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WHY THERE IS NO REMAINDER LEFT AFTER THE HUSSERLIAN *WELTVERNICHTUNG*

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This is an article that aspires to refute Husserl's well-known aphorism in *Ideas I*, namely that absolute consciousness is what is left after the annihilation of the world. This claim, taken as meaning that the validity of existence of the objective world is delegated to the non-eliminable presence of a constituting and meaning giving transcendental consciousness, is challenged primarily on phenomenological-ontological and next on epistemological grounds. Concerning the former, I draw attention among others to certain deficiencies of the transcendental reduction process which leave room for certain mundaneity concerns that may reach to the conception of transcendental consciousness itself. Concerning the latter, I have relied to a significant extent on the epistemological content of some concrete phenomena of the quantum world to show that there might be some kind of "reality" beyond the one captured by the available means of detection and further objectification by a human consciousness. The overall intention is to show that there exists a non-eliminable part of the world at large lying in a non-contingent sense beyond the scope of a transcendental consciousness.

Keywords: absolute ego, a priori synthesis, independent reality, mundane, ontological residuum, quantum theory, transcendental consciousness, transcendental reduction.

ПОЧЕМУ ГУССЕРЛЕВСКОЕ *WELTVERNICHTUNG* НЕ ОСТАВЛЯЕТ СЛЕДОВ

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Настоящая статья направлена на опровержение знаменитого афоризма Гуссерля из «Идей I», гласящего, что абсолютное сознание можно определить как то, что остается после уничтожения мира. Это утверждение обычно понимается в том смысле, что обоснованность существования объективного мира зависит от неустранимого присутствия конституирующего и придающего смысл трансцендентального сознания. В этой статье оно оспаривается в первую очередь на феноменолого-онтологических, а затем и эпистемологических основаниях. Что касается первых, то я, в частности, обращаю внимание на некоторые недостатки процедуры трансцендентальной редукции, в силу которых некоторые мирские проблемы оказываются устраненными не полностью и могут затрагивать саму концепцию трансцендентального сознания. Что касается эпистемологических оснований, я в значительной степени опирался на эпистемологическое содержание ряда конкретных явлений квантового мира, чтобы показать, что может существовать некая «реальность», выходящая за рамки реальности, которую можно уловить доступными средствами обнаружения и дальнейшей объективации человеческим сознанием. Главная задача статьи состоит в том, чтобы показать, что существует неустранимая часть мира как такового, лежащая за пределами трансцендентального сознания.

Ключевые слова: абсолютное эго, априорный синтез, независимая реальность, мирское, онтологический остаток, квантовая теория, трансцендентальное сознание, трансцендентальная редукция.

1. INTRODUCTION

One can hardly find a philosopher especially of the analytic tradition, perhaps even a phenomenologist, who would not be struck by the assertiveness of the title of paragraph 49 of Husserl's *Ideas I*: *Das absolute Bewusstsein als Residuum der Weltvernichtung*, meaning that absolute consciousness is what is left out in annihilating the objective world, ontologically already suspended by the epochë (Husserl, 1976a, 103).

The present article will primarily deal with the weaknesses in the assertiveness of Husserl's statement above, considered even with the *granum salis* of an aphorism, from a phenomenological and to some measure ontological point of view and to a no lesser extent from an epistemological one insofar as epistemology, in virtue of a philosophy of science, has raised issues, at least from the beginning of the 20th century onward, that cross with the great ontological questions over time. Indicative of the theoretical interest on matters of possible confluence of phenomenological philosophy with issues on contemporary epistemology are Bitbol (Bitbol, 2021), Boi (Boi, 2007), French (French, 2023), Lurçat (Lurçat, 2007), Livadas (Livadas, 2011), Berghofer & Wiltsche (Wiltsche & Berghofer, 2020).

In the epistemologically motivated part of the present work which engages to some, naturally limited extent, with the current state of knowledge in quantum theory, as being in the central core of the debate on the mutual relevance of philosophy-ontology with epistemology, I will try to articulate an ontologically relevant argumentation

on the epistemological turned ontological "vacuum" left in the context of quantum observation. This latter is taken as including the technologically available means of detection and measurement as well as the perceptual and constitutional capacities of the human factor. I note that bringing up and giving a special place to the quantum theory in the ensuing philosophical discussion is by no means a random choice, in fact it is an organic part of the methodological scheme put up precisely to be able to offer a convincing counterargument to the central Husserlian claim of the title. Of perhaps no lesser importance is the place of the mathematical substructure underpinning quantum mechanics in the generation of the aforesaid vacuum, something that holds good also with the theory of general relativity although in a less evident way. Even though to the one or the other degree a subsumed ontological influence of mathematics in natural science is implicitly met in every physicist's daily routine, it is still left virtually unaccounted in spite of the growing interest on the issue on the part of philosophers, theoretical physicists, mathematicians, and further.

In this respect Simons seems right to support that

> Theoretical physicists may become so adept at using mathematical formalism that they may think that the mathematics they employ is a transparent representation. It is not: no representation is wholly transparent, and the facility by which physicists can wield mathematical representations to represent physical situations is in need generally of explication (Simons, 2002, 49–50).

Even though a discussion of the ontological content, and particularly the phenomenological one, of the relationship of mathematics with certain aspects of modern physical theory might help illuminate the philosophical big picture, which in the specific case is the refutation of the Husserlian assertion that absolute consciousness is the remainder left over after the annihilation of the world as real objectivity, it would drive us far apart from the main focus of this article and therefore it is an undertaking left perhaps for a future paper.

Here I am primarily interested in arguing for a remainder of the world, the latter as the most broadly meant field of an ontology of being, that finds itself beyond the scope of the intentional-constitutive capacities of the transcendental consciousness of the subject, on philosophical and, in particular, phenomenological grounds. As supportive of my overall philosophical argumentation I set out in the last section to offer an epistemological narrative on the possibility of existence of a kind of "reality" unaccounted for by any available means of human "observation", a fact that may reach to the transcendental sphere with reference to the (absolute) consciousness of the human subject. As already alluded to, the choice of preference for the epistemological part of the paper is primarily quantum theory, avoiding of course any cumbersome

and repulsive for the philosophical reader technical details, in virtue of bringing to the forefront like no other scientific discipline the constitutive role of human consciousness possibly taken in non-physically reductionistic terms.

Concerning the philosophical part I have tried to draw attention to certain ambivalences and weaknesses in the Husserlian theory on the "essence" and modes of the transcendental (or absolute) consciousness of the human subject that seem to foment the discussion on the unfeasibility of a purely transcendental consciousness and a purely transcendental experience for that matter, without certain allowances of mundaneity along the way or without occasionally gliding into conceptual circularities[1]. To the extent that the transcendental sphere seems not to be immune to mundaneity concerns, in other words to the extent that there is a residuum of the ontology of the world itself with regard to the phenomenological transcendental reduction, one has good reasons to place between ontological brackets the absoluteness of the Husserlian position on the non-eliminability of the absolute consciousness even after the annihilation of the world as an objective totality of being.

Except for the references to the original Husserlian texts and to a far lesser extent to certain Heideggerian views, I have made ample reference and comments on the issue at hand to Jacques Derrida's positions on the role of genesis in the Husserlian transcendental phenomenology in (Derrida, 1990), to Husserl's disciple and later collaborator Eugen Fink's views on the "loopholes" in the transcendental reduction process in (Fink, 1970; 1981; 1995) to J. N. Mohanty's views in (Mohanty, 1985), as well as to other Husserlian scholars, among them to another Husserl's disciple, Roman Ingarden. The author's own position is made clear throughout all sections and especially in the last one.

2. THE PERSISTING AMBIGUITIES OF THE HUSSERLIAN TRANSCENDENTAL REDUCTION

It is well-known that the concept of absolute ego as an absolute subjectivity "out of this world" and yet irreducible constituting factor of "being in this world" is regarded by many scholars, within the phenomenology and more generally the continental philosophy community, as left unclarified by Husserl to the end of his life. To cite, for example, his one time disciple and collaborator Martin Heidegger's view on the matter, the (immanent) transcendence by which it is invested the Husserlian absolute

[1] A notable work on the nature and possible conceptual circularities in the conception of the pure Husselian ego is S. Taguchi's *Das Problem des ‚Ur-Ich' bei Edmund Husserl* (Taguchi, 2006).

ego in virtue of an absolutization of inner time consciousness, is an event (*Geschehen*) of existence.

A glimpse of the way the Heideggerian Dasein's existence is "saturated" with its peculiar mode of being-in-the-world in its concrete plenitude is the extent to which being means to exist in such a way that one "takes care" of one's own existence, so that an understanding of being is implemented in terms of a phenomenon of the world, or more precisely, of the structure of "being-in-the-world". Moreover the "being-there" of Dasein as an existential form would be inextricably linked with temporality wherein temporality becomes the prerequisite of acceding to a meaningful interpretation of the "being there" of Dasein. Temporality for Heidegger would become in fact the gold standard of a meaningful interpretation of the "being there" of Dasein: temporality not as a category, but as an existential (Heidegger, 1999, 25). In consequence the "being there", taken as associated with the Heideggerian conception of Dasein and in no way defined in terms of an epistemological sense of spatio-temporal location, cannot but render its ontological legitimacy to the peculiar subjectivity of Dasein and the way it constitutes the "being there" as part and parcel of its own being-there-in-the-world. In some kind of conceptual affinity, in the *Late Texts on Time Constitution* (*Späte Texte über Zeitkonstitution*), Husserl stated that the temporal present is given as a subjective spatial present that has a relationship with myself and my "whereabout" in various ways. This "how" of spatial present, although ontic, subjectifies further the temporal present and so even the temporal modes of orientation (Husserl, 2001b, 180).

After all one cannot eliminate a sense of a mundane "being-there" in reaching the "essence" of absolute ego as implying a concept of consciousness-of, while in reverse order consciousness-of deprived of "being-there" is unthinkable. Moreover to the extent that inner temporality, in the Husserlian sense, is reducible to the constitutive, transcendental source of the ego of consciousness, temporality by this token would be nullified without the assumption of a mundane "being-there". Further it would be impossible to have a sound conception of the objective "being-there" without a reduction to a sort of presence in the actual now as an unambiguous evidence in mundane terms even though it may actually entail a subjective origin of actuality in the sense of presentification (*Gegenwärtigung*) (Husserl, 2001b, 4, 7).

Yet the objective "being-there", if thought of as inalienable from the "essence" of absolute (transcendental) ego, may be argued to involve a non-eliminable factor behind any well-meant conception of reality. This said, reality in a proper sense may be defined as the totality of what exists in which even though we are parts of it, in terms of reciprocity in constitutive terms, we are definitely not its regulators in causal-ontological terms. In this sense even though the disappearance of the world as spatiotem-

poral field of human life would also make disappear my being in general, above all my being-in-the-world, the disappearance of the world as validity would presuppose the prior cessation of my own having ever-been (*Je-gewesen-Sein*). It would accordingly be nonsensical to consider a cessation of being of the world, so long as there is a present and there was a past, without eliminating first my own being for which "was", "is", and "will be" have meaning and validity within immanence (Husserl, 2013, 20). In this understanding the Husserlian postulation of absolute consciousness as the residuum left after the annihilation of the world could be reformulated as the validity of the world nullified after the annihilation of (human) absolute consciousness.

But then one could reasonably ask about the meaning of the word validity in the situation at hand: does it refer to a property or categorial characteristic possessed by things or states-of-affairs themselves or would it be taken as an axiological term referring to the perceptive, constitutive and meaning-giving capacities of the human subject? By all means validity in this case can have no other meaning than what appeals to humans as the exclusive justificatory origin at least in virtue of constitutive and meaning giving subjects in a phenomenological transcendental sense. In such terms the validity of the world is hetero-determined by a transcendental source, i. e., the absolute consciousness allegorized by Husserl as the absolute ego of consciousness, whose "essence" in a kind of ontic circularity is inalienably associated with being-there-in-the world insofar as it makes itself present in the world (think, e. g., of the intentionality of absolute consciousness as being in effect an unconditional "entrance" to the world), even though ontologically it is not part of the world.

If, on the other hand, we consider the real world with all its objectivities as potentially non-existent and yet leave the intentionality of consciousness "intact" insofar as it is considered in its noetic sense as an a priori directedness toward "something-in-general" independently of its physical or generally objective existence, this would be probably a reason to vindicate Husserl's aforesaid aphorism. In an analogous sense the time of the world would be the immanent time of consciousness in congruence with all temporal processes and objectivities within-the-world. Yet this is a position that has raised reasonable controversies, e. g., as to what would have occurred to intentionality in a collapsing toward annihilation world in which case P. Ricoeur, for example, has talked about the destruction, due to internal conflict, of any intentionally founded truth inasmuch as intentional consciousness faces the chaos[2]. Conceding to this latter hypothesis is implicitly challenging the a priori character of intentionality and its complete independence vis-à-vis the world as real objectivity, undermining

[2] See (Derrida, 1990, 145).

in effect the possibility of a "residuum" of consciousness after the annihilation of the world. This is not the only prompt to raise a counterargument to the Husserlian claim about a remainder of absolute consciousness after the annihilation of the world. The questions raised by the biological death of humans as embodiments of the absolute ego as well as by the "biological" appearance of intentionality starting in a mother's womb, respectively in Husserl's *Boundary Problems of Phenomenology* (*Grenzprobleme der Phänomenologie*) (Husserl, 2013), and the *Late Texts on Time Constitution* (*Späte Texte über Zeitkonstitution*) (Husserl, 2001b), bring up also serious concerns about the validity and soundness of the Husserlian assertion. I'll come up again with some further arguments on this matter in the next.

In the following, taking advantage of Derrida's critique of the concept of genesis in the Husserlian doctrine of radical transcendental reduction, I am going to argue against Husserl's controversial claim under discussion of *Ideas I*, on the grounds that any concept of absolute subjectivity we may think of, in the sense of a transcendental subjective origin of our presence-in-the-world, is unthinkable without assuming the world as its ontic presupposition. I note that Husserl's disciple and collaborator Eugen Fink had objected, e. g., in (Fink, 1970), to the purely transcendental level reached after the radical phenomenological reduction in a notable demonstration of the conceptual pitfalls or even plain circularities involved in trying to establish a sound foundation for a purely transcendental, ego founded level. Except for Fink, Roman Ingarden had also subjected Husserl's "idealist" tendencies to a bold criticism in view of the main ontological problem of Husserl's brand of idealism, i. e. the problem of the presumed community of essence between the being of reality and the "being" of pure consciousness. He further argued that in contrast with *Ideas* where the essence heterogeneity (between the being of reality and that of pure consciousness) is starkly emphasized, later in the course of Husserl's investigations the fundamental position of the differentiation of essences (*Wesensverschiedenheit*) is annulled and reinterpreted in terms of the distinction between noesis and noema. In Ingarden's viewpoint, on the one hand, reality is reduced to "something assumed" (*Vermeintes*) and further grasped as a "nothing" taken into account that any posited thing may be considered the correlate of an interminable sequence of phenomenological perceptions, reducible to the state of a noematic sense and, on the other hand, the essence of consciousness is "projected" to the noema. Reality therefore may be deprived of a self-standing being, since it has the essential "being" of something that is, in principle, only intentional, only applicable to consciousness. Ingarden sees, consequently, no grounds for the "being-in-itself" (i. e., what is more than a mere intentional being) of reality to be abolished (Ingarden, 1972, 362, 365, 369–370). In *Die Streit um Die Existenz der*

Welt (*Controversy over the Existence of the World*) Ingarden further criticized Husserl's sense of transcendence as vague (*ungenau*), in view of the dependence of the being of reality on pure consciousness, while concerning the absolute "being" of pure consciousness, which *nulla re indiget ad existendum*, he had a sharper tongue. He asserted that in talking about the absolute being (of pure consciousness) either in the sense of an autonomy of being (*Seinsautonomie*), or in the sense of being-independence (*Seinsunabhängigkeit*), Husserl only made use of a traditional expression of the European metaphysics of the 17th century without toiling to give it a more precise meaning (Ingarden, 1964, 148–150)[3].

In any case Husserl's strive for a transcendental, non-mundane foundation for the absolute ego of consciousness seems bound to become captive to the impossibility to accommodate the transcendental, atemporal, out of the world "essence" of the absolute ego with the necessity of its presence in the world, in whatever guise one might think of. Moreover, one has to settle with a linguistic environment that is inseparably linked with objective being, in other words with an image of the world as objectively existing, a deficiency that Husserl himself was ready to concede in the *Lessons on the Phenomenology of Inner Time-Consciousness*, in which case he made clear that our linguistic means are deficient for the description of the absolute flux of consciousness in non-objectivist terms (Husserl, 1991, 79).

A linguistic deficiency seems to underlie also the Husserlian concept of transcendental genesis (in contrast with mundane genesis), insofar as absolute subjectivity is the "product" of the temporality of an original synthesis i. e., of the constituting temporality of the transcendental ego itself, while oddly enough genesis is re-introduced within the "neutral" sphere appealing to the transcendental reduction[4]. In turn the concept of original temporality thought of as the foundation of the a priori synthesis of existence and of the "essence" of the ego may involve insurmountable difficulties in its own right, something I will deal with in the next.

Derrida held the view that Husserl, putting the a priori synthesis of being and time as foundation of every genesis and every signification in order to save the rigour and purity of the "phenomenological idealism", had not opened up transcendental reduction and had not re-adjusted its method (Derrida, 1990, 41). He also insisted that

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[3] See for the English translation in (Ingarden, 2013, 184–185).

[4] Indicative of the constant risk of getting perplexed in conceptual overlappings is Derrida's critique that in Husserl every a priori synthesis, founded on a concrete intuition in which every being is given "in person" is "temporal and enriching. It is confounded with a genesis. What holds for a priori synthesis holds *a fortiori* for a posteriori synthesis. Yet only a priori genesis poses a real transcendental problem" (Derrida, 1990, fn 49, 94, transl. of the author).

Husserl, instead of describing passive synthesis as the pure existential experience preceding any transcendental constitution of the subject, irreducible as such to whatever eidetic elucidation, instead of making it the epicenter of existence and pre-categorial objectivity, he envisaged it simply as condition of the possibility of active genesis properly meant (Derrida, 1990, 231–232). As known a priori or passive synthesis in the Husserlian sense is a transcendentally charged term with vague ontological or even transcendental-phenomenological content in performing the transcendental reduction. I point out that the very idea of the passive constitution of the temporality of the ego seems to be a contradiction in terms if by this we mean passivity "inside" the ego, since the ego can be only conceived as always "being" by necessity in-act. For Derrida a moment of passive synthesis may point to a pre-transcendental domain, by all means a hazy and *ad hoc* invention (Derrida, 1990, 256). And yet an a priori synthesis seems to be a necessary subjectively founded condition to pass from a multiplicity of acts of consciousness to a unity, which is not reducible to a sensuous aggregation of material or formal objects, the latter including such mathematical objects as sets or classes of sets.

I note that Derrida's grave critique that Husserl had been forced to a *mélange* of empiricism and metaphysics (both anathema to transcendental phenomenologists) is basically directed to Husserl's failing to start from an ontological a priori instead of a phenomenological a priori and from failing to synthetically and dialectically unify being and time which would permit to clarify the genesis of a priori and the a priori of genesis (Derrida, 1990, 270). In a certain definite sense, Derrida's alleged need for the "primacy" of the ontological a priori in the place of the phenomenological a priori seems to be welcome to the extent that invigorates my argumentation on the possibility of refutation of Husserl's annihilation of the world that precedes the annihilation of absolute consciousness.

In *Experience and Judgment* (Husserl, 1973), Husserl offered some clues to the fact that the kind of unity referred to above might be reducible to an original form of the self-constituting temporality of the transcendental ego, in characterizing this unity as founded neither on material elements nor on the essence of things as real objectivities (Husserl, 1973, 188–189). He insisted that to make a collection of objects (e. g., a set of formal objects or a class of sets of such objects) a thematic objectivity in actual presence within immanence, an act of a higher level is required, not one of passive receptivity but one of productive spontaneity. This was termed a retrospective apprehension (*rückgreifendes Erfassen*), an act whose content is that of the thematization by the constituting ego of a collectivity, pre-constituted by the polythetic act of colligation, into an identifiable and re-identifiable object-meaning possibly posited as a substrate of judgments (Husserl, 1973, 246–247).

This kind of sensuously unconstrained unity in mathematics by which we can have the intuition of infinite classes or infinite sets, and consequently a meaningful content for all ranks of infinite cardinals in the mathematical theory of sets, is thought as reducible to the objectifying "acts" of the transcendental ego in the world as temporality constituting. By whatever denomination one may call it, this kind of a priori synthesis grounds the possibility for abstraction and yet the original, transcendental act as originally synthetic itself takes effect in some temporal mode. It follows that the question of temporality as both implied by and implying a transcendental constitution appealing in turn to the transcendental ego of consciousness, is brought upon with particular gravity in the process of reaching to the transcendental origin of the world as phenomenon.

As known the question of the origin of (inner) temporality, which was for Husserl undetachable from the question of the origin of the transcendental ego of consciousness[5], in spite of his painstaking efforts throughout all his transcendental phase to avoid an infinite regression of time-constituting egos and thus ensure an absolute subjective origin of time that would be "unthinkable" itself, was never clarified. Yet if indeed such an "unthinkable" origin, i. e., one that would be in no need of a further *a tergo* reflecting ego, would be atemporal who/what could be "there" to testify on its a-temporalness, whereas in case it would be temporal what would be the "prima causa" of its temporality? Could it be an identical subject one that appears as such and at the same time one that is also temporally self-constituting? But Husserl has clearly stated elsewhere[6] that the concept of identity, strictly speaking, applies only to ideal entities, whereas talking about a subject even as an absolute ego after the transcendental reduction can by no means regarded as an ideality.

As a matter of fact, Husserl's undertaking, in the *Bernau Manuscripts*, (Husserl, 2001a) to describe the primary process (*Urprozess*), i. e., in an essential sense the absolute ego of consciousness, as a transcendental time-constituting process that cannot

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[5] Derrida pointed in this connection to a correlation between a unique pure ego and a unique living "flux" that is reducible to a deeper genetic synthesis which is to such extent original and a priori that one cannot absolutely determine whether time precedes absolute subjectivity or inversely, in taking constituting subjectivity as being merged synthetically with time (Derrida, 1990, 171–172). He also noted elsewhere that the origin of absolute time which is neither activity nor passivity of the subjectivity rests "shrouded". If the ante-predicative time is the foundation of absolute time that implies the unity of the couple activity-passivity, no one knows the primary condition of its constitution and the accord between the time of the transcendental subject and that of the real substrates (Derrida, 1990, 200).

[6] See (Husserl, 1970, 313). When references are made to this Husserlian work from now on, it will be simply referred to as *Crisis*.

be apprehended by reflection (and thus generate an endless regression of hierarchies of egos) and such that being and constituted-in-being in it are inseparable, proves to be again a phenomenological *cul de sac*. It seems utterly meaningless to talk about a temporal process or state-of-affairs as constituted prior to any reflection "without the attentive regard of a time-constituting consciousness" (Livadas, 2019, 580–581). Accordingly, I mention Fink's question in (Fink, 1995):

> Do the theme, transcendentally flowing life, and the thematizing action stand in the unity of a "now"? Do both belong to the same transcendental stream of experience? We see returning here in more specific contexts problems that we have already indicated in formal fashion, viz., the problems of the "identity" of the phenomenologizing I and the constituting I in the difference of their transcendental kind of being (Fink, 1995, 52–53).

In the bottom line the question remains essentially open as to how a transcendental, time-constituting process can be apprehended by any other means except by reflection. Evidently if object-contents exist and flow as a continuous "sequence" the question posed concerns the founding possibility of apprehension of these contents and of their flow. This process cannot supposedly consist in phenomenological perceptions (*Wahrnehmungen*), upon which we can reflect since in this way these perceptions and their hypostasized contents are to be objects in a "second order" time constituting process in an open-ended horizon. It follows that it is either nonsensical to talk about the possibility of a process prior to any reflection or else generate an infinite chain of circularities associated with the presence of a temporality-constituting consciousness. In either case there seems to be no way of establishing the primary source of an infinite chain of regressions associated with the reflective regard of a temporal ego, other than by conceding to the transcendental character of the absolute ego knowable only as its "mirror-reflection image" in temporal objectivity (Livadas, 2019, 580–581). Evidently this is a state-of-affairs that calls for the outright destruction of any absolute ontological ties the so-called radical transcendental reduction might have been thought to possess. This seems to hold *a fortiori* insofar as phenomenology, in virtue of a science of evidences as given "in person" in front of a constituting consciousness, requires beforehand an ontology as a moment of synthetic self-constitution of being which is originally identical in time. For Husserl himself phenomenology requires an ontology already in the sense of constituted, otherwise his kind of transcendental idealism risks to be confounded with classical idealism (Derrida, 1990, 238).

Gadamer might have a point *a propos* when he alluded that Heidegger sees an ontological prejudice operative in Husserl's foundational structure that finally affects the whole idea of a constitutive phenomenology. Husserl tried to overcome this crit-

icism by reducing every sense of being to the possibility of its exhibition in constitutional analysis, including the sense of being of Dasein transformed to the discussion of the eidos of Dasein. Yet all questions of constitution "originate precisely in the self-constitution of temporality, in that final limiting stratum of the 'primal phenomenal present' which alone, according to Husserl, is not 'being' in the same sense as everything that is constituted as being" (Gadamer, 1977, 169–170). Gadamer had plausibly in mind the inherent, and insuperable in effect, difficulties that faced Husserl especially in his Bernau and post-Bernau work to ensure a purely transcendental origin of consciousness immune from any objectivity-facticity constraints.

The difficulties encountered in attributing a meaningful sense to the absolute ego as being in ontologically "non-homogenous" terms with the world and yet as non-eliminable in virtue of a kind of non-mundane presence-in-the-world, are also evident in Husserl's *Late Texts in Time Constitution* in which the absolute ego is virtually considered a logical necessity, essentially deprived of any existential characteristics, almost reducible to an abstract concept:

> In the stream of the living present it is [the ego-pole] the identically persisting pole with regard to the change of immanent temporal occurrences. I always said: This pure "ego" is abstract, it is concrete only through the content of the streaming present (Husserl, 2001b, 53)[7].

3. IS IT REALLY FEASIBLE A RADICAL TRANSCENDENTAL REDUCTION?

If the ultimate purpose of transcendental phenomenology is to reach the absolute subjectivity of consciousness and its "personification" in the transcendental ego, thought as totally immune to objectivity concerns that would lead to an endless regression of subjectivities, a first question that may arise is the means applicable in performing the so-called radical transcendental reduction. If transcendental reflection is the primary way to go through, the question is whether there is any guarantee that there can be no seeds of mundaneity implicit in the process of reaching the absolute constituting factor within consciousness. As I have already mentioned Eugen Fink had become in his later years critical as to the feasibility of the transcendental phenomenology project mainly in (Fink, 1970; 1995). Below I'll give some further arguments on the issue that may embolden my principal position in this article.

Of course talking about transcendental reflection we do not talk about some kind of pre-reflective translucency or reflexivity that is a fact of our conscious life nor of some kind of mental introspection or mental limpidity states and so forth associ-

[7] Translation of the author.

ated with versions of empirical psychology or even esoteric doctrines bordering to mysticism. If transcendental reflection is thought of as reflection on the object-constituting role of consciousness, this may be either reflection on the noetic acts of transcendental consciousness (i. e., acts by which objects are intentionally apprehended and constituted as immanent ones) or on their noematic content (i. e., objects constituted as well-meant ones). J. N. Mohanty's conception of transcendental reflection is:

> Phenomenological reflection, i. e. the reflection that is practised in transcendental phenomenology, begins with noematic reflection, and after delineating the structure of a noema moves on to reflecting upon the acts whose noema it happens to be. These acts and their correlative noemata may, then, be seen as belonging to the life of an ego (Mohanty, 1985, xix).

However J. N. Mohanty is adamant about the fact that there can be no transcendental motivation for doing transcendental philosophy, in fact the motives for doing transcendental reduction are all mundane. He refers, for example, to Kant whose motives "in looking for the transcendental foundations of knowledge and morality", were as much historical as epistemological and to Husserl whose motive "to start with, was to clarify the basic concepts of logic and mathematics (which are historically accomplished disciplines) by looking for their 'origin' in the eidetic structures of the mental life of the thinker" (Mohanty, 1985, xxiii). Taking also stock of Mohanty's claim on the impossibility of an authentic transcendental reduction, the core of the matter is that indeed there is serious evidence that there are conceptual lacunes and overlappings or even linguistic vagueness in arguing for the possibility of a radical transcendental reduction. For instance, the non-eliminable residuum between the transcendental ego acting in the living present through intentionality as its inalienable "entrance" to the world and its presumptive pure self, for all of Husserl's elaboration is left thematically unclarified. In fact Husserl took concepts from the glossary of the mundane sphere, e. g. constitution, retrospective apprehension (*Rückgreifendes Erfassen*), intentional perception (*Wahrnehmung*), etc., to designate the intentional activity of the transcendental subject with regard to the world of things, which acquire their meaning solely in reference to what is constituted within the world, for otherwise and in an absolute sense of transcendental constitution they would just be meaningless linguistic expressions. For example, by retrospective apprehension Husserl meant an act of the constituting ego whose content is the thematization of a collection of abstract objects, pre-constituted by the polythetic act of colligation, into an identifiable and re-identifiable noematic object, e. g., a set of "zero level" abstract elements or a class of such sets in mathematics (Husserl, 1973, 246–247).

It is notable that in spite of Fink's recognition of Husserl's prowess in exhibiting and clarifying the intentional attributes of transcendental subjectivity, he was still re-

served that "The connection between speech and the transcendental-phenomenological understanding of Being remains in the dark" (Fink, 1981, 68).

The non-eliminable place of the world in an absolute ontological sense with regard to the transcendental subjectivity may be seen if we consider the former as juxtaposed to the concept of world as a noematic structure, that is, as a world-noema not in the sense of the totality of all worlds but in the sense of that "world-universe" whose versions all other are. The world-noema would moreover serve as a non-relativistic foundation in the sense that it could serve as a regulative concept which would provide the way out of a hopeless relativism toward communication and understanding between supposedly incommensurable worlds (Mohanty, 1985, xxvi). In a very concrete sense Husserl pointed out in *Ideas I* that even for mental lives living on the planets of the remotest of stars:

> <…> nevertheless there exist, eidetically regarded, essential possibilities of effecting a mutual understanding and therefore possibilities also that the worlds of experience separated in fact become joined by concatenation of actual experience to make up the one intersubjective world, the correlate of the unitary world of mental lives (the universal broadening of the community of human beings each as reduced to his pure conscious living and his pure ego (Husserl, 1983, 108).

However Husserl admitted that even if there are worlds or physical things whatsoever so that the experienced motivations of their constitution may extend to my own constituting capacities and to those of any other ego by intersubjective agreement, there may still be physical things and worlds of physical things "which do not admit of being definitely demonstrated in any human experience; but that has purely factual grounds which lie within the factual limits of such experience" (Husserl, 1983, 109). This means that behind the global noematic horizon of a world that serves as the common ground of human experience in its transcendental-eidetic structure, termed by Husserl the founding soil (*das gründende Boden*) of human experience, he was ready to concede that there might be physical things and worlds of physical things that may elude the intentional apprehensive and constituting capacities of human egos as a matter of fact and as factually determined. In this sense these "worlds" would be the de facto unknown remainder with regard to any given world which "may be recovered as a structure within the subjective life of any thinking ego", in other words with regard to the world characterized by Husserl as the life-world in *Crisis*. The horizon of the life-world as a world-noema, bearing a non-relativistic foundation[8] and moreover

[8] This expression has nothing to do with the corresponding epistemological term of general relativity; it means in this context that different worlds, can find the origin of their sense as worlds within the subjective life of a transcendental ego and thus be intercommunicable and intertranslatable.

as that which makes any world whatsoever in that sense possible, cannot be meaningfully denied without first denying the constitutive structure of transcendental subjectivity, and yet this cannot stand as an apodictic evidence to the non-existence of things or worlds of things "extraneous" to the horizon of the life-world. In other words there is no way one can exclude, on ontological grounds, a world beyond the world of noemata as appealing to at least one embodied transcendental subjectivity living in the life-world. This kind of "external" world may be imaginable in the way schematically put by Findlay in (Findlay, 1970) as the world which is:

> <…> to all intents and purposes a continuous background which could not be eliminated, which can be held to include the possibility and the actuality of all contingencies, which has arguably the highest degree of continuity and connection consistent with the necessary separateness of the instances of empirical contraries, and which belongs, in virtue of this connectedness, to the supreme category, that of the exhaustively determined thing, that a respectable ontology permits (Findlay, 1970, 204–205).

Of course, one may object that in the final count phenomenological inquiry does not ask about the *Sein* of the world but rather about its *Sosein*, i. e., the way it is constituted as such with all the meanings associated with it and all things in the world being as such. In a certain sense we may distinguish by this measure phenomenology from ontology properly meant even as they cross roads in pretty many respects. Yet the *Sein* of the world cannot be bracketed at least in the context of the present discussion:

> Even if transcendental subjectivity is the condition of the possibility of objectivity and world and science, from the structure of that subjectivity it is not possible to deduce what in details the world and our science, i. e., our ontology and our theory would be like. There is no route from consciousness to the world. For philosophy, the route is from given, i.e. already constituted meanings, to their genesis. Transcendental philosophy therefore has no answer to the sorts of why questions I asked at the beginning of this section (Mohanty, 1985, xxix).

I conclude this section by offering some further prompts as to why transcendental subjectivity may not be ridden of some measure of facticity implied by its "vocation" to appear and act within-the-world. One may face, for example, the question of whether transcendental subjectivity might be just a modality, an existential possibility of the factual existence of man whose original mode of being is the Heideggerian Dasein, or whether "being in the world" is a modality of transcendental subjectivity, a mode in which transcendental subjectivity "apperceives" itself (Mohanty, 1985, 156). It may be further raised the question of whether consciousness is prior to existence or existence is prior to consciousness. Of course the natural attitude implies

that existence comes first since the emergence of consciousness presupposes various other modes of existence such as inorganic and organic matter in whose absence there cannot be a meaningful talk about consciousness as active presence in the world, a fact made especially evident in the case of biological death. This ultimate biological condition, that Husserl faced as a limiting case and rather marginally in the *Boundary Problems of Phenomenology*[9], threatens to undermine the very foundations of the phenomenological conception of consciousness as the pure, transcendentally reduced subjectivity with its real objectivity status placed under brackets by epoché. This means that even as transcendental consciousness was made by a priori considerations to be unconstrained by facticity and unfettered by objective reality concerns, one may be forced to face two landmark factual conditions (death along with birth[10]) of each human ego constraining *in extremis* by this fact alone the validity and the scope of the field of transcendental consciousness considered in an absolute sense.

As a matter of fact, corporeality and the life-world appear to pose from two distinct perspectives the limits of the transcendental field of experience insofar as the transcendental ego with its field of transcendental experience must be derivative and dependent in that the philosopher who assumes the attitude of transcendental reflection nevertheless continues to be a corporeal being belonging to and actively relating to the life-world. On the other hand, it is within the life-world framework that reflection, as a special sort of human activity, has its place to the extent that the life-world is generally meant as the correlate of human intentional and noetic-noematic capacities[11]. J. N. Mohanty goes a step further in the "naturalization" of transcendental consciousness, by claiming that "that the concepts 'human' and 'existing' have their constitutions within the field of transcendental consciousness" and by further stating that:

> <…> the Husserlian transcendental consciousness is not merely reflective and intellectual, it rather comprehends within itself, as a basic stratum, pre-reflective perceptual consciousness including the lived body as a system of intentionalities. <…> Positively speak-

[9] In *The Boundary Problems of Phenomenology* (Husserl, 2013), Husserl tried to elude the question of death as cardinally posed in itself, as well as that of the sleep and the state of the unconscious, by seeking recourse to a kind of intersubjectivity where one cannot know or tell about death but as a living person. This is summed up in the aphorism: *Ohne Leben kein Tod*., i. e., Without life no death!

[10] I note that Husserl talked in the *Late Texts on Time Constitution* about the emergence of an instinctive intentionality in the first stage of infancy in the mother's womb (Husserl, 2001b, 73–74).

[11] J. N. Mohanty thinks that these are the limits any consciousness-oriented philosophy, like phenomenology, must accept. He has also suggested that only an existential philosophy, like the Heideggerian one, can integrate these limits into its own structure. At another point, however, he argued for a kind of convergence between existence and consciousness philosophies, which he characterized as an isomorphism in structure. See (Mohanty, 1985, 162, 159).

> ing, what I am trying to emphasise is that transcendental consciousness is the empirical consciousness as freed from its naivity, from its unrecognised ontological commitments, from its anonymous self-interpretations (Mohanty, 1985, 163–164).

The culmination of this unexpected fusion of the transcendental and the mundane in Mohanty's narrative is that "We do not need the myth of two worlds. The transcendental is the mundane, only freed from that self-forgetfulness, that naivety and that self-interpretation which constitutes mundaneity" and also his almost whimsical provision that "This seeming collapse of the distinction between the empirical and the transcendental is the destiny of transcendental philosophy" (Mohanty, 1985, 222). I think these claims, rather than taken as highlighting a paradoxical coming together of the transcendental with the natural field of experience, should be rather regarded as a further vindication of the position that there cannot be a purely transcendental consciousness, and a pure transcendental experience totally detached or detachable from objective reality constraints.

In closing this section I draw attention, in virtue of my argumentation so far, to a strong evidence that there is not, nor could there be, a pure transcendental consciousness and consequently a pure transcendental experience exempt from elements of facticity, something that means there might be some remainder of objective reality in the world "immune" to immanentization in terms of a transcendental constituting consciousness. It seems in an almost circular sense that the possibility the question of being can be made intelligible presupposes the personal Husserlian ego (or the factical existence of Dasein for that matter) which, in turn, presupposes the factual existence of nature and yet what is objectively existent is to be encountered solely in terms of the natural attitude, that is, out of the transcendental sphere. For even on the assumption of suspending the objectivity of the world through epoché:

> There is no way to "seal off" the personal ego as ego-in-act from communicating with the world if it is to be self-evident, conscious of its self-evidence, and therefore possible to be made thematic of and by itself and therefore bring about evidences and judgements relating to itself (Livadas, 2023, 500).

4. WHY THERE IS A REMAINDER OF THE WORLD BEYOND THE TRANSCENDENTAL CONSCIOUSNESS. AN EPISTEMOLOGICAL NARRATIVE

It is a common conviction nowadays that modern philosophy or at least a significant part of it, to the extent that it aspires to found a theory of knowledge, must set its sights into the enigmas of the universe in a spirit never seen in the past where these questions were posed as the exclusive domain of the natural sciences. Specifi-

cally, in the general orientation of the *Crisis*, Husserl has pointed to the ways of modern scientific objectivism as well as the philosophical objectivism of the past may be transformed to a transcendental subjectivism, such that the idea of a theory of knowledge and of a transcendental subjectivism can make up the unity that reigns in every historic vision, a unity that reigns in the conflicts and accords of their transformation. In a certain sense the history of philosophy after the appearance of the theory of knowledge is a history of the strained relations between the objectivist and the transcendental philosophy, a history of the continuous efforts to preserve, on the one hand, objectivism by attributing to it new forms, and on the other, it is a history of the efforts to rein in the difficulties brought up by the idea of transcendental subjectivity itself and the methods called upon in its regard (Derrida, 1990, 276–277). Therefore, in the *Crisis* sense we are faced with the new perspective, namely, "that of the world's validity-as-ground (*Bodengeltung*), as the world that is what it is through actual and possible knowledge, or in general through actual and possible functioning subjectivity". But, at the same time, Husserl acknowledged that great difficulties had to be overcome not only to begin the method of epochë and reduction but also to bring to a full understanding for the first time the absolutely functioning subjectivity, not as human subjectivity (in objectivist terms), but rather as the subjectivity that objectifies itself (Husserl, 1970, 262).

It is not accidental that in this spirit Derrida alluded to a kind of self-inflicted faultiness of the Galilean revolution in that in his appeal to a realm of idealities in the mathematical substruction of nature, in the place of the real world of perceptions, Galileo dissimulated the activity of transcendental subjectivity operating within the real world (Derrida, 1990, 278). Clinging, in particular, to the supposedly absolute evidence of the mathematical universe he allegedly misjudged the evidence of the latter which, in phenomenological narrative, as formal and constituted refers back to transcendental evidences implied by Husserl's reduction of formal mathematics to the status of a formal ontology associated primarily with intentional acts. In this sense Galileo, in Derrida's view, may be considered as a genius who at the same time "uncovers and covers", to the extent that, on the one hand, he helps to discover the mathematical nature of the universe and the universal causality of the sensible world and, on the other, he contributes *ipso facto* to obfuscate the origin and the scope of a genuine transcendental reflection and experience of the world.

Yet I intend to show in the following, on epistemological grounds, that the scope of transcendental consciousness leaves a remainder of the real world that lies, in a non-contingent sense, beyond its bounds. Hopefully given the general philosophical nature of the article the epistemological argumentation will not enter into too many

"technical" details for the philosophical reader. In fact, I will restrict myself to certain features of physical science, mainly quantum mechanics and its recent offshoots, to draw attention to an ontological vacuum between the world as perceived by whatever means available and further mentally constituted and objectified as such and such, and a "remainder" of the world as eluding any kind of detection and objectification, yet leaving a "shadowy" non-eliminable presence[12]. This enigmatic state-of-affairs has led d'Espagnat to talk about a reality per se that can be described only as a nonlocal independent reality (in his terminology) in contradistinction to what is experienced by a community of essentially local observers termed as empirical reality (d'Espagnat, 2003, 183). More concretely, in the view of d'Espagnat, these fundamental features may be thought of as motivating two senses of reality, namely "the 'reality of the wave function of the universe and its representative point' which may be identified with the 'independent reality' concept", a reality that cannot even be conceived as embedded in space and time, and the reality of measurement or generally observation systems, "which is the part of the independent reality that is accessible to us because we are constituted this way" (d'Espagnat, 2003, 283). This latter reality is identifiable with what d'Espagnat has termed empirical reality, essentially that part of "veiled" reality that is accessible to us according to the special constitutive, intentional architecture we have as embodied ego-consciousness vis-à-vis the world.

In a parallel, yet somehow inverse sense, Kerzberg mirroring Hermann Weyl's epistemological views, refers in (Kerszberg, 2007) to an existing non-representable remainder of the world vis-à-vis the subject's transcendental experience in these terms:

> Inasmuch as the process thanks to which reality becomes manifest is representable, it bumps into irreducibly individual facts of subjective life, and therefore it does not lend itself to mathematical construction. Inasmuch as this process is not representable, mathematical construction applies to it, but then reality becomes manifest as symbols (Kerszberg, 2007, 193).

This means (if properly interpreted) in Kerszberg's sense that, on the one hand, we have the immediate absolute transcendental experience which is irreducible in objective terms and, on the other, the natural world as reducible, that is, as intelligible via certain abstract tools, e. g., logical-mathematical, where things gain their definiteness and the subject "secularizes" its transcendental experience. My own position, though, is that there is an irreducibility of the world that lies beyond the transcendental ex-

[12] For example in Longo's view, Weyl's symmetries are essentially regularities of the world that pre-exist or that reality imposes on us, that we see or decide to see and "then transform them into concepts and choose to pose them as organising criteria of reality, even in microphysics, far removed from sensorial space" (Longo, 2007, 224–225).

perience proper and of course beyond the commonly characterized as objective one. This is what I will continue to argue for in the next.

To start with, a major issue in the debate touching on the positions of scientific realism in physics is the question of the ontological foundation of the physicists' existence claims concerning such objects of microphysics as electrons, muons, gluons, etc., and further of quantum fields. Are they the kind of tiny pictorial objects found, e. g., in quantum physics textbooks implying an objective spatiotemporal existence independently of any subjective "observation"? Such view, just as the Rutherford "planetary" representation of atoms and just as the common vector representation of forces in elementary physics, would be far too naive. Rather one would be more realistic in thinking that underpinning these objects of physics are the concepts that are more suited to unify, codify, and understand the signals the physical world sends us by means of measurement instruments which are themselves the result of a theory, in the sense of a micro-scale theory with regard to the sought after result. Reality in a "raw" sense is there and calibrates our thought in generating a kind of ontology and properties of physical objects, and even of the mathematical objects that represent them, in the "friction" it produces through the theoretical-experimental framework at hand, our own perceptual and constitutive capacities (I include our transcendental intentional-constitutive ones) and our historical-evolutionary imprint. Reality in this sense is "oversized" with respect to the transcendental-objectifying capacities of the transcendental subjects so as to be forced to talk about physical properties of matter independently of our choice just as we can talk about properties of mathematical objects in Gödel's sense as objective and independent of our choice and moreover as not reducible in purely physicalistic or generally sensuous terms[13]. In Longo's a bit overstated view "physical bodies, and constituent properties of matter, as well as mathematical concepts are all preconstituted entities, possibly the ultimate building blocks, independent of or transcending the cognitive subject (not 'created')". Just as geometry is "the result of a non-arbitrary process, which grounds our constitutive hypotheses within certain regularities of the world, regularities, 'donations' which impose themselves upon us; these regularities are themselves 'already there' (the connectivity of space, isotropy, symmetries — inspiring ourselves by Riemann and Weyl). But it is us who choose to see them" (Longo, 2007, 207–208).

It is known that Weyl had tried to provide a geometry of all possible spacetime manifolds, a kind of "world geometry" for which the actual physical world would be made a special case. In this undertaking the metrical essence of space is conceived pure-

[13] See Gödel's *What is Cantor's Continuum Problem?* (Feferman, 1990, 268).

ly infinitesimally (thus preserving the identity of objects) in an effort to see whether this world geometry could be regarded as an acquisition of the transcendental self-constitution of the ego (Weyl, 1949, 135). This could be plausible to the extent that infinitesimal variations in physical as well as mathematical processes seem to belong to the transcendental sphere as lying beyond the range of common objective perception. Weyl restricted the homogeneous space of phenomenological intuition, the locus of phenomenological *Evidenz*, to what is "within the range" of the ego-center (*Ich Zentrum*) so that "the coincidences, the relations of the space of [phenomenological] intuition to that of physics, becomes vaguer the further one distances oneself from the ego-center" (Ryckman, 2005, 148). Of course if this could be the case the world geometry would somehow validate the concept of the world horizon in the phenomenological sense of *Crisis*. As a matter of fact Weyl's project had not the expected success and concerning his so-called world geometry what he had actually done could still be interpreted as simply the characterization of another family of geometries. In any case it is important to keep in mind that Weyl argued, on the assumption that all inquiry about the world is to be focused in the tension between subject and object, that "there can be no release of this tension in favor of the allegedly exclusive constitutive capacities of the absolute subject" (Kerszberg, 2007, 181). In other words, the scope of the transcendental consciousness of the subject falls short of "covering" the breadth of being-in-the-world so long as there is a world at large in the presence of at least one embodied transcendental consciousness.

One of the persisting enigmas of quantum theory is whether the wave function collapse induced by a measurement may entail some kind of non-locality since, according to standard theory, a measurement or generally "observation" performed on one part of an extended quantum system may influence a possibly far away mutual system. The rules conditioning the measurement process are rules written in the mathematical language to accommodate observable states-of-affairs yet having nothing to tell, for the rest, on the ontology of the wave function or the state vector in the state of collapse. Since the violation of local causality is usually referred to non-separability or non-locality, the inclination toward non-separability virtually amounts to indivisibility by thought (d'Espagnat, 2003, 128–129). It follows that indivisibility by thought would by its very nature deny the possibility of classical physics to represent the values of physical quantities implied in empirically based equations at any space-time point, e. g., the values of velocities, current densities, electric or magnetic field strengths, etc., thus making impossible to calculate everything including the correlations between all the different parts of a system in terms of point functions. In a certain sense this means the violation of the long cherished principle of deterministic thought, the principle of local causality.

On a subjectively founded level, indivisibility by thought may be taken to involve the constitutive mental processes of an embodied consciousness toward the world. A revisiting of quantum mechanical concepts as shaped by the means and modes of observation with a willingness to inquire into the role human consciousness may play possibly in non-physically reductionistic terms are Bitbol's and French's works respectively in (Bitbol, 2021) and (French, 2023). Bitbol, in particular, claims that it is quantum physics itself that imposes to perform the transcendental reduction even though, I think, he is not fully aware of the "metaphysical" pitfalls radical transcendental reduction may reserve. Nevertheless he claims emphatically:

> Nothing less than the most extreme transcendental reduction to the living present can maintain a full conceptual coherence within the quantum paradigm. I then concur with QBists when they suggest that Bohr's life-world reduction [not to be identified with Husserl's conception of the life-world] is not sufficient to make full sense of the quantum paradigm (Bitbol, 2021, 580).

Another major epistemological issue of quantum mechanics with ontological side effects is the debate over the reality of the wavefunctions. There is a view that the wave function assigned to a physical system may represent not the ontic state of the system, but merely a state of incomplete knowledge (an epistemic state) about the ontic state of the system. Given that the ψ-ontic view suggests a belief in an ontologically grounded reality of the wave function, the ψ-epistemic view seems to be more suited to a rational explanation of the wave function collapse to the extent that it can be readily explained as the effect of acquiring new information on the wave function as an epistemic object, "no more mysterious than the updating of a classical probability distribution when new data are obtained". It happens that there are heuristic or other stronger arguments against both the "realist" ψ-ontic view and the epistemically underpinned ψ-epistemic view. For example, even if we deny the reality of the wave function and the wave-function collapse, the ψ-epistemic view needs to explain why the underlying ontic state is changed during the measurement process (Gao, 2017, 11–21)[14].

It is notable, if we concur to the ontic option, that even a supposedly definite wave state independently of an act of measurement may still not entail a definite location or momentum by Heisenberg uncertainty principle, therefore one falls short of a notion of locality properly meant. This means that locality in the quantum context

[14] The latter issue, i. e. the change of the ontic state of a wave function or generally of a quantum object in the process of measurement is of a major epistemological and further ontological importance. See, e. g., (Livadas, 2011, 164).

is devoid of the sense attributed in classical physics, in fact it may cede its ontological self-standing via the measuring apparatus to the participation of a constitutive consciousness whose sense of locality should not be again that of classical physics for then one would seek in regression a new constituting subjective factor not constrained with the classical sense locality[15].

As a matter of fact the issue of locality or better the issue of non-locality regarded as a point of vulnerability of quantum theories, in particular of the so-called strongly objective ones such as the pilot wave or Bohmian type theories, leads to an issue of broader significance that might have shaped d'Espagnat's view regarding the two senses of reality. The reality of the wave function of the universe and its representative point which may be identified with the independent reality concept and the reality of the measurement or generally observation systems, which is that part of the independent reality that is accessible to us because we are constituted this way, of course not in naive materialistic terms. This can naturally lead to an extra-theoretical level of discourse in which one might possibly ask about the terms in which we may deal with reality as accessible to us.

For if we interact with empirical reality in the same locally founded, materialistic terms that make this very reality accessible to us, who would be able then in the same terms to talk about a different level "independent reality" inaccessible and yet non-eliminable in relation to us? For, if indeed the conventional quantum or the Bohmian/Bell and *a fortiori* the quantum gravity contexts demonstrate a de facto residuum in the process of "observation", then the only reasonable conclusion will be that either there is "something" in our constitutive mental faculties impossible to objectify in spatiotemporal-causal terms or there is "something" in the reality-of-the-world itself that eludes us as a matter of fact and yet in non-contingent terms. The latter suggestion clearly implies that this state-of-affairs is not a matter of present or future technological prowess. D'Espagnat has held the view that such features of standard, weakly objective quantum theory as non-separability and non-locality as well as the ways strongly objective quantum theories fail to reconcile inhering contradictions due to their non-locality, strongly suggest that independent reality may not be embedded in "spacetime and/or cosmic time", in conceding at the same time that neither special nor general relativity can answer the question of whether independent reality might lie in some relativity hinged distorted spacetime (D'Espagnat, 2003, 322).

[15] A transcendental phenomenology "friendly" interpretation of quantum mechanics, termed QBism (abbreviation of Quantum Bayesianism) denies quantum non-locality altogether claiming that there are only non-local quantum interpretations. See, e. g., (Bitbol, 2021).

On such grounds, if we conceive of independent reality as a highly entangled wholeness it would be hardly possible to localize and consequently temporalize the objects within this entangled whole except by assuming the human factor with special constitutive-objectifying mental faculties. Yet in that case this kind of consciousness would only account for the reality as appearing such and such "in-person" in front of it and not the reality as "authentically" itself, i. e. it would account for the *Sosein* and not the *Sein* of the world. Of course, there is a question arisen here, namely the ontological terms in which would be accounted for a consciousness as a transcendental time-constituting factor and "generator" of a localized sense of objects out of a pre-existing whole (i. e. the independent reality), in which everything associated with a well-meant sense of reality would be meaningless. Some interpretations have been given more or less oriented to the epistemological-objective side of the question into whose details it would be rather consuming to enter in view of my general orientation.

In case we are ready to accept that there is a level of reality that is beyond our capacity, as beings-in-the-world, to embed it into space and time it follows that it must be devoid of any sense of local causality as applied to phenomena-in-the-world. It is easy to see that this would be a kind of independent reality in d'Espagnat's sense in (D'Espagnat, 2003), which cannot be conceived of as made up of localized elements embedded in space-time and whose causality would widely differ from both Kantian and Einsteinian causality. And lest the Kantian principle of limiting causes to the realm of phenomena may force its validity in the realm of independent reality and generate therefore an infinite regression of causes, d'Espagnat claims almost by decree that:

> The general structures of independent reality, which, we claim, are the causes of the observed objective regularities, do not themselves require causes (D'Espagnat, 2003, 414, 417–418).

Yet if we accept that there is, by linguistic convention, "something" in the reality that transcends our constitutive mental capacities in the sense that finds itself in the "residuum" of the process of objectification by means of a transcendental consciousness, it might still be possible to find its imprint and have a partial knowledge of it as merely general or allegorical. Non-separability or entanglement states can be considered such "shadowy" aspects of independent reality leaving some room to theoretical valuation while being all the same irrelevant with empirical reality as commonly meant. The elusive "residuum" in the observation, considered in the most broad sense, might then be thought of as not being in space and time (at least the way we apprehend space-time as living experience), a clear indication being a sense of non-locality involved in every formulation of quantum mechanics and *a fortiori* in its strongly objective or ontologically

interpretable versions. The same "residuum" in the observation may be also thought of as precluding any notion of plurality referring to distinct objects "within the residuum" and consequently as precluding any notion of "relation to" materialized as relationship between distinct objects, these being already regarded by Husserl in *Crisis* as ideal approximations in the quantum level (Husserl, 1976b, 389).

In view of the argumentation so far, including the argumentation of the primarily philosophical part of the paper, it seems that in ontological terms we are fundamentally faced with two options. Either there is something "unworldly" out there in that aspect of physical reality that has been termed independent reality which is de facto and yet non-contingently veiled from human accessibility, in the sense of what Bitbol allegorically described as the blinding proximity of the real (*l'aveuglante proximité du réel*), or there is something "unworldly" within human constitutive mental capacities, i. e., in the "essence" of the Husserlian absolute ego. In either case an absolute ontology of the world seems beyond human reach insofar as the world is posed as such in relation to human beings in virtue of embodied consciousnesses in the modes these latter can be non-reducible to purely physical-materialistic terms and further self-constituting and consequently self-referent. To put it in other terms, to the extent that there is, as a lingering shadow, a residuum of the world as non-representable on account of the special human presence in-the-world, humans will navigate forever in the realm of cosmic infinity with no bounds to overcome but their own inner "opacity" which is also their own inner non-eliminability.

At the same time insofar as the scope of transcendental consciousness may not be identical with the scope of the world in absolute ontological terms, there will still be a remainder of the world after the abolition of every possible transcendental consciousness in the world. Or to put it in reverse order there will be no absolute consciousness left over after the annihilation of the world, even if by this aphorism Husserl rather meant that the validity of the world is inalienably reducible to the "being" and modes of absolute (transcendental) consciousness. It seems that the presumed remainder in excess of the world at large, with regard to the human consciousness as transcendental, restricts the bounds of the field of validity of the latter as a matter of fact.

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