

Nothingness and Paraconsistent Logic

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Abstract: This paper explores the concept of “Nothingness” and its connection to Graham Priest’s paraconsistent logic, with a critical focus on Heidegger’s ontological perspective. Heidegger argues that logic and ontology are incompatible, and truth extends beyond mere propositions, tied to the indescribable experience of “Nothing.” He contends that logical rules are not essential for ontological truth, leading to two conceptions of truth: fundamental and propositional. The study delves into this profound examination, considering the implications for understanding truth and the limitations of logic in grasping the elusive aspects of existence.

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Key-words: ontology, existence, nothingness, para-consistent logic, Heidegger.

La nada y la lógica paraconsistente

Resumen: Este ensayo explora el concepto de “La Nada” y su conexión con la lógica paraconsistente

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de Graham Priest, con un enfoque crítico en la perspectiva ontológica de Heidegger. Heidegger argumenta que la lógica y la ontología son incompatibles, y la verdad va más allá de meras proposiciones, vinculándose a la experiencia indescriptible de “La Nada”. Sostiene que las reglas lógicas no son esenciales para la verdad ontológica, lo que conduce a dos concepciones de la verdad: fundamental y proposicional. El estudio se adentra en esta profunda exploración, considerando las implicaciones para la comprensión de la verdad y las limitaciones de la lógica para entender los aspectos esquivos de la existencia.

Palabras clave: ontología, existencia, nada, lógica paraconsistente, Heidegger.

1. Introduction

Heidegger argues that logic and ontology are not compatible and there exists a realm that cannot be expressed through propositions. He contends that the rules of logic are applicable only to entities existing in the world (Heidegger 1975: 245). However, the underlying basis for understanding these entities extends beyond their mere existence. Heidegger’s analysis suggests that ordinary usage of logic refers to objects and assumes a correspondence between our statements and their reality. Nevertheless, the truth associated with propositions is merely a manifestation of the deeper ontological truth that enables their coherence.

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When we seek to comprehend things, our only approach is to contextualize them within a comprehensive framework. This framework, known as the “world,” serves as a prerequisite for understanding entities, forming the foundation for our ontological understanding and fundamental notion of truth. To grasp beings, we must view them as integral parts of this all-encompassing totality, which we refer to as the “world.” Despite being¹ termed “Nothing,” the world is not an entity in itself; it lacks substance and cannot be denoted or referenced as a tangible object. The experience of “Nothing” serves as a unifying element that allows us to comprehend beings, but it remains indescribable and beyond expression.

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¹ Heidegger’s perspective embraces various forms of “beings,” with each possessing its distinct significance, making him an ontological pluralist. To delve deeper into the concept of Ontological pluralism in Heidegger, one can refer to McDaniel’s work (2016). Furthermore, for a comprehensive exploration of how these diverse ways of beings can be comprehended, Hashemi and Hosseini’s study from 2023 is an excellent resource to consider.

Despite the crucial role of “Nothing” in establishing propositional truth, it is often overlooked, and truth is predominantly confined to the realm of logic. However, Heidegger challenges this perspective by asserting that while our thoughts are governed by rules, the formal rules of logic can be bypassed and are not essential components of ontological truth (Heidegger 1992: 105). He boldly proclaims that even foundational principles of logic, such as the principle of contradiction and the principle of the excluded middle, can be disregarded at the most fundamental level of truth (Fay 1977: 41). This is because these rules pertain to propositional truth, which is merely a contingent manifestation of ontological truth (Fay 1977: 62). Consequently, the pivotal role of “Nothing” in the possibility of truth and in contemplating entities, along with its resistance against the logical constraints of propositions, becomes the primary reason for accepting two conceptions of truth: the fundamental, metaphysical, and ontological truth (*alétheia*) and the derived truth expressed through propositions, which falls under the domain of logic.

Venturing into the foundational level of logical truth, “Nothing” extends beyond being merely a logical operator that negates propositions. In its capitalized form, “Nothing” can serve as a substantive within sentences. When Heidegger proclaims, “Das Nichts selbst nichtet,” it becomes evident that “Nothing” denotes a specific existence, an entity with substantive qualities. Consequently, “Nothing” encompasses both the notion of non-being, which underpins logical truth, and the aspect of being, where it acts as the subject of “nothinging” or “Nichtung,” signifying an entity engaged in negation. In the broader context of theoretical and non-theoretical terms, these assertions neither refer to non-ostensible entities uniquely introduced by scientific/philosophical theories nor represent non-theoretical entities potentially verifiable and independent of any theory (Hashemi 2022: 958). This latter facet of “Nothing” is tightly related to its role in the prelogical or pre-predicative realm, where it reveals itself to the “Dasein,” those who embrace openness to truth. However, “Nothing” remains elusive to logical comprehension, leading to nonsensical assertions that defy compliance with logical rules (Carnap 1959: 69).

According to the analysis presented earlier, Heidegger acknowledges that adhering to logical rules is a fundamental requirement for thinking. However, what he specifically emphasizes is not just lowercase “logic” but rather the grander concept of “Logic.”² The former refers to constitutive

² This distinction is suggested by Witherspoon, but is affirmed by Heidegger’s writings, as he also believes that true logic is different from mathematical logic: “Was die Logistik

rules arising from the ontological basis of thought, while the latter pertains only to rules governing propositions and can be easily disregarded. In essence, Heidegger aims to supplant the conventional notion of lowercase “logic” with a broader understanding of “Logic,” which allows for the inclusion of an ineffable ontological truth transcending logical rules. This new form of truth entirely relies on the self-disclosure of “Nothing,” an entity that remains beyond the grasp of logic. It is important to note that Heidegger’s concern with logic and propositional truth lies in the inherent contradiction within “Nothing” as both a being and a non-being.

In light of the preceding discussion, we can gain a clearer understanding of the Carnap–Heidegger debate. Carnap contends that Heidegger’s claims concerning “Nothing” are nonsensical since it lacks denotation and cannot be logically represented. Carnap’s critique lies in Heidegger’s misapplication of “Nothing” as a substantive when, in reality, it is merely a logical operator (Witherspoon 2003: 296). Carnap’s argument can be summarized as follows:³

- (1) All assertions are about entities.
- (2) The nothing is not an entity.
- (3) Therefore, no assertion can be about the nothing.

Or: What pretends to be an assertion about the nothing is absurd. (Käufer 2005: 490–491)

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In this paper I examine the strength of this argument and in particular, I focus on the first premise.

2. A brief outlook on Priest’s paraconsistent logic

Our primary objective here is to explore the potential expression of ontological difference through logical terms. One approach to achieve this involves examining Graham Priest’s theory of gluons, which we will briefly outline below.

Priest’s theory relies on two fundamental presuppositions. The first is the equivalence between being and unity, drawing from the Aristotelian

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beibringt, ist nun freilich alles andere, nur keine Logik, d. h. eine Besinnung auf den λόγος. Die mathematische Logik ist nicht einmal eine Logik der Mathematik in dem Sinne, daß sie das Wesen des mathematischen Denkens und der mathematischen Wahrheit bestimmte und überhaupt zu bestimmen vermöchte. Die Logistik ist vielmehr selbst nur eine auf Sätze und Satzformen angewandte Mathematik. Alle mathematische Logik und Logistik stellt sich selbst notwendig außerhalb jedes Bereichs der Logik” (Heidegger 1962: 122)

³ Hereafter, Absurdity argument.

idea that “To be is to be one” (Metaphysics 1054b 13–19). In essence, there should exist a unifying element that brings various parts together, composing a united being. This unity, however, is distinct from the individual parts themselves. The second presupposition is rooted in Meinong’s philosophy, proposing that everything we intend to think about is a being. Whether it be an existent or non-existent being, we cannot conceive of a vacuum; every thought involves a being. Consequently, according to Priest, the unifying element, or gluon, also qualifies as a being.

However, we encounter a perplexing dilemma: If gluon is a being, it would necessitate another gluon to ensure its own unity, leading to an infinite regress. Consequently, gluon cannot be classified as a being. In other words, how could one object serve as the unifying factor for a collection of other objects? Surprisingly, Priest’s solution does not evade this contradiction; instead, he embraces it by asserting that gluons possess a contradictory nature. They are both being, when they become the object of intention, and non-being, when they unite other objects.

If we accept that gluons both are and are not objects, then some contradictions are true. ... Gluons are dialetheic: they have contradictory properties (Priest 2014a: 15)

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The formalization of gluon theory can shed light on the relationships between parts and whole. Suppose that we have three objects: a, b, and g. a and b are two parts of the object X. g is the gluon of X.⁴ Suppose that there are three properties P_1 , P_2 and P_3 . If an object has a property, it takes a + and if it doesn’t instantiate the property, it takes – and if it both instantiates and doesn’t instantiate the property, it takes a \pm . Priest’s truth table is defined like this:

	P_1	P_2	P_3
a	+	–	+
b	+	+	+
g	+	\pm	+

⁴ Why X and the gluon of X are not considered identical may prompt a question. The answer lies in the inherent contradiction within the definition of ‘gluon’ by Priest. While X is undeniably an object, the gluon of X is both an object and, simultaneously, not an object. Consequently, a fundamental conceptual distinction exists between X and the gluon of X.

- (1) $\forall P (Pa \equiv Pg) \rightarrow \forall X (Xa \equiv Xg)$
- (2) $\forall P (Pb \equiv Pg) \rightarrow \forall X (Xb \equiv Xg)$
- (3) Therefore: $a = g$ and $b = g$

A remarkable difference between classical logic and paraconsistent logic is that in the latter framework, the relation of identity is not transitive. That means, (3) doesn't entail $a = b$. Moreover, $P_2g \equiv P_2a$ and $P_2g \equiv P_2b$ are true and false simultaneously. Consider the case when they are false, then:

- (4) $P_2g \wedge \neg P_2a \rightarrow \exists X (\neg Xa \wedge Xg)$
- (5) $P_2g \wedge \neg P_2b \rightarrow \exists X (\neg Xb \wedge Xg)$
- (6) Therefore: $g \neq a$ and $g \neq b$

From (3) and (6) we conclude that g is both identical and non-identical with a and b . But this dual character can be identified in g itself. Based on the above truth table, we have:

- (7) $P_2g \wedge \neg P_2g \rightarrow \exists X (\neg Xg \wedge Xg)$

(7) means that g is not identical with itself and is not an object. Alternatively, gluons are both objects and aren't objects. This character of gluon is clearly similar to Nothing that is both being and non-being (Heidegger 1975: 245; Priest 2014b: 151).

3. *Everything and Nothing*

After sketching out a rough picture of Priest's system, we are prepared to elaborate on Everything and Nothing in his system. Our analysis in this section rests on the presupposition that the totality of all beings like every single being is partite and in need of gluon to have unity/being. Priest believes that Everything is the sum total of all objects, including external concrete objects and mental intentional objects and gluon of Everything shares the properties of all possible and impossible objects and unites them altogether. Remember that Priest is committed to the Aristotelian thesis that equalizes being of a thing with its unity. Suppose that Everything is the unified set of all entities. Given this, gluon of Everything is the being of all that exist and strings them together in a unified set. Since everything is an object, it is a unity. The gluon of everything is identical with every part of it. Thus the gluon of everything (g_e) is identical with every object. On the other hand, gluon of Everything isn't identical with the parts of Everything. If we show every individual object with x and gluon of Everything with g_e , then:

- (8) $\forall x (x = g_e)$ and $\forall x (x \neq g_e)$

g_e has properties of every thing and every thing exists owing to belonging to a totality of Everything which is made possible via g_e . Besides,

from (8) we infer that g_e is an inconsistent object or a non-object. Considering that Everything is the mereological sum of all objects and Nothing is the mereological sum of all non-objects (Priest 2014a: 56), we conclude that g_e is a part of Nothing. This conclusion is the objective that we've striven for and will be clarified in next section.

4. Reconstruction of Heidegger's Nothing in terms of Priest's logic

According to Heidegger's philosophy, Being and Nothing are synonymous (Heidegger 1958: 83). This notion aligns closely with Priest's interpretation of Nothingness. To recapitulate our discoveries so far: the object's *gluon* is what defines its being, as the initial presupposition was rooted in the Aristotelian equivalence between being and unity. Now, the being of Everything, known as "ge," is encompassed within Nothing. This significant progression is built on Priest's recognition that Nothing possesses a mereological state (Priest 2014a: 56).

Now, let's delve into the concept of the *gluon* of Nothing as a partite entity. Since Nothing is a sum of non-objects, this set will inherently lack any individual entity. Consequently, the *gluon* of Nothing is itself, representing the unity within this non-object collection. Moreover, as mentioned earlier, "ge" as a contradictory object is a constituent of Nothing. Ultimately, the *gluon* of every object serves as the unifying force for all its parts, remaining identical to each of them (see relation (3)). Consequently, "ge" and Nothing are indistinguishable, implying that Nothing encompasses the being of Everything. This identity between Nothing and "ge" reveals that Nothing unites all individual beings, and they owe their existence to Nothing.

In fact, Heidegger's claim that Being is the ground of being of every being, but itself is deprived of being and is Nothing, is another way for confirming what Priest purports to say in his theory. Here, Nothing has a dual character that we observe in Heidegger. First, Nothing is a partite entity composed of all inconsistent objects. But at the same time it doesn't abandon its simplicity. As a simple entity, Nothing is other than Everything because it is a simple object that lies outside the totality of beings, and puts a sign of "¬" before the universal set of beings. Interestingly, this simple object functions as a uniting element among separate objects.

Nothing is the very *gluon* that unites the being into the totality of Everything. Every individual being, when rests in isolation with no ontological links with other beings, would lose its significance. Hence Nothing is the condition of understanding beings. Even what Heidegger refers to

as ontological difference can be explained via this conceptual framework. Priest thinks that Nothing isn't tantamount to Everything, rather it is the being of Everything. The being of Everything or its gluon is both identical and non-identical with individual objects. Thus, Nothing is separate from aggregate of beings and stands in an ontological difference in respect to them.

Now, we come to discuss a point which is determining for analyzing the logical function of Nothing. Assuming that g_c is identical with Nothing, one may ask what kind of relationship holds between beings and Nothing? For elaborating the relationship between Everything and Nothing, Priest appeals to mimicking lemma (Priest 2014a: 31). According to this lemma, a mimics b iff for every property P:

(9) If $a \in P^+$, $b \in P^+$

(10) If $a \in P^-$, $b \in P^-$

That means if a has a property, b has it as well, and if b doesn't have a property, b also doesn't have it. Mimicking is a non-symmetric relation in which "a mimics b" doesn't result in "b mimics a". Remembering the foregoing truth table, g_c mimics every being, but there are properties in g_c that some beings lack, so beings don't mimic g_c . One could say, Nothing penetrates in every being, or Nothing mimics Everything. But at the same time, Nothing transcend the beings and appears as non-being. In fact, the non-symmetry of this relation is the very character that makes it an appropriate tool for describing ontological difference. We'll turn to this subject in the next section.

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5. From Heidegger's Nothing to Priest's Nothing

The formal reconstruction of Nothing via paraconsistent logic provides us an efficient means to express what is considered as ineffable in Heidegger's thought. Here, it would be illuminating to review main drawbacks of classical logic in this regard and examine the efficiency of Priest's model in responding to them.

Ontological difference, that is the difference between Being and beings, is impossible for logical/propositional thinking to convey. The reason lies in the fact that in ontological difference, Being is neither a platonic *idée*, aloof from beings nor a being among other inner-worldly beings. This is the very feature of Being that allows it to reveals itself in beings and in the very process of revelation conceals itself (Fay 1977: 11-12). Ontological difference is at the foundation of Heideggerian theory of truth in which Being like an internal energy emerges in a being and makes it true, then immediately

withdraws from it. This contradictory quality of Being as self-revealing and self-concealing is beyond the reach of logical analysis and inexpressible in propositions.

As per Heidegger, the truth in propositional form is derivative (*abkünftigen*). It is truth of knowledge which is different from truth of Being as unconcealment (*Unverborgenheit*) (Heidegger 1975: 10-11). The dual character of Being as both unconcealment and concealment, poses an obstacle for propositions to utter it, as logical/propositional truth is merely of use in uttering concrete being, while remains unable in expressing Being as Nothing (non-Being). Here Carnap takes the issue with Heidegger for his attempt to violate logical rules.

Seemingly, Priest's suggestion can save Heidegger from this aporia. Paraconsistent logic has the advantage of accommodating something that simultaneously is and is not. In classical logic such an inconsistency is not tolerated, but in Priest's logic, the main character of gluon is its inconsistency, to say, its simultaneous being (unconcealment) and non-being (concealment):

Suppose that a has the property P, but b doesn't have this property. Given that g is the gluon that unifies a and b, we have:

- (11) $Pa \rightarrow Pg$
- (12) $\neg Pb \rightarrow \neg Pg$
- (13) $Pg \wedge \neg Pg$
- (14) $\neg (Pg \equiv Pg)$
- (15) $\exists X \neg (Xg \equiv Xg)$
- (16) $\neg \forall X (Xg \equiv Xg)$

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(16) means that g is not self-identical and this is the very conclusion we were looking for: g is one with beings and reveals itself in them and is different from them and disguises itself as a non-being, or $g \neq g$. That is to say, g is both being and non-being (Priest 2015: 253).

Moreover, Heidegger is worried about the loss of Being when it is reduced to a concept. Therefore, he goes back to a pre-conceptual level to retrieve Being in its purity. Now Heidegger is faced with a dilemma that fundamental truth (Being as Nothing) is beyond the grasp of logic because it speaks of something that is both being and non-being, and which is unspeakable in terms of propositional assertions because this involves using Nothing as a concrete substantive of which something is predicated of. This deficiency in logic leads Heidegger to the idea that the true logic is ontological and what is usually known as logic is nothing but a contingent expression of it. His argument goes as follows:

- 1- Nothing is the essence of truth
- 2- Nothing transcend logic and lies beyond the reach of its formulation.

∴ the truth that is tied to Nothing belongs to another realm (i.e. ontology) which is more fundamental than formal logical.

Considering Priest's formalization, one cannot claim that Nothing exhaustively is susceptible to logical exposition. In another words, Priest's theory is no way (L)ogic in Heideggerian sense. For sure, there might be an aspect of Nothing that goes beyond any ordinary expression and belongs to pre-ontological experience. Despite this, the second premise of the above argument isn't absolutely true, because it was shown that Nothing is in principle amenable to paraconsistent logic and propositions that refer to it aren't absurd. Put differently, Carnap's critique that contradiction is inexpressible and illogical is dismissed.

6. *Nothing and Dasein*

Up to this point, it was shown that paraconsistent logic can rule out Carnap's absurdity charge against Heidegger. But in this analysis the role of Dasein wasn't cleared up. One of the challenges facing us in interpretation of Heidegger according to paraconsistent logic is the relation of Dasein and Nothing. This critique draws on the correlation between Dasein and world and makes the conclusion that there's an internal or somewhat subjective aspect in Nothing that resists logic and expressibility.

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Heidegger points out that Dasein can raise himself above beings and experience what is beyond beings, i.e. Nothing. Heidegger explicitly says that transcendence toward the world is the way to understand the world as a whole (Heidegger 1998: 109). This means that Dasein should first project himself to Nothing until he could relate himself to beings as relational entities (Heidegger 1975: 251). In this way, world becomes significant (*bedeutsam*) for Dasein (Heidegger 1967: 87). Transcending to the whole is accompanied by the way in which Dasein attunes himself to beings and this attunement allows the whole to disclose itself for Dasein. One of these attunements is anxiety, that makes the Nothing manifest and is a precondition for being-in-the-world (Käufer 2005: 486). Dasein should transcend to the world with some *Grundstimmungen* just in order to experience entities as linked together in a totality of world via Nothing and as constituting a *Verweisungsganzheit* (Heidegger 1967: 70).

One might conjecture that Nothing is dependent on Dasein and this mutual interdependence gives Nothing a subjective character that is inexpressible. Heidegger himself anticipate this interpretation and disavows this subjective view of world (Heidegger 1998: 122). Here anxiety as a mood doesn't confer subjective character to Nothing, but can be seen as a way for

experiencing Nothing that never transform Nothing to an emotional object. Notice that *Grundstimmung* for Heidegger are ontological, not psychological. Dasein, equipped with moodal understanding, is a place that Nothing unfold itself. Heidegger goes on to illuminate this idea by defining Dasein as “being held out into the Nothing” (*Hineingehaltenheit in das Nichts*):

man’s existence is “held into” “this” nothingness, into this completely other of being. Put differently, this means, and could only mean, “Man is the seat-holder [*Platzhalter*] for nothingness.” This sentence means that man is holding the place open for the complete other of being, so that in its openness there can be such a thing as being present (Being). (Heidegger 1958: 97)

Therefore, Nothing or non-Being isn’t subjective and can be described logically.

7. Conclusion

In this paper, we employed Priest’s paraconsistent logic for explaining Nothing. It was shown that ontological difference that makes Nothing a contradictory entity is susceptible to logic and Carnap’s absurdity argument is refutable. However, the other Carnap’s criticism that points to the irreducibility of metaphysical words to words that occur in “observation sentences” (Carnap 1959: 63) cannot be countered in this way.

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I think Heidegger himself would endorse such a reconstruction, because he thinks that classical logic is nothing but a contingent expression of fundamental rules of thought. Certainly, paraconsistent logic can be regarded as one of these alternative expositions of Logic which permits of contradictory entities.⁵

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⁵ I am grateful to the anonymous referee for their helpful comments on the earlier draft of this paper.

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