontological dimension simply do not have direct repercussions on that dimension. However, although Quine's "logical-conceptual scheme" does not bring direct ontological consequences, there are implications for ontology and the theory of objects. Saying that "to be is to be a value of a bound variable" [1] implies the presupposition of entities by a theory, which appear as values of variables and whose statements are true. Therefore, the criterion of ontological commitment reveals what there is by showing what a true theory says there is. However, there must be a bridge of contact between the "saying that there is" and the "there is": the "true". In other words, Quine's ontological commitment is based on the idea that entities exist if and only if they are necessary for the truth of the theories that mention them, and this idea is directly related to the philosophical concept of truth.

On another note, Quine's purifying procedure, in another aspect, turns out to be incoherent and insufficient as Puntel rightly states, because

> "The talk of a "thing" that is "identifiable" only in being "determined" as the ontological value of the bound variable x is talk that is empty: what could "determined" mean here? If such an identification can enter at all into the framework of Quine's assertion, then it would be necessary to explain the extensive ontological space within which the (ontological!) value of the bound variable x is situated. Such an ontological space is, after all, explicitly presupposed and thus assumed in that a quantifier is used. It does not suffice, for the identification of the value of x, simply to indicate this ontological space or framework". [2]

The entire discourse on ontology or on what exists in the great ontological province depends on the concept of truth and on the explicit assumption of an "ontological space" by the theorist. This "ontological space", in turn, depends on the identification and assumption of a basic or fundamental ontological category, which will precisely constitute or compose such a space. But the assumption of a basic ontological category depends on the choice of a semantics, or better, can only be made based on a determined semantics, because as Michael Dummett says, "a semantic theory is the basis of metaphysics". [3] And once the respective semantics has been elected, the theorist must construct an adequate concept of truth to support it. Truth, ontological category, and semantic category are therefore interrelated and respectively dependent concepts.

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[1] So, for example, we have: $\forall x \exists y\ (x=y)$, i.e., "for every x, there exists a y such that x is equal to y", which expresses the idea that for any entity x that exists in the world, we can find another entity y that is equal to x. This equality can be understood as the identity between two entities, and the reproduced formula ends up being a way of expressing the notion that all entities are identical to themselves. Therefore, the existence of an entity in the world can be expressed through a logical formula that contains a quantified variable.

[2] PUNTEL, Lorenz B. *Structure and being: a theoretical framework for a systematic philosophy*. University Park-PA: The Pennsylvania State University Press, 2008, p. 198.

[3] DUMMETT, Michael. *The Nature and Future of Philosophy*. New York: Columbia University Press, 2010.

II. TRUTH: LOGIC, SEMANTIC AND ONTOLOGY

In semantics, roughly speaking, and ignoring many existing divergences, we can say that truth is understood as a semantic property of propositions (the *expressum* of sentences) that adequately represent on the linguistic level what is the case. In classical logic, excluding non-classical logics [4], it is common to conceive truth as a predicate, i.e., a function that takes a proposition as an argument and returns "true" or "false" as a value. In ontology, it is generally regarded as the ontological correlate or *state of affairs* (of and in the world) linked to a property or value of a true proposition. As can be seen, there are numerous points to be clarified and made explicit in this first general characterization, such as "state of affairs", "truth as a predicate", and "world". This may indicate that "starting exclusively with the concept of truth" may not be exactly feasible. In reality, the work of the concept of truth implies the concomitant developments of an ontological category and the implied ontological unity.

The reason for this, as we understand it, is that truth is not simply and in isolation a semantic property, a logical predicate, and a *state of affairs*, but as inferred from the mere preceding description, truth is both semantic, logical, and ontological, or, in other words, truth possesses a tripartite nature: semantic, logical, and ontological, bringing together in a unitary concept its three faces or aspects.

Based on a reading of the impressive intuition of L. Puntel, according to which truth is the result of the composition of three functions, namely, syntactic-semantic-ontological [5], we can say that truth has a tripartite nature, being the relationship of identity between three elements, namely, (i) a logical operator, "T" – "it is true that", (ii) a true proposition "p", and (iii) a true fact "F". Such a configuration results in the explicit anteposition of the truth operator "T" to the proposition "p" that serves as its argument [thus, we have: T(p)], which is equal to the fact "F" that is identified with the propositional truth expressed by the "T" function. We would therefore have T(p) = F, meaning that the proposition "p" is true and that the fact "F" is identical to the truth of the proposition "p" expressed by the logical operator "T".

It is easy to see that we do not treat truth here as a predicate (logical) or as a *state of affairs simpliciter*. This is for a simple reason: the understanding of truth as a logical predicate has repercussions in the semantic and ontological fields, generating far-reaching consequences that need to be supported or even assumed by the theorist. However, we explicitly reject such consequences, as a result of the ontology we support, so we could not accept such a concept of truth as a predicate, lest we end up defending mutually incompatible views. We have already said: semantic analysis goes hand in hand with logic and ontology, or: $(S \rightarrow O) \wedge (O \rightarrow L) \wedge (L \rightarrow S)$.

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[4] In fuzzy logic, truth is understood, basically, as a degree of membership in a set, so that a proposition will not only be true or false, but may have "intermediate degrees" of truth, or in paraconsistent logic, which considers truth as a partial property of propositions, thus supporting a situation in which a given proposition may be true in some context and, simultaneously, false in another context.

[5] PUNTEL (2008: 227/236).

III. REASONS FOR REJECTING SUBSTANTIALIST ONTOLOGY AND COMPOSITIONAL SEMANTICS

The far-reaching consequences mentioned above would be: 1) the forced adoption of compositional semantics, using sentences in the form of "subject-predicate", which we prefer to interpret in a particular way that we can call "primary semantics" of Puntel (comprehensive of primary sentences, i.e., sentences without the subject-predicate form, like "it rains" or "*es regnet*"); and 2) the unwanted maintenance of the ontology of substance, which we consider philosophically inadequate, and which we replace with the so-called structural ontology.

The reasons why we prefer primary semantics over compositional semantics and reject substantialist ontology in favor of structural ontology are as follows:

The principle of compositionality, by which the semantic value of a sentence results from the composition of "subject + predicate", leads us to the respective semantic values of the subject (associated with the entity or individual who performs an action or is described in a sentence) and the predicate (by extensional interpretation, a predicate focuses on the extension, that is, the set of objects or entities that satisfy the predicate, and by intentional interpretation, a predicate focuses on the intention or its underlying meaning). The extensional and intensional interpretations of the predicate, in turn, are related to the distinction between reference and sense, knowing that reference is linked to *the real object or entity* designated by the predicate, while sense refers to the underlying concept or property attributed by the predicate. All of this theoretical reference, therefore, when transported from strict semantics to philosophy, is based on the *assumption of an ontology underlying abstract or formal semantic construction*. What would be the reference linked to the predicate designating a "real object"? A substance (!), i.e., a "real object" or a fixed "substrate" to which accidental properties and relations are attributed, which *already commits us to a substantialist ontology* that, as we will demonstrate below, we understand to be flawed and insufficient to articulate the ontological dimension.

A substantialist ontology, if understood in its classical formulation, as meticulously demonstrated by Puntel [6], is based on the presupposition of an entity (*substratum*), which must serve as a necessary hypothetical support for attributes and properties. Now, such a *substratum*, when stripped of all properties, attributes, and relations, that is, when deprived of all "accidental determinations", results in an empty, ghostly "entity"; the substratum is only "subsistente", hypothetically, solely as an "empty cavity", devoid of any determinations. Such an entity, thus understood, is evidently indeterminate and, consequently, unintelligible. Given that an unintelligible concept cannot adequately ground the theoretical articulation of the ontological dimension, the rejection of the ontology of substance is indubitably imposed.

On the other hand, Lorenz Puntel's "primary semantics" is fully adequate for substantiating, in the linguistic-formal plane, the structural ontology that we will later articulate in its initial basic features. Puntel's so-called "primary semantics" considers the proposition as the *expressum* (transmitted information) of declarative primal sentences

[6] PUNTEL (2008: 256/258).

(without the "subject-predicate" form); moreover, in this theoretical framework, each individual sentence occurrence expresses an individual primal proposition. It is also worth noting that such semantics does not result in the elimination of the possibility of grammatical articulation of the "subject-object" form in a theory. The elimination occurs exclusively in the semantic plane, not in the syntactic-grammatical plane of expression.

Furthermore, in primary semantics, a general theoretical operator (T) – "it is the case that" - must be prefixed to declarative sentences, followed by the sentential variable (φ), resulting, for example, in "it is the case that it rains". In this general theoretical framework, a contextual semantics is also adopted in the strong version, so that classical intrasentential components, "subject-predicate", are each replaced by an abbreviation of a large number of primal sentences of the type: "Socrates" (subject) would become "it is the case that he is greek, that he is a philosopher, that he was born in 460 BC, that he was Plato's teacher etc.". Finally, the formal articulation of a complete semantic structure implies an ordered pair "A' = (A, a*)", where "a*" is the collection of functions, being an expressive function and a function of assigning value to the sentential variables of a symbolic set S, and "A" is the universe or support set, i.e., the totality of primary propositions (semantic entities still undetermined or subdetermined).

IV. CATEGORIES AND CONCEPTS OF STRUCTURAL ONTOLOGY

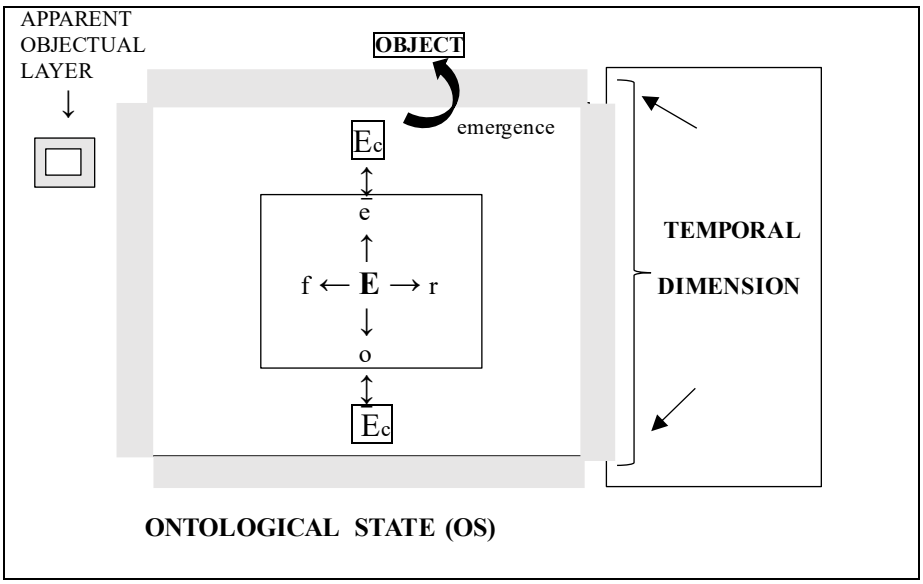
We stated that, in our view, truth should be understood as the identity of three functions: (i) a logical operator, "T" – "it is true that", (ii) a true proposition "p", and (iii) a true fact "F". Therefore, as Puntel argues, it follows that truth can be seen, from this broader perspective, as a "superstructure" that connects primary (concrete and logical-formal) facts and primary true propositions (semantic entities), completely determining and "concretizing" the latter. Similarly to us, albeit expressed in different terms, truth is the relationship of identity between "T", "p", and "F", and as such, is also an interconnection structure (connecting "T", "p", and "F" through the relationship of identity).

Besides, "structure" is the ontological category postulated by Puntel as exclusive and unique in the ontology outlined in general terms in his *magnum opus*, "Structure and Being" [7]. However, in our view, the most accurate description of the great ontological province, or that "ontological space" assumed directly by the use of an existential quantifier, must be different. Firstly, it must be such that the simplest ontological structure (e.g.: a simple primary fact, in Puntel's terminology, such as "it rains") should be understood *precisely* as such, i.e., as a *dynamic* interrelation (as factual) of elements, functions, and operations of this simple ontological unit ("it rains"), which fundamentally exists only as a *structured factual unity*.

[7] Structure is understood by L. Puntel as the ordered interrelation of elements within a unity, or as a n-tuple composed of elements, functions, relations, and elementary operations, which in mathematical language can be translated as a quadruple consisting of a non-empty set (A), a family R of n-ary relations over A, a family F of n-ary functions and operations over A, and a family C (constant) of elements of A.

At another level of understanding, if we take a prime fact that identifies with something commonly referred to as an "object", it will comprehend, in this case, an *apparent object unity* on a "second level", "above" the fundamental (structural) level. That is to say, what the "object" *is*, in fact, comprises the ordered interrelation of its elements, functions, operations, and relations (its fundamental structurality or structured factual unity); what it *appears to be*, on the other hand, comprises the apparent objectual ontological unity (the "object", let's say, "y"). Second: alongside structure, i.e., the ontological unity (factual), another intermediate ontological category (more comprehensive) must be added: ontological state. It is only possible to understand structure as the tuple or ordered sequence of elements of a unit in interrelation if we presuppose the *dynamism* of structure. It is only possible to "concretize" structure taken as an abstraction if we insert it into the ontological quadrant of a dynamic state (included in the temporal dimension) in which prime facts, colligated structures, and objects (the latter, in the apparent layer) are mutually related.

To illustrate the conception outlined above, consider the following chart:



As one can see, the fundamental structure (**E**), which is not an entity *per se*, but a complex of structural interrelationships (e = elements, f = functions, r = relations, and o = operations) - *a structured factual unity*, is connected to other adjacent interconnected structures, which are also fundamental structures, in a structural network that emerges in the upper apparent layer as an object (*apparent objectual unity*), with objects, fundamental and interconnected structures being inserted in the fundamental dimension of time, as components of an ontological state.

Let us take the concrete example of a tree. A tree appears as an object in the superficial apparent layer only *if it is already in* the temporal dimension, the unifying factor of the underlying dynamic structural network. At the fundamental level, the tree is adequately described as a configuration of fundamental structures linked in a network

(which gives rise, at the apparent object level, to apples, leaves, branches, roots etc., which, if detached from the "tree" object, also show up as objects), as a component of a determined ontological state (which puts "the tree" in relational position with other structural configurations such as soil, air around, vegetation, animals etc.).

If we were to explain the conceptual contribution of our structural ontology, we would say, first and foremost, that the **fundamental/linked structure** is the n-tuple (a quadruple: A, R, F, C - see footnote nº 7) or the ordered interrelation of elements, functions, operations, and relations of an ontological unit. The ontological unit, in turn, can be classified as: (i) **factual ontological unit**, understood as a unitary factual manifestation of structures or a structured factual unit; as well as (ii) **the apparent object unit** (which is also "ontological"), understood as a provisional mold emerging in the apparent layer of the object. Structured factual units and apparent object units, and therefore also the **dynamic network of fundamental/linked structural configurations** (note that the structures are dynamically correlated "in a network"), are constantly interacting with each other, mutually putting themselves in interstructural relation to compose a larger moving "frame". This intradynamic larger "frame" is called the ontological state or, more precisely, structured correlations of reciprocally and dynamically established and linked positions between ontological units.

V. TWO MORE CONCEPTS: TIME AND OCCURRENCE

If we were to say a few more words about our ontological view, we would emphasize that the **temporal dimension** is understood as the fundamental dimension that interconnects dynamic structures, structural configurations (interrelated), objects, and therefore, ontological states. In this context, **ontological occurrence** is defined as the emergence from the realm of possibilities of a latent ontological state, with its entry into actuality (*actualitas*), thus establishing a determined situation. [8]

Regarding the last concept, it is worth mentioning that in order to adequately incorporate the concept of actuality (*actualitas*) into the modalities that make use of alethic modalities, it is necessary to use the modal operator "□A", where A represents actuality. Thus, the concept expressed by the proposition "ontological occurrence is the emergence of a factual state from the field of possibilities with its entry into actuality, thus establishing a determinate situation" can be logically represented as follows: "□P →

[8] The alethic modalities of necessity, possibility, and contingency can be logically expressed using the so-called modal operators, which are symbols used in modal logic to represent such modalities. In this sense, we have: a) Necessity: the modality of necessity is expressed by the modal operator "□" (read as "necessarily"). Thus, a proposition that expresses necessity can be represented by "□P", where P is a proposition. The reading of this expression is: "it is necessary that P". b) Possibility: the modality of possibility is expressed by the modal operator "◊" (read as "possibly"). Thus, a proposition that expresses possibility can be represented by "◊P", where P is a proposition, and the reading is as follows: "it is possible that P". c) Contingency: the modality of contingency can be expressed by the modal operator "◇" (read as "contingently"). Thus, a proposition that expresses contingency can be represented by "◇P", where P is a proposition. The reading of this expression is: "it is contingent that P".

□A". In this expression, "P" represents the proposition "a factual state emerges from the field of possibilities and becomes actual", and "A" represents the proposition "actuality is established". The reading of this expression is as follows: "it is necessarily true that P implies A", that is, actuality is a necessary condition for a factual state to become actual and emerge from the field of possibilities.

Furthermore, it is worth noting that "actuality" is a concept referring to an actual factual state or to what is actually happening in the fundamental temporal dimension. "*Actualitas*" finds its conceptual-etymological origin in the Greek word "ἐνέργεια" / "energy" (something existing in act). The actual ontological state, therefore, is one that has been "effected" (as we read in Heidegger, "*Gewirktheit*"), that is, it is the effective reality of an effected ontological state.

Finally, it must be noted that the alethic modalities considered here are "*de re*" modalities, and not simply "*de dicto*" modalities, that is, they refer to the ontological state itself and not just to the proposition that expresses it. This is because, as we said, the semantic primacy we are based on is umbilically linked to structural ontology, so that the "true ontological state" expresses the identity relation between the truth operator, the true proposition, and the actual factual state, and it makes no sense to attribute to it solely the "*de dicto*" modality, denying it a metaphysical or ontological status. In other words, ontological occurrence, that is, the transition of an ontological state from the field of possibility to the field of actuality, is a situation that necessarily involves entry into the ontological domain, since the attribution of truth value to the proposition results in the truth of the factual state, given that the semantic structures and ontological structures are yoked to the same overarching structuralism: the "superstructure" of truth (the identity relation between them).

VI. THE STRUCTURAL THEORY OF THE OBJECT: GENERAL FEATURES

Moving towards the conclusion, let's outline, in general terms, the foundational theoretical elements of a structural theory of objects (STO), as well as add, at the end of the text, some other relevant correlated concepts for understanding our ontological view *in totum*.

Object, from Latin, *ob-jectum*, and even in German, *gegenstand*, means what is before, what stands ahead. Philosophical tradition has sometimes considered the object as the term of an operation of the mind; subsequently, under the influence of analytic philosophy and language, the object also designated the meaning of a word indicative of reference (*bedeutung*). The common use of the term "object" began in medieval scholasticism, but the expression "theory of objects" gained wide circulation, especially from the work of A. Meinong. In our structural ontology, the "theory of objects" appears as a sub-theory within this broader ontological theoretical framework, closely related logically and philosophically to the concepts examined above.

We think it more appropriate and organized to begin with the concept of an object (compatible and integral) within our structural theory of objects. The object can be understood here according to the development of a thesis in three progressive parts: a) 1st part - initially, the object is understood as the provisional and apparent mold, under the influence of time, yet endowed with some stability, which, at first, seems to emerge from the "background" of its own "Properties"/objectual relations; b) 2nd part - next, it is seen that, in reality, the object emerges from an immense underlying network of connected structures (the "deep" ontological dimension), these latter being understood as plurals of relations, functions, operations, and elements of a factual ontological unity; and c) 3rd part - finally, it is concluded that the object is the emergent provisional mold of a structural configuration, so that its "properties", "qualities", and objectual relations are a duplication or iteration in the apparent objectual layer, of the underlying set of "instructions" of inter-dynamized structures rooted at the fundamental level. If we were to summarize everything into a maxim that could simplify and encompass all the conceptual elements, we would say: the object is the form of presentation of ontological structures.

In the context of structural ontology, the structural theory of objects describes the object as the tangible manifestation of a set of interconnected and inter-dynamized relations, functions, operations, and elements of a more fundamental and deeper structural configuration. Emergence indicates the emergence of new properties or characteristics "from within" a "complex system" that are not reducible to the component parts of that same "system". If we were to make a comparison with the analysis plan of strictly physical objects in the field of natural sciences, we would say that the "emergence of objects" can be understood as an "upward movement" of the properties of physical objects, such as solidity, color, texture, among others, that emerge from the interaction of elementary particles composing these objects. According to this approach, the properties of physical objects could not be fully explained by the properties of the elementary particles composing them. Instead, the (new, objectual) properties emerge from the complex relationship between the elementary particles, which cannot be predicted from the individual properties of the particles.

In the ontological field, within the scope of philosophical science, the reasoning is similar. That is: the object appears in the ontological dimension as a provisional mold (subject to the temporal dimension that enables its emergence) from the upward iteration of operations, functions, relations, and elements of an interconnected and inter-dynamized structural configuration, i.e., inserted in a network of related structural plexuses, understanding "relation" here as the state of relationality in which structures are in reciprocal connection and interaction. Thus, the properties, qualities, and relations of the object, apparent in the upper objectual layer, are equally not directly reducible derivations, in their entirety, to the ordered and interrelated elements of the underlying structural plurals in dynamic connection within the deep structural network; in other words, as we said earlier: the new properties (apparent in the objectual layer) emerge from the complex relationship between the fundamental and interconnected structures, which cannot be predicted from the particular characteristics of the fundamental factual ontological units (isolated structures).

VII. STRUCTURES AND OBJECTS IN THE TEMPORAL DIMENSION

At this point in our theoretical development, the temporal factor already emerges prominently as being of enormous relevance for the understanding of structural ontology and the structural theory of objects. We can only resort to the concepts of relationality, inter-dynamization, interconnection, ontological occurrence, emergence, and even structure due to the support that the temporal dimension provides, thus coherently closing the theoretical-conceptual scheme of both structural ontology and the structural theory of objects. For this reason, as a conclusion, it is worth mentioning a few additional words about the concept of time in this specific theoretical context.

Time must be understood as a fundamental dimension that interconnects and allows the interrelation of structural configurations and, consequently, of structures (at the fundamental level) and existing objects (at the superficial level) in the vast ontological dimension. Any facts, broadly speaking, and specifically, structures, structural configurations (dynamics), and objects presuppose a unifying factor that supports the interrelations between them in a given established ontological state. The presumed unifying factor here is precisely the temporal dimension, which can be seen as one of the sub-dimensions of the general ontological dimension, referring to the “domain of Being”. This means that the temporal dimension is not something separate or distinct from the ontological dimension but is inherently part of the ontological field.

In conclusion: the emergence of objects, the “emergence movement”, is only possible due to the temporal dimension because the "expansive projection upwards" of new elements of the objectual layer only occurs from dynamic and continuous relationships and interactions between "fundamental factors" of an underlying structural configuration. And dynamism, continuity, and movement are only intelligible in terms of the presupposed prior temporal dimension. In this sense, the integral context of the object can be said to be (i) structural (or fundamental); (ii) inter-relational (or inter-objectual), and (iii) temporal - hence, there are no, as inferred, “immutable objects”. Time provides the conditions for the occurrence of ontological states and any factual ontological units. There are only facts in time. And time, in essence, is the dimensional interconnection of structural configurations and occurring ontological states in a structured network (the ontological province). Structures, in this temporal perspective, are understood as fundamental stable patterns that constitute the structural configurations and their internal interconnections within an ontological state, with configurations and ontological states (which are sequentially broader) themselves being temporally dynamic.

VIII. CONCLUSION

Having made the preceding considerations, we believe we have sufficiently described and fundamentally articulated an ontology based on the conceptual foundations of systematic-structural philosophy, the so-called structural ontology. Such ontology takes on particular contours and emancipates itself from punctelian philosophy as it

progresses towards the construction of its concepts and the development of a structural theory of objects. Here, we have outlined in general terms the theoretical-conceptual foundations of our proposal, acknowledging, of course, that many further developments are still necessary to refine

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