



Existence Is Not Relativistically Invariant—Part 1: Meta-ontology

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Received: 23 May 2023 / Accepted: 29 January 2024
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Abstract

Metaphysicians who are aware of modern physics usually follow Putnam (1967) in arguing that Special Theory of Relativity is incompatible with the view that what exists is only what exists *now* or *presently*. Partisans of presentism (the motto ‘only present things exist’) had very difficult times since, and no presentist theory of time seems to have been able to satisfactorily counter the objection raised from Special Relativity. One of the strategies offered to the presentist consists in *relativizing* existence to inertial frames. This unfashionable strategy has been accused of counterfeiting, since the meaning of the concept of existence would be incompatible with its relativization. Therefore, existence could only be relativistically invariant. In this paper, I shall examine whether such an accusation hits its target, and I will do this by examining whether the different criteria of existence that have been suggested by the Philosophical Tradition from Plato onwards imply that existence cannot be relativized.

1 Non-transitivity of Simultaneity, Sometime-Existence and Existence-Now

Metaphysicians who are aware of modern physics usually follow Putnam (1967) in arguing that Special Theory of Relativity (SR henceforth) is incompatible with the view that what exists is only what exists *now* or *presently*. Partisans of presentism (the motto ‘only present things exist’) had very difficult times since, and no presentist theory of time seems to have been able to satisfactorily counter the objection raised from Special Relativity.

‘Part. 2: Philosophy of Science’ shall be a companion paper written with Kévin Chalas (Institut Supérieur de Philosophie/CEFISES, Université catholique de Louvain) whom I would like to thank for helpful discussions.

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The argument from Putnam (1967) is as follows: the non-transitivity of simultaneity (viz. the relation of *being present relative to*) in SR (i.e. an item x can be simultaneous to y , and y simultaneous to z , without x being simultaneous to z , that is, for any x and any y , the claim ‘ x and y are simultaneous’ is not true in all inertial frames, its truth is frame-relative) entails that what exists at one spot of the space-time exists *simpliciter* (that is, it exists tenselessly or eternally), therefore, from our point of view (our *here-now* spot), all past and future items and events still or yet exist. Logically, Putnam’s *reductio ad absurdum* is as follows (see Thyssen, 2020, pp. 24–26 for an efficient presentation), given the assumption that x and y co-exist iff they are co-present:

- 1 From the inertial frame \mathcal{O}_x of which x is the origin (viz. x is the ‘*here-now*’ of \mathcal{O}_x), x is simultaneous to y
- 2 From the inertial frame \mathcal{O}_y of which y is the origin, y is simultaneous to z
- 3 If, from the inertial frame \mathcal{O}_x , x is simultaneous to y , then y presently exists-for (or is real for) \mathcal{O}_x
- 4 If, from the inertial frame \mathcal{O}_y , y is simultaneous to z , then z presently exists-for \mathcal{O}_y
- 5 If, both y presently exists-for \mathcal{O}_x and z presently exists-for \mathcal{O}_y , then z presently exists-for \mathcal{O}_x (*transitivity of the relation ‘presently exist-for’*)
- 6 But if, from the inertial frame \mathcal{O}_x , x is not simultaneous to z , then z does not presently exist-for \mathcal{O}_x

III. Both z presently exists-for (from 5) and z does not presently exist-for \mathcal{O}_x (from 6) = *absurdity*¹

Putnam argues that such an absurdity forces us to abandon the premiss 6, so that all past and future events are as real or existent as the present events (and this, whatever is the selected inertial frame). As a punk, Putnam and his followers say that, first, no future is open, and, second, dead peoples presently exist with us. No escape, but try spiritualism. Thus, ‘presently existence for’ amount to ‘sometime-existence’: for all x , if there is a spot in which x is existent, then x exists *simpliciter*; or if x sometimes exists, then x eternally or sempiternally exists (it fully exists in all inertial frames).

¹ That is, when S and R are the relations of simultaneity and reality-existence (Thyssen 2020, p. 26):

1	Sxy
2	Syz
3	Sxy \rightarrow Rxy
4	Syz \rightarrow Ryz
5	Rxy Ryz \rightarrow Rxz
6	\neg Sxz \rightarrow \neg Rxz
C	Rxz \neg Rxz

Two hypotheses ground Putnam's reasoning:

- **There Are No Privileged Observers:** the relation of 'presently exist-for' or 'is real for' (viz. the 'relation of simultaneity-in-the-*observer's*-coordinate-system', see Putnam, 1967, p. 242) is taken to be transitive, i.e. if x presently exists for y and if y presently exists for z , then x presently exists for z . (Putnam, 1967, p. 241, the premiss 5 in the argument above)
- The relation of 'presently exist-for' is restricted to physical relations that are assumed to be independent of the choice of a coordinate system (or inertial frame).

The first assumption called 'There Are No Privileged Observers' (the premiss 5) carries the burden of the proof (for a detailed overview of all the objections that have been made to Putnam's argument, see Thyssen, 2020, pp. 17–70 – as Thyssen, 2020, p. 70 points out at the end of the overview: 'the soundness of the argument hinges, above all, on our interpretation of reality, and in particular on the alleged transitivity of the reality relation <presently exist-for> and its intimate link with the simultaneity of events').

Usually, presentist fools hopelessly try to accommodate SR and the idea that only items that presently exist are truly existent *without rejecting* 'There Are No Privileged Observers' (see Hinchliff, 2000 for a short overview of their tentative: point presentism, cone presentism, surface presentism, etc., and the replacement of the Minkowski spacetime interpretation of SR by a neo-Lorentzian dynamical one). For various reasons, they all fail. Thus, eternalism must be true.

But there remains a viable but unfashionable option: the relativistic one according to which some items can exist in some frameworks (inertial frames) but do not exist in others. This is the view that abandons the first assumption of Putnam's argument called 'There Are No Privileged Observers' and, therefore, claims the non-transitivity of existence-claims (so, if x exists for y and if y exists for z , then either x exists for z or x does not exist for z). In other words, the position that existence is not relativistically invariant (r-invariant thereafter) but frame-sensitive.² Existence is existence-now (instead of sometime-existence as it is the case in non-presentist metaphysics), nothing more, and insofar as there is not any absolute now according to SR (whether the *now* in SR is understood as a spacetime point, a cone, a piece of the proper time of a given worldline or as something else), there is not absolute existence regardless to any relativistic frame. In brief, removing 'There Are No Privileged Observers' from the metaphysical picture amounts to saying that the non-transitivity of simultaneity in SR entails the non-transitivity of existence-claims, that the relativization of the present implies the relativization of existence: if time is local, so is existence.

² Best supporter: Routley (1980, pp. 389–390, 397–400; 1997, pp. 315–316). The rejection of 'There Are No Privileged Observers' is also briefly and positively discussed in Sklar (1974, pp. 272–275); Hinchliff (1996, pp. 129–132 and 2000, pp. S578–S579)—see also Dainton (2010, pp. 331–332) and Thyssen (2020, pp. 52–54)

Such an idea is sometimes appraised as foolish, for instance in Gödel (1949, p. 203 n.5)³:

The concept of existence, however, cannot be relativized without destroying its meaning completely.

Indeed, very often, philosophers consider that existence (or cognate concepts as reality, subsistence, objectivity, factuality, actuality, etc.) implies invariance (for instance Nozick, 2001, pp. 75–119 pleads for the equivalence between invariance and objectivity): absoluteness (and, therefore, r-invariance) is taken to be a necessary requirement for existing.

I disagree. Of course, there are some oddities if r-invariance is dropped out. For instance, some far-off items may be existent for you now, but will become non-existent once you decide to leave the room. But, in fact, it is already the case in classical mechanics, and this without complaint: if existence is relative to time, it is expected that the domain of existent items varies depending on the time. SR only adds to the classical picture that such a variation in the ontological population is of a larger scale, i.e. it depends on time and spatial motion, than non-relativistic physics has taught us.

There are many theories already in the philosophical market compatible with the rejection of r-invariant existence, from Meinongian Presentism (the claim that existence is existence-now, and that there are some objects that do not exist, especially the past and future ones)⁴ to other less discussed views. Indeed, strictly speaking, Meinongianism is not the sole view compatible with the claim that existence is not r-invariant. Non-standard realism (in its external-relativist version that gives up absolutism) from Fine (2005a) is another position according to which existence is not r-invariant (see Fine, 2005a, pp. 298–307 on non-standard realism and SR).⁵ Sellars (1962) forms another idiosyncratic and arcane view close to Fine's non-standard realism that involves the relativization or plural(l)ization of existence (for Sellars, the 'perspectival' frames are ontologically prior to the Minkowski observer-independent spacetime manifold which is a mere *abstraction* from the infinity of the now-perspectives of individual observers).

In fact, the dismissing of invariance (and r-invariance) understood in the orthodox monistic way allows two kinds of philosophical moves: first relativization (in order to support external relativism), second pluralization (in order to support Fragmentalism or Pluralism). The first consists in relativizing existence to some point of view ('x exists' needs to be replaced by 'x exists from the standpoint of y' or 'x exists relatively to y'); the second in dropping out the idea that the realm of existence is all of

³ Other more recent quotations of such an appraisal can be found in Godfrey Smith *apud* Routley (1980, p. 398); Dorato (2008, p. 60) and Callender (2017, p. 54).

⁴ See the Noneism of Routley (1980, pp. 361–409, 707–708 n.2) and the 'unrestricted presentism' of Hinchliff (1988), i.e. the 'relativized presentism' of Hinchliff (1996, pp. 130–131; 2000, p. S578).

⁵ Fine (2009) prefers to use the word '*reality*' rather than 'existence': roughly, while existence logically corresponds to the 'thin' and ontologically unloaded sense of the quantified expression 'there is' (Fine does so to keep the orthodox and Quinean terminological usage), reality corresponds to its 'thick' and ontologically loaded meaning.

a piece, such that there are in fact *many* isolated realms of existence. Both directions were taken by Richard Routley/Sylvan and then, albeit differently, by Kit Fine.

Put into the SR background, the two successive positions of Routley and the two non-standard realisms distinguished in Fine (2005a) can be paired.⁶ The Meinongian Presentism from Routley (1980, pp. 361–409, 707–708 n.2) (alike to the ‘Unrestricted Presentism’ of Hinchliff, 1988) is *mutatis mutandis* similar to the External Relativism from Fine (2005a) (i.e. existence/reality is not r-invariant, and each inertial frame of SR is the sole existent/real from its own point of view, the others being existent/real from their own points of view but non-existent/irreal from all foreign points of view), and the plurallism of Routley (1997)⁷ is similar (but not identical, the ‘fragments of reality’ of Fine being the quasi-equivalents of the ‘actual worlds’ of Routley, and the ‘über-reality’ of Fine, 2005a being inversely alike to the ‘Wholle’ of Routley, 1997) to the Fragmentalism from Fine (2005a) and Iaquinto and Torrenco (2022) (there is a plurality of realities/realms of existence, one for each inertial frame: existence/reality is not relativized but pluralized).⁸ As it is very often the case, Fine’s theoretical segmentations are both luminous, well-argued, and desperately idiosyncratic. By ‘realism’ in the context of SR, Fine (2005a) argues for the (Priorian) idea that there are irreducible or primitive *tensed* facts which are the metaphysical companions of physical, psychological, modal and egocentric facts; and everything that is real/existent is derivative of the sum of all facts (in this aspect, Fine is a reader of Wittgenstein’s *Tractatus Logico-Philosophicus*, §1.1: ‘the world is the totality of facts, not of things’, see Fine, 2005a, p. 271, 2005b, p. 325, 343). The argument of Fine (2005a) is schematically that if there were *tensed* facts and SR is true, then, first, Standard Monist Realism (the view that there is only one reality and existence is r-invariant) would be in great trouble; and, second, if Standard Monist Realism were to be abandoned, then either existence would be relativized (External Relativism), or there would be many realities (Fragmentalism).

In this paper, I shall not discuss the pluralization of existence in great details, but will confine my remarks to its relativization, notably because ‘There Are No Privileged Observers’ deals mainly with the question of the relativization of existence, not directly with the idea of its pluralization. Nor will my aim be to defend and elaborate a sophisticated metaphysical theory in which existence is not r-invariant, but rather to scrutinize the <conceptual> relation between existence and r-invariance. In doing so, my task will belong to meta-ontology rather than philosophy of science. By ‘meta-ontology’ (on which, see van Inwagen, 1998 and Berto &

⁶ It is no surprising at all, Kit Fine is a ‘crypto-Meinongian’, sometimes he defends some version of Meinongianism (see Fine 1984, esp. p. 96 and, even if it is less obvious, Fine 2005b), sometimes he explicitly distances himself from Meinongianism (Fine 2009, p. 172).

⁷ On Routley’s Plurallism and SR, see Routley (1997, pp. 315–316).

⁸ It should be remarked that Fine (2005a, p. 283 n.5) argues for the fact that the plurality of *possible* worlds of Lewis (1986) is not *semantically* analogous to the pluralistic reality defended in Fine (2005a), that is, Fragmentalism is formally not alike to Modal Realism (for instance, Modal Fragmentalism does not involve a counterpart semantics as Modal Realism). Routley (1997, p. 24) too distances himself from Lewis’ pluralism.

Plebani, 2015, esp. pp. 2–3), I understand something alike to Heidegger’s extra-ontic (so, genuinely ontological) question ‘what is the meaning of existence?’ (recall that the word ‘*metontologie*’ was coined by Heidegger, 1928, pp. 196–202), that is, an old and venerable question that can be traced back, at least, from Aristotle’s *Metaphysics*, Γ.1–2.

In a way, one of my aims is to offer some insights about the question of the *form* of realism, that is, to make the dispute about reality and existence less *ideological* and more *doctrinal* (in the sense of Fine, 2005a, p. 320). By reviewing the different meanings that ‘existence’ can have, I expect to provide a common understanding of what is in question when someone asks ‘does X exist or not?’. Consequently, this paper might be appraised as a postscript to Fine (2005a, pp. 318–320), i.e. an attempt to render intelligible the discussion about existence for all disputers whatever is the view they support (for a debatable issue about X, they can argue either for the non-existence of X, that is, for its reducibility, or for its absolute existence, for its relative existence, or for its scattered existence).

A word on the customary a priori rejection of Meinongianism. Shamedly, Meinongianist Presentism is disdainfully dismissed by almost all metaphysicians. Le Bihan (2018, p. 9 n.11) for instance rejects the Meinongian stance with the back of his hand on the ground that meinongianism is counter-intuitive and contrary to commonsense. Ok. Alas, adequation with commonsense is precisely one of the first motives for neo-Meinongianism according to its supporters. *Draw.* A flagrant *non sequitur*. Others wrongly believe that neo-Meinongianism involves an exuberant ontological inflation (on exuberance and extravagance in ontology, see Varzi, 2005, pp. 114–116), but it is quite the reverse: usually, neo-Meinongian metaphysicians defend that only concrete and spatio-temporal items truly exist, while the others (abstract items, fictional inventions, *possibilia*, mere theoretical stuffs, and so on) do not. Meinongianism is nothing but a drastic ontological diet.

2 The Meanings of Existence and r-Invariance

The supporters of Putnam’s argument almost always take the predicates *being existent* and *being real* as primitives or fundamental properties, and offer neither any criterion nor definition of such a heavily loaded ‘term of art’ (see Smart, 1979, p. 9 *apud* Routley, 1980, p. 397 for instance).⁹ Instead of examining what is existence, they speak about it (to state its r-invariance for instance), without any justification apart invoking some so-called ‘intuitive grasp’ of its meaning. On the contrary, to counter-object to their insincere denigrators, Meinongian zealots carefully expound what they mean when they attribute the property of existence to an object (it can be noted however that some opponents to r-invariant existence, as Fine, 2009 for example, take existence or reality as fundamental).

⁹ On this point, they follow Descartes (amongst others) who had always refused to provide a definition for existence, see AT IX-2 28–29 and Bardout (2013, p. 417).

‘Existence’ (as cognate words like ‘reality’¹⁰) has many meanings. More importantly, old and recent philosophers never agree on the question of its right or ‘true’ meaning. To the reader, Bardout (2013) offers a very useful historical study on the concept of *existence* in which it is scholarly argued that existence was not a well-formed concept in the philosophical landscape before Marius Victorinus (Bardout, 2013, pp. 50–64 does claim that there were some ‘weak’ existential concepts in Greek Philosophy like ὑπαρξις, ὑπόστασις, ἔκστασις, ἐντελέχεια, etc., but none of them are completely alike to the Latin concept of *existentia* to which Bardout reduces the ‘strong’ concept of existence). I believe that such a claim is mistaken, because, as I will show, the scholastic *existentia* is in fact only one philosophical understanding of existence amongst many others.

For my purpose, Routley (1980, pp. 697–768) (with some adjunctions and few omissions; for the record, at the end of his investigation, Routley, 1980, pp. 730–732 vindicates a multi-criteria account of existence that is taken to be the convergence of some variants of B1, B3 α and B3 β and applies an egocentric paradigm strategy (these acronyms and conceptual moves will be quickly explained below)—at the end of my enquiry, I confess that I remain sceptical although I tend to favour A1 despite the fact that such a criterion is *in fine* poorly explanatory and quite uninformative) is highly convenient for it summarizes the various philosophical readings of such a high-valued philosophem. Here, an overview of the demarcation criteria that philosophers had or have in mind while they use the word ‘existence’ to separate what exists from what does not. All these criteria are not exclusive, quite the contrary, some are held to be equivalent by some philosophers, others imply each other, etc. In particular, none of these criteria has any pretention to be a *definition* of existence (existence seems one of our concepts that resists definitional explanation; for this reason, some philosophers as Williams (1962), following some ideas from Hume, *THN*, I.2 s.6, have forcefully argued for the elimination of ‘existence’ in philosophical discourses, that is, for exiling the concept of existence out of the Philosophical Lexicon).

I will also give up the idea that ‘existence’ is not univocal (so, I will follow Routley, 1980, pp. 700–701 again), i.e. the thesis that there are irreducible ways, modes or kinds of existence (the many-kinds-of-existence accounts according to which the very meaning of ‘existence’ pluralizes, e.g. I *concretely* exists, universals *abstractly* exist, Sherlock Homes *fictionally* exists, the number 42 *arithmetically* exists, and so on, see McDaniel, 2017 for a defence of ontological pluralism). I assume, *contra* McDaniel (2017) and other kinds of ontological pluralism (Aristotle’s focalism of *Metaphysics* Γ .2, Aquinas’ analogism, etc.), that if some items possess distinctive ways of being existent, they must share some basic feature; however, and, surely, such a basic ontological feature would be the basic meaning of ‘existence’ (existence *simpliciter* as opposed to Heideggerian-style-ways of *being* like *being concrete* or *being ready-to-hand*) of which the more distinctive features are further

¹⁰ See Chalmers (2022, pp. 108–115, 480–481) for a listing of *reality*-criteria very similar to Routley’s listing of *existence*-criteria and mine: causal power, mind-independence, non-illusoriness, genuineness, observability, measurability, theoretical utility, actuality, truth, factuality, objectivity, evidence-independence, originality, fundamentality, etc. On the meaning of ‘reality’ from a philosophical-linguistic standpoint, see also Reynolds (2006).

specifications (so, on the logical question of whether the unrestricted or disjunctive quantifier is more fundamental or whether it is the restricted quantifiers, I play van Inwagen, 1998 against McDaniel, 2017).

Finally, I shall omit logical criteria that are trivially correct like ‘to exist is to be the value of an ontologically loaded bound variable’ or ‘what exists is everything that inhabits the ontological domain of quantification’ (quantificational criteria), ‘to exist is to have the property that all and only existent items have’ (λ -abstraction criterion), etc., since existence is not primarily a matter of logic¹¹ (the question of whether existence is a quantifier or a predicate needs not a careful investigation since an existential predicate $E!$ can be routinely defined by means of the existentially loaded quantifier, identity and λ -abstraction as follows: given $E!x =_{df.} \exists y(x=y)$, the first-order predicate $E!$ denotes the abstract property $\lambda x.\exists y(x=y)$, viz. the property of being an x such that x is identical with something, see Berto, 2013, pp. 37–38). Nor existence is a matter of linguistic everyday use.

As promised, here is the overview.

A. Holistic criteria

- A1. Modal criteria
- A2. Factuality criteria
- A3. Truth criteria
- A4. Concretion criteria
- A5. Location criteria

B. Distinctive criteria

- B1. Spatio-temporal criteria
- B2. Non-spatio-temporal criteria

B2 α . Relational criteria

- B2 α 1. Causal and relational criteria
- B2 α 2. Grounding criteria
- B2 α 3. Intensional relational criteria (perceptivity, empiricallity, etc.)

B3. Completeness and determinacy criteria

- B3 α . Full determinacy criteria
- B3 β . Qualified determinacy criteria

¹¹ On this point, see Routley (1980, p. 702) and Berto (2013, p. 63).

I shall examine each of these criteria in turn to state if at least one of them implies r-invariance. Three requisites need to be met by any plausible criterion (see Routley, 1980, pp. 701–702): first, the criterion should not entail that nothing at all exist (rejection of nihilism, an obvious matter since, while I am writing this essay, I exist, and I do so even in the idiosyncratic sense of Heidegger, 1927), second, the criterion should not entail that everything, regardless of its properties, exists (of course, ontological hospitality is not a drawback in itself, but it amounts to the claim that existence is a non-informative or trivial datum, so some items must fail to satisfy the ontological criterion for the synthetic¹² question ‘does X exist or not?’ is meaningful and of interest—existence is a privilege of few, a fact usually sweeps under the rug by those who reduce existence to some logical apparatus—quantifiability or λ -abstraction), third, the exclusion of *impossibilia* and mere fictional items from the realm of existence (sure, what is an impossible object is itself a vexed question since the supporters of dialetheism support that some contradictory items exist, but nobody believes I guess that Cheshire cats *exist* in the strong sense; the ontology of *ficta*—like Tom Bombadil, Tristram Shandy or Tintin – is also an open question, but everyone agrees that, even if *ficta* truly exist, they don’t have the same ontological status as non-fictional and existent items such as me or you, see Voltolini, 2006 for an opinionated survey).

The basic argument for ‘There Are No Privileged Observers’ is as follows:

- 1 If X is invariant, then X must be r-invariant
- 2 Existence is equivalent to or entails X
- 3 X is invariant
- 4 Existence is invariant
- 5 Therefore, existence must be r-invariant

Thus, it is sufficient for my purpose if, for each criterion, I show that it does not preclude some relativization (so to show that 3 is false for every criterion). But, very often, I will also directly address the question of its r-invariance (the conclusion 5) or use some sceptical tricks borrowed from Aenesidemus and Agrippa. Thus, my argument will be as follows:

- 1 If X is invariant, then X must be r-invariant
- 2 Existence entails either X, or Y, ..., or Z

¹² Kant, AK 3.400: ‘every existential proposition is synthetic’. AK 3.93 includes existence (*Dasein*) and non-existence (*Nichtsein*) amongst the *a priori* categories (under the higher-order category of *modality* that also includes the two pairs <possibility, impossibility> and <necessity, contingency>) of Understanding of which the attribution is synthetic rather than analytic (and so, of which the attribution is not trivial). Kant’s reading of ‘existence’ (which is only a *logical* predicate, it has no *determining* import—such a distinction being very close to the Meinongian dualities <characterizing vs. non-characterizing properties> and <nuclear vs. extranuclear properties>, see Routley 1980, pp. 180–187, 264–268, and is reminiscent of Hume, *THN*, I.2 s.6) is a kind of modal criterion (A1), see AK 2.72–77, 3.400–402. (‘AK’ stands for ‘Akademie-Ausgabe. Kant Gesammelte Schriften herausgegeben von der Königlich Preussischen Akademie der Wissenschaften’)

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- 3 Neither X, nor Y, ..., nor Z is invariant
 - 4 Existence is not invariant
 - 5 Therefore, existence must not be r-invariant

2.1 A. Holistic Criteria (the Various Ways of Understanding the Underdetermined Neo-scholastic *dictum 'existere significat esse/actu in mundo'*¹³)

2.1.1 A1. Modal Criteria

To exist is to be actual, i.e., to be in the actual world (see Whitehead, 1929, p. 18, 75 and Routley, 1980, p. 45). This is a very commonplace belief for existence reduces to actuality in many philosophical provinces, especially because, historically speaking, the meaning of existence (but not necessarily of the Latin word '*existentia*') was glossed by the Thomistic locution '*est simpliciter dictum significat in actu esse*' (*Periherm.* 1.5 n.22—it is obviously a legacy of Aristotle's thought, since for Aristotle the existential use of the verb 'to be' when it occurs without complementation means nothing other than *being actual* or *being in actuality*, see Marion, 2023a, 2023b, pp. 435–721). Another philosophical realm where metaphysicians tend to identify existence and actuality is the Leibnizian-Wolffian tradition (see Wolff, 1730, §174 and Baumgarten, 1757, §§54–55).

Such a proposal tastes a bit question-begging, or, at least, not very informative. The concept of actuality seems as obscure and inscrutable as that of existence (it is the very reason why *existence* and *actuality* are almost always interchanged without any trouble, see, for instance, Lewis, 1986, p. 93 and Williamson, 2013, p. 235). What is the criterion for actuality? Some Leibnizian-Wolffian and Meinongian philosophers have explained actuality by full determination (B3 α criterion), i.e. to be actual is to be fully determinate (see Baumgarten, 1757, §§34–71 and Routley, 1980, pp. 244–248). I shall discuss such a proposal below.

Obviously, the modal criterion involves a crude (but very common) rejection of *possibilia* from the ontological realm, but it is a vexed issue whether mere possible items have a positive ontological status or not (insofar as it is often claimed that, in contrast to *actualia*, mere *possibilia* do not fully exist, or that they have a shadowy ontological status, see the strawman Wyman in Quine, 1948, pp. 2–5 for instance). Often, to accommodate talk about merely possible objects and give them some ontological positivity, non-Meinongian proponents of A1 distinguish between *existence* and *being* (or *subsistence*): *possibilia* are (or subsist) but do not exist, while *actualia* are and exist (Baumgarten, 1757, §§61–63; Russell, 1903, §427 and Wyman in Quine, 1948, p. 3). From a logical point of view, the issue is about the right extension of the ontological domain of quantification: either everything there is exists or is actual and ontologically loaded quantification range over *actualia* only (*actualism*), or there are things that do not exist

¹³ Such a criterion of existence appears in late scholasticism, see Bardout (2013, pp. 430–431).

but could have been actual and quantification range also over non-existent items (*possibilism*).¹⁴

Let's come back to the question whether existence is invariant or not. Actuality was famously once conceived as an *indexical* property depending on the world at which the evaluation is done in the semantics, that is, in a relativist way (the main proponent of such a view is Lewis, 1986, pp. 92–96). Therefore, conceptually (since, I guess, Lewis and his many opponents both *understand* what they mean by 'actuality'¹⁵), it does not seem the case that actuality necessarily implies invariance or forbids any relativization (especially, actuality might be world-relative). Thus, *a fortiori*, the modal criterion does not prevent existence from not being r-invariant. Furthermore, even if actuality is taken to be invariant, perhaps, there could have *many* actual worlds as it is cleverly argued for in Routley (1997). Insofar as pluralization entails some relativization, the thesis that there could have many actual worlds entails that, maybe, 'actually true' is relativized albeit 'being actual' is not (insofar as Routley's plurallism—plurallism is the thesis that there are many actual worlds—forcefully distinguishes 'actually true' or 'true *simpliciter*' from 'locally true' and 'plurallistically true', see Routley, 1997, pp. 182–190).

2.1.2 A2. Factuality Criteria

To exist is to be involved in a fact (existence is derivative of what is factual, factuality implies existence). To be more precise, this is the view that, for any item, an item *x* exists iff there are facts about *x* (Prior, 1957, p. 31, see also Fine, 2005a, pp. 298–299). The position is widely adopted, it is reminiscent of Wittgenstein (*Tractatus Logico-Philosophicus*, §1.1: 'the world is the totality of facts, not of things'),¹⁶ and is especially discussed in Fine (2001) (*contra* Meinongian semantics according to which there are facts about non-existent objects, see Routley, 1980, p. 41, 395¹⁷). One might think that the factuality-criterion reduces to the modal one (A1), because saying that *x* exists iff there are facts about *x* is tantamount to the claim that *x* exists iff *x* is a constituent of some *actual* state of affairs (to borrow the now orthodox Tractarian picture that links together facts and states of affairs). Such a reduction can be defended

¹⁴ See Marion WMJ, pp. 908–910 for a very short presentation of the debate between actualism and possibilism.

¹⁵ Cf. Williamson (2007, pp. 73–133) on the role of common understanding in philosophical debates. Of course, philosophers disagree about almost everything, but, even when they disagree, they share some uncontroversial understanding of the technical words they use (they do not 'change the subject', as Quine 1986, pp. 80–85 says, while they support a heterodox view in a philosophical or logical quarrel).

¹⁶ See also Fine (2005a, p. 271; 2005b, p. 325, 343).

¹⁷ Routley (1980, pp. 204–207) distinguishes between the (actual) *factual* world T and the (actual) *referential* world G, the objectual domain of the second being inhabited only by existent items, while the objectual domain of the first includes both existent and non-existent items. Therefore, insofar as all true sentences in G are pure extensional statements about existing items, a true sentence about things that do not exist like 'the round square is round' is false in G, but true in T: there are *facts* about the round square in T, but not in G.

from a linguistic standpoint: what exists is what is *factual* because what is *counterfactual* does not exist, i.e. the pair <factual, counterfactual> appears equivalent to the pair <actual, merely possible>. But this is not the case, given that a lot of philosophers argue that there are irreducible modal facts in *this* world and, amongst them, possible ones, for instance the fact that it is possible that Pegasus is Arthur's steed.¹⁸ Thus, something can be factual without involving actual objects. If so, the inference from factuality to actuality should be resisted: the fact that it is possible for Pegasus to be Arthur's steed, according to the factuality-criterion, involves that both Pegasus and Arthur exist, but says nothing at all about their modal status. There is no need to explore exotic facts to show that factuality does not entail invariance: some physical facts (for example, about the Galilean relativity of motion) and, obviously, some mental facts are relative. Furthermore, the A-theories of time (Fine, 2005a for instance) include the *tensed* facts (the facts that I am writing, that I ate a mushroom for instance) in the realm of facts and they take them to be primitive. The factuality-criterion does not preclude such an introduction of *tensed* facts which evidently are not r-invariant in SR.

2.1.3 A3. Truth Criteria

To exist is to be involved in a true sentence (existence is derivative of truth, any true discourse about an item implies its existence, we cannot truly talk about what does not exist, see Whitehead & Russell, 1910, p. 190 [*14-21]). Such a criterion reduces to the factuality-one (A2), insofar as a true proposition represents or corresponds to a fact that is the case (an old Russellian idea), and as such is rejected both by Meinongian (that allows true discourse about non-existent items) and antirealist theories (for which there is a huge gap between truth and existence). It faces difficulty with negative true statements as the truth 'no unicorns exist', but it can easily be revised as 'to exist is to be involved in a true positive sentence' or 'to exist is to be positively *referred* in a true sentence', and so on. Sometimes, meaningfulness is favoured rather than truth, and the criterion becomes the more liberal motto 'to exist is to be involved in a meaningful <positive> sentence'. But it is easy to object that some positive true and meaningful sentences, like 'the round square copula on Berkeley College is round', are ontologically puzzling. Indeed, few metaphysicians wish to allow that some contradictory or impossible objects exist (to avoid this, they often forcefully argue for dead-ends: 'the round square copula on Berkeley College is round' either is false (Russell-Quine), has no truth-value (Frege), or is meaningless (Wyman), etc., see Quine, 1948, pp. 4–8). Truth does not yield ontological knowledge (a thesis vindicated both by most of the Medieval philosophers from the fourteenth–fifteenth centuries,¹⁹ Meinongians

¹⁸ See Fine (2003) for an overview, and Fine (2005b) for a discussion about modal facts.

¹⁹ Indeed, the proponents of suppositional logic (e.g. Buridan, Lambert of Auxerre, Marsilius of Inghen, William of Sherwood, Peter of Spain, Albert of Saxony, and Paul of Venice) use a proto-Meinongian device called '*ampliatio*' to select *non-existing* items as referents within true propositions. Translated

and, quite differently, by Azzouni's 'simple' or 'deflationary' nominalism²⁰), given that we can utter some true sentences about what does not exist (the other crazy option offered to the truth-criterion zealot is as follows: all *possibilia* and *impossibilia*—either fictional or not—exist inasmuch as some sentences are true of them, but it is an extremely exuberant and extravagant ontological view).

Sometimes the truth-criterion is restricted as follows: to exist is to be a component of a true theory (in Sellars's Pragmatist language, of a *good* theory; in Quine's idiom, of a conceptual scheme). But a theory has features beyond its ontology, there are mere theoretical items, mathematical stuffs, etc., and often various theories with different quantificational commitments are empirically on equal footing (for instance, in classical mechanics, Hamiltonian and Lagrangian formalisms do not quantify over the same items... worse, classical mechanics and electromagnetism can be formulated in the framework either of fields-ontology, of particles-ontology, or of spacetime-ontology, see Putnam, 1981, p. 73 and Routley, 1997, p. 107). In general, there are several ways of describing the world, all acceptable (they work equally well for picturing the world) and equipped with their own ontological commitments. But, surely, determining *the* ontology of the world is probably not the result of a theory-choice or of a preference in scientific modelling. As it were, ontology would become relative to what is taken to be the true/good theory/conceptual scheme (recall the relativity of ontology argued for by Quine, 1968). Right, everyone is committed to the ontology involved by its web of beliefs, but it is another question to ask whether our ontological commitments represent how the world really is and what is its 'mind-independent' ontology. To defend that existence is theoretically relative is tantamount to swap metaphysical 'standard' monist realism either for some version of antirealism (*à la* Goodman, 1978, internal realism *à la* Putnam, 1981, or else) or for plural(l)ist realism *à la* Routley (1997) (in which the fact that there is no One True Theory for describing the world plays a key role in the defence of the thesis that there is a plurality of *actual* worlds, see Routley, 1997, pp. 61–118). Some realist philosophers who competently use the word 'existence' have no calm with such a move. Furthermore, if to exist is to be referred in true/good theories/conceptual schemes, therefore some views in philosophy of science are no longer intelligible since their partisans in fact do not understand what 'to exist' means (the structuralist realists who believe that a true theory tells us a lot about the *structure* of the world but says

Footnote 19 (continued)

in modern philosophical dialect, ampliation is a contextual extension of the scope of quantifiers beyond what presently and actually exists (the opposite device of *restrictio* being a contextual reduction of their scope). Usually, those who accept ampliative logics (the philosophers mentioned above *contra* Ockham) believe that tense ('was', 'will be'), modal ('can', 'may', 'is possible'), and intentional ('is conceived', 'is imagined', 'is understood') verbs possess an ampliative force that permit to 'quantify' over past, future, merely possible or imaginary items. For the use of ampliation in relation to medieval semantic theories of truth, see the discussion of the nine ways for a proposition to be true in Paul of Venice (1978) *Logica Magna: de veritate et falsitate propositionis*.

²⁰ Azzouni (2004, pp. 15–122; 2010, pp. 45–49; 2017, pp. 30–132, esp. pp. 77–82)

nothing at all about the *entities* that inhabit it, for instance, would use the word ‘existence’ in a wrong way).

2.1.4 A4. Concretion Criteria

To exist is to be concrete. Given that concretion involves spatio-temporal features, this criterion of concreteness reduces either to spatio-temporal (B1) or to causal criteria (B2α1) discussed below. A variant is the most inclusive criterion of existence vindicated by Contingent Non-Concretism (of which the manifesto is Williamson, 2013): to exist is either to be concrete, to be contingently non-concrete, or to be abstract. Of course, such disjunctive criteria can only be *extensionally* correct insofar as they are mere extensional disjunction aiming to encompass all sub-domains of what exists (they are, so to speak, mere listings of the kinds at the top of some Porphyrian Tree, and is no more informative than the rebarbative enumeration of all its branches). In other words, to carry valuable information, the criterion sought must be intensional (and also hyperintensional, since the criterion must provide the answer to the question ‘*in virtue of which* X does the item exist?’).

2.1.5 A5. Location Criteria

To exist is to be located somewhere (for instance, in spacetime location, in mind, in a Platonic Intelligible realm, in a Popperian Third World, etc., see Routley, 1980, pp. 708–709). It is a broader criterion than the strict spatio-temporal or concreteness ones, insofar as the concept of *being located in* is wider than that of *having a spacetime spot* (as Aristotle was aware, see *Physics* IV.3 esp. 210a14–24 and *Metaphysics*, Δ.23, and modern theories of location) and that of *being concrete* (see McDaniel, 2017, pp. 64–67, 143–146 for a discussion on *being-in* and the distinctive way of being for the properties). The idea is that the verb ‘to exist’ is existential-locative in itself. Such a position is ontologically exuberant for every item can be said to be ‘located somewhere’: Tom Bombadil is located in a tiny heavenly region of Middle-Earth (or, in another way, he is located in Tolkien’s fictional universe), the number 42 is located in the equation ‘ $42x + 5 = 7x^3$ ’, the property *being wise* is located in Socrates, the round square copula of Berkeley College is located at Berkeley College (or, in another way, in some geometrical abstract space), etc. Of course, further constraints can be introduced to specify whether a kind of location is existence-entailing or purely metaphorical, but such an input begs the question since they need to appeal to other ontological criteria. For the point of this paper, it is hard to see how such a view cannot be neutral in regard of invariance (particularly when Relativistic Physics is in the background). Anyway, I am unable to see, and therefore I will consider that such a criterion is of no help for our discussion.

2.2 B. Distinctive Criteria (Some Distinctive Features Allow to Discriminate Existing Things from Non-existing Items)

2.2.1 B1. Spatio-temporal Criteria

To exist is to have a space-time location.²¹ The relationalist version of such a criterion is as follows: to exist is to be spatio-temporally related to another item, i.e. to be part of the entire spatio-temporal network of things. But both substantialist and relationist spatio-temporal criteria are blatantly question-begging since, for the first, its temporal aspect amounts to sometime-existence (to exist is to have at least one time location), and, for the second, the spatio-temporal relation is taken to be transitive (since it amounts to ‘be part of the same topological space’ given that all genuine spatio-temporal relations need to assume at least a topological connection between the *relata*). Yet, the question of whether existence is r-invariant or not is evidently deeply related, first, to the question of whether all temporal items, whether past, present or future, exist (presentism vs. eternalism vs. growing-block theory *aka* non-futurism), second, to the question of whether existence is tensed or tenseless (A-theory of time vs. B-theory of time). The spatio-temporal criterion should be revised to become neutral between r-invariance and relativization, that is, between sometime-existence (to exist is to have a spatial location at least at one time, or, in a relationist way, to exist is to be spatially related to another item at least at one time) and existence-now (to exist is to have a spatial location now, or to exist is to be spatially related to present things, i.e. to ‘ostensively-indicatable local entities’ to borrow the expression from Routley, 1980, p. 714). In whatever way this revision is made, unless some derivative or *ad hoc* meaning of *being spatio-temporally located* that abstract items, thoughts, and mere theoretical objects might satisfy is introduced (as some location-theorists do when they suggest that universals are spatio-temporally located in the sum of their instances, or that abstract sets are spatio-temporally located in the collection of their members, or that conventional groupings of individuals are spatio-temporally located where they operate... but all these reductions are merely extensional and, therefore, tell us only a *part* of the story given that universals, properties and *abstracta* are usually conceived as having intensional features like causal role, counterfactual behaviour, etc.), the fact remains that such a criterion excludes *a priori* too much debatable items for which metaphysicians strongly disagree about their existence (abstract and mathematical items, thoughts, theoretical objects, ‘artificial’ objects made by convention like institutional complexes of spatio-temporal individuals – corporations, universities, sport teams, trade unions, ...²² –, etc.).

²¹ See Aristotle, *Physics*, IV.1 208a29-31 for an old testimonia about such an idea: to exist is to be in some physical place. For an early defence of the thesis that existence means nothing but having a spatio-temporal spot, see Crucius (1753, §§46–48) criticized in AK 2.76–77

²² See Routley (1980, pp. 710–712) on the ‘location’ of plural objects made by stipulation.

Furthermore, space-time criteria either are circular (see Routley, 1980, p. 710 for the objection) or appeal to other criteria, since fictional items often have non-existing spatio-temporal locations (Tom Bombadil is spatially located in the vicinity of the Old Forest in Eriador) and geometrical objects occupy positions in some n -dimensional space. To avoid giving the privilege of existence to fictional and mere abstract spaces, the criterion should be amended either by an existential—and so, circular—provision (to exist is to have a location in the *existing/real* space-time), or be supplemented by another criterion. In that case, the modal and concreteness ones (A1, A4) are good intuitive candidates, the second at the further cost of saying that the entire space-time either is located at itself or is nowhere as Aristotle's *Physics*, IV.5 212b7-22 does): to exist is to have an *actual* space-time spot, to have a *concrete* space-time location (in a relationist fashion: to be spatio-temporally related to another *actual* item; to be spatio-temporally related to another *concrete* item). A third solution (labelled the 'paradigm strategy' in Routley, 1980, pp. 697–768, esp. pp. 713–714) consists in *relativizing* the criterion to some standpoint ρ called the 'paradigm existent' (usually, for a criterion X, ρ is taken to be egocentric or self-centred, that is, to exist is to be X-related to *me*, but it needs not, ρ can be a specific entity as God—for instance, if X is 'to be created by'—, an inertial frame, etc.): in a substantialist framework, to exist is to have a spatio-temporal location in the neighbourhood of ρ ; in a relationist one, to exist is to be spatio-temporally related to ρ . In the SR background, of course, from a meta-ontological point of view, such an application of the paradigm strategy needs to remain neutral between r-invariance and relativization, albeit it naturally tends to favour the relativization of existence (if ρ is taken to be a particular observer or a peculiar inertial frame, see Routley, 1980, p. 714). More generally, the paradigm strategy (to exist is to be suitably related to some paradigm existents, i.e. $E!x$ iff Rxp where R is the relevant ontological relation) in no way involves that the paradigm entities are necessary existents, and such a fact is surely an advantage since everything that exist might not be, not only in a distributive sense, but also in the sense that all things that exist might *collectively* not exist.²³ Of course, the paradigm strategy faces the Heideggerian charge of mistakenly offering an *ontical* answer to an *ontological* question (indeed, the paradigm strategy is in fact the main strategy pursued by the Philosophical Tradition from Plato onwards that Heidegger accused of having 'forgotten' the question of Being, e.g. Medieval thinkers who have answered: 'what does it mean to be/exist? easy, to be a creature of God', see the short story in Heidegger 1927, §6, on the difference between the ontological and ontical meanings of 'being', see Heidegger 1927, §§1–4), and, for this reason, is not completely satisfactory: paradigmatic criteria are efficient extensional criteria when it comes to selecting what exists and excluding what does not, but they say almost nothing about the *meaning* or *concept* of existence.

²³ See Marion WMI, pp. 929–936 for a brief discussion of such a contingentist puzzle.

2.2.2 B2 α 1. Causal Criteria

To exist is to bear a causal relation to another existent. For the point of this paper, let reduce what is a ‘causal relation’ to ‘physical interaction’ (to avoid giving existence to objects that have *explanatory* powers but no real *causal* powers like, for instance, mathematical models). Straightaway, it can be seen that the causal criterion implies the spatio-temporal one (see Berto, 2013, pp. 63–64): either it implies the spatio-temporal criterion in its substantivalist disguise, or is identical to the relationist spatio-temporal criterion. If so, like the spatio-temporal criteria, the causal one is neutral on the question of whether existence is r-invariant or not (standard monist realism vs. external relativism), of whether the realm of existence is topologically all of a piece or shattered into many unconnected and causally isolated spatio-temporal pieces (standard monist realism vs. non-standard pluralist realism, see Routley, 1980, pp. 716–717). For that matter, it is even worse, since the causal criterion—as all *relational* criteria—straightaway answers to the question of which of eternalism or presentism is true once the metaphysical nature of relations (are relations existence-entailing?) is fixed: either a causal relation implies that all *relata* exist, and so past and future items exist; or a causal relation does not imply that all *relata* exist, and so it is possible that only present things exist and have relations with non-existing past and future items (an effect can exist while its causes no longer exist, and a cause can exist while its effect do not yet exist). Moreover, the case of fictional items is again in concern (see Routley, 1980, p. 716), as there are causal nexuses in fiction (for Aristotle, a good fiction must have a causal unity, see *Poetics*, 8–9), e.g. Tom Bombadil causes the Ring to disappear and reappear. As many other criteria, the causal one is in fact either circular or inadequate or must appeal to the paradigm strategy (see discussions on B1 and B2 α 3), given that it does not characterize existence independently of an appeal either to already existing objects (the causal relation must connect two *existent* items, or connect something to a paradigm existent) or to other ontological criteria (the causal relation needs to hold between two actual/concrete/spatio-temporal items).

Almost all Noneist or neo-Meinongian metaphysicians tend to favour the view that to exist is to be able to act or suffer (the so-called ‘Alexander’s *dictum*’²⁴), i.e. that existence is to be able to enter in a causal relation (a modalization of the original causal criterion). The view is plausible, at least for concrete entities (consequently, the modalized causal criterion suffers from the same difficulties as the non-modalized one: usually, the partisans of the modalized causal criterion dismiss the case of fictional causations out of hand, and they explicitly constrain the modalized causal criterion with the further egocentric clause ‘to exist is to be able to act or suffer *with me, the author of these lines*’, that is, by using the paradigm strategy, see Berto, 2013, p. 64 who follows the suggestion from Routley, 1980, p. 716), but not mandatory. A new problem is that such a modalization of the causal criterion involves some reflections about the transitivity of accessibility-relation in modal semantics

²⁴ See Routley (1980, pp. 759–764); Berto (2013, pp. 61–83) and Priest (2016, pp. xxvii–xxix, 135–137, 155), they explicitly follow the criterion from Plato, *Sophist*, 247d8–e4, 248c1–5.

(to put the issue into a Kripkean relational semantical framework). If the criterion X of existence is modal, the issue about its transitivity reduces to question of whether the correct modal system for metaphysical modalities implies that the accessibility-relation is transitive or not (that is, the question of whether this modal system is S4 or stronger). And it is quite another enquiry.

Another causal criterion was historically important (in sixteenth–eighteenth centuries), albeit almost totally absent from the discussions nowadays²⁵: the late-scholastic view (Cajetan, Suárez, etc. see Bardout, 2013, pp. 424–437, this view was unsurprisingly a legacy of the medieval debates arising from the Christological reflections of Marius Victorinus and Richard of Saint Victor, for a study see Bardout, 2013) according to which to exist is to be set or to be posited²⁶ out of its causes (*sistere extra causas* or *extra causas posita*). The basic idea of *existentia* as *extra-sistentia* is that an existent item, first, has a causal dependency to what has produced it, and, second, is distant from its causes (for the process of causation has been completed), i.e. the existent item is set outside of its causes. Such a causal criterion was often glossed by the modal criterion: an existent is no longer a mere possible item contained in its potential causes but from now on it is actual and posited out of its causes (*existentia* = *actualitas*, see Bardout, 2013, pp. 427–428). If the late-scholastic criterion reduces to the modal one (A1), *extra-sistentia* might not be r-invariant.

2.2.3 B2α2. Grounding Criteria

To exist is either to ground something or being grounded by something, i.e. either to be fundamental or to be derivative, i.e. to be independent or to be dependent on something. The grounding or foundational criterion that is advocated in Fine (2001) and Schaffer (2009) (amongst others, see Berto & Plebani, 2015, pp. 113–119 for a short discussion) is fashionable nowadays, the grounding criteria are vindicated to give up the now-old quantificationalist meta-ontology inherited from Quine (1948) (for a criticism of the quantificationalist approach from a ‘groundinistic’ one, see Fine, 2009). But, as it is often the case, there remains considerable disagreement amongst the post-Quinean metaphysicians who favour an ‘ordered metaphysics’ rather than an univocal quantificationalist one: some argue that both *fundamentalia* and derivative items exist (Fine, 2001, 2009 and Schaffer, 2009), others that only *fundamentalia* exist while the derivative do not exist at all (Azzouni, 2004, 2010, 2017 whose ontological criterion according to which only items that are independent ‘from linguistic and psychological processes’ exist reduces to the Empiricist criterion (B2α3) discussed below, i.e. Azzouni’s ‘Simple Metaphysics’ is ultimately, as Azzouni himself acknowledges, a hard or ‘deflationary’ nominalistic kind of Empiricism). Worse,

²⁵ This Medieval view (famously customized by Heidegger with his concept of *Ek-sistenz*), according to which to exist (or ‘to ex-sist’) is to ‘stand out’, is briefly discussed in Kahn (1966, p. 256) and, more recently, in Gabriel & Priest (2022, pp. 35–36, 105–106).

²⁶ Kant, AK 2.73–74, 3.401 is reminiscent of such a linkage between *existence* and *being posited*: ‘Being is obviously not a real predicate, i.e. a concept of something that could add to the concept of a thing. It is merely the positing of a thing or of certain determinations in themselves’. (AK 3.401, translation from Guter P. & Wood, A. W.)

amongst the proponents of a ‘groundinistic’ meta-ontology, some metaphysicians even doubt that there are *fundamentalia*, i.e. that reality is structured or hierarchized in such a way that there is an ultimate foundational base: for some, the structure of reality seen through the prism of the grounding relation or of the ontological dependence relation could either admit loops, or be such that there is no last or first link in the grounding chain, or even have a more idiosyncratic structure. The fact that the structure of <ontology + grounding relations> could have many patterns directly influences the question of what the formal properties of the grounding relation are. Although the hyperintensional grounding relation is usually taken to be irreflexive, asymmetric and transitive (see Fine, 2012 for instance), some ‘deviant’ philosophers claim that such a relation of ontological foundation could just as well be reflexive, symmetric and/or non-transitive (see Bliss & Priest, 2018 for a philosophical discussion, and Marion, 2022, pp. 31–40 for a historical discussion that presents some historical figures who play with a heterodox grounding relation). In short, there is little agreement on the formal properties of the grounding relation. Yet the question of whether existence is invariant or not deals with one of the formal properties of the grounding relation, namely its *transitivity*, albeit in an unusual way. So, it appears that the issue is quite underdetermined, but worthwhile of further investigations.

2.2.4 B2α3. Phenomenist (Berkeleyan) Criteria

To exist is either to be perceived or to perceive. Of course, perception implies the concreteness-criterion (A4, but it can be argued that Tom Bombadil really perceives a lot of things, even Frodo, although the Hobbit has made himself invisible to mortal eyes by putting the Ring on his finger; if so, as the spatio-temporal ones, the phenomenist criteria need either to be circular, or to be supplemented by other criteria like A1 or A4, or to be revised according to the paradigm strategy in an egocentric way) and is not transitive: if *x* sees/hears/ smells/touches/tastes *y*, and *y* perceives *z*, it is possible that *x* does not perceive *z*. Such a non-transitivity of perception was historically the main motive for the building of networks of look-out spots (in a way, it is also why Protagoras faced the charge of alethic relativism in Plato’s *Theaetetus* and Aristotle’s *Metaphysics*, Γ.5–6). Beyond other putative and customary objections (see Routley, 1980, p. 714 for a very short review), the phenomenist criterion is widely open to relativity.

The modalization of *esse est percipi vel percipere* is as follows: to exist is to be perceivable or able to perceive (see Routley, 1980, p. 714). Whether Modal Berkeleyanism implies a perceivability relation that is transitive is a logical affair: perceivability is transitive once modalities satisfy S4 or a stronger system. Most metaphysicians believe that the right system for metaphysical modalities is S5,²⁷ if so, perceivability is a transitive relation and, therefore, must be r-invariant. As noted before for modalized causal criteria (B2α1), this is by no means because perceivability *in itself* implies transitivity, but because modal notions are understood as involving a transitive accessibility-relation, so if existence is perceivability, then the issue about its

²⁷ See Williamson (2013) and Hale (2013, pp. 127–131), *contra* Salmon (1989) and Wedgwood (2007, pp. 212–220).

r-invariance is quite underdetermined. Moreover, if concreteness implies perceivability (as it is quite plausible), then Modal Berkeleyanism is reducible to A2. Furthermore, perceivability is *a priori* too narrow, since some debatable objects like abstract stuffs (amongst other, see the discussion of B1) are right from the start rule out from the realm of existence, and also too wide, since hallucinatory objects (for instance, the rough sea I once see in a city-kindergarten after I have eaten some hallucinogen mushrooms in 2008, or what Frodo see in Galadriel's mirror, namely inexistent and counterfactual future *terrible* events) are taken to be existent (on this point, perceivability is both too narrow and too wide, see Routley, 1980, p. 715).

Another criterion related to Berkeleyanism is the Empiricist criterion according to which to exist is to be observable, or to exist is to be empirically accessible (if we give an input to the world in our experiments, the world furnishes a non-trivial output). So, existence is understood as involving a relation between what is observed and an observer, that is the basic idea behind the Phenomenist criterion (in old philosophical vocabulary: a subject-object relation). Of course, the concept of 'observable' in modern physics is quite more complicated than perceivability (especially in General Relativity and Quantum Mechanics), but it can be roughly assumed that in order to be 'empirically accessible', an item needs to be measurable or detectable with experimental devices (of course, empirical detectability is itself a vexed question in contemporary experimental machinery: it is often very touchy to discriminate a genuine physical measure from background noise, see the story of the discovery of Higgs boson in 2012). Insofar as the relation that holds between an observable and an observer is a causal one, the Phenomenist and Empiricist criteria can be seen as a sub-kind of modalized causal criteria (B2 α 1).²⁸

2.2.5 B3 α . Full Determinacy Criteria

To exist is to be fully determinate (very often glossed as follows: to exist is to be consistent and complete in all respects), that is, for all features, the existent item either has the property or lacks it. At first sight, one might think that 'fully determinate' is a bit underdefined and underdetermined, but this is no longer the case when the description is restricted to extensional data: to exist is to be fully determinate in all extensional respects. From a logical point of view, such a criterion equates to the claim that existence amounts to a coincidence of predicate and sentence negation (or of *de re* and *de dicto* negation), that is, an item x exists iff, for every extensional predicate Φ , x is not- Φ iff it is not the case that x is Φ (on such a logical translation of the full determinacy criterion, see Whitehead & Russell, 1910, pp. 194–195 [*14-32] and Routley, 1980, pp. 244–248, 361–364). Indeed, if x does not exist—let x be the current King of France and Φ the property of baldness—, then ' x is not- Φ ' either is false (Russell-Quine) or lacks truth-value (Frege), but ' x is not the case that x is Φ ' is true, and therefore non-existence breaks the equivalence of predicate and

²⁸ For the record, another view can be linked to Empiricist and Berkeleyan ones, namely that of Hacking (1983) according to which to exist is to be manipulable, i.e. to be able to be *used* to effectively interfere with the world (in Hacking 1983, p. 23 words: 'so far as I'm concerned, if you can spray them then they are real' ... so electrons and other theoretical items are real).

sentence negations. An obvious corollary is that non-existent items violate the predicate Principle of Excluded-Middle (for any predicate Φ , either x is Φ or x is not- Φ), i.e. they are *incomplete* objects, e.g. the current King of France neither is bald nor is not bald, nor does he wear a wig or not wear one²⁹ (for the record, impossible objects also violate the predicate Principle of Non-Contradiction—for any predicate Φ , it is not the case that both x is Φ and x is not- Φ —, since they are characterized by the fact that they both have and lack some extensional feature, i.e. *impossibilia* are *inconsistent* objects). Such a view is defended in the Leibnizian-Wolffian tradition, for instance in Baumgarten (1757, §§34–71) (who follows Wolff in believing that such a determinacy criterion implies the modal one (A1) insofar as merely possible objects are only partially determinate), and, more recently, by Meinong (1915, p. 169) (furthermore, Meinong—and some of his followers like Routley, 1980, pp. 244–248³⁰—made the same move as the Leibnizian-Wolffian tradition in linking the full determinacy criterion and the modal criterion A1: merely possible items are not fully determinate, while actual and existing objects are), but the view is criticized in Kant, AK 2.76–77 (Kant maintained that the Principle of Excluded Middle must also hold for mere *possibilia*, i.e. for Kant, the current King of France is not a possible object but an impossible one... but this is highly counter-intuitive for such a view narrows too much the scope of true ascriptions of possibility) and Routley (1980, pp. 720–726) (mainly by invoking borderline cases like vague existing objects that fail to be determinate in all extensional respects, e.g. clouds, waves, gases, mountains, forests, etc. of which their spatial boundaries are indeterminate).

As argued by Routley (1980, pp. 361–368), full determinacy criteria tend to favour existence-now or existence-at-a-time, since past and future items are not completely determinate in all extensional respects as soon as tensed predicates (or a tensed copula) or time-indexed predicates (or a time-indexed copula) are allowed, in such a way that past and future items behave like merely possible objects, e.g. Aristotle, a past item, is now alike to the current King of France, for ‘Aristotle is not bald now’ is false or has no truth-value while ‘it is not the case that Aristotle is bald now’ is true, hence (because predicate and sentence negations do not coincide) Aristotle does not exist now. At best, Aristotle is completely determinate for the past-tensed extensional predicates (‘Aristotle was not bald’ is true and ‘it is not the case that Aristotle was bald’ is true), but from this only his past existence or his existence at the times when he was alive can be inferred (past and future items are incomplete objects now, even if there were or will be times at which they were or will be complete ones). The point is that existence-now and existence-at-a-time are two relativized existences (to the present for the first, to any time for the second). The argument can be resisted, however, since eternalists and Putnam’s aficionados can easily infer existence *simpliciter* or tenseless

²⁹ To borrow the joke from Russell (1905, p. 485): ‘by the law of excluded middle, either “A is B” or “A is not B” must be true. Hence either “the present King of France is bald” or “the present King of France is not bald” must be true. Yet if we enumerated the things that are bald, and then the things that are not bald, we should not find the present King of France in either list. Hegelians, who love a synthesis, will probably conclude that he wears a wig’. (Russell’s answer is obviously quite unsatisfactory).

³⁰ Provisionally, Routley (1980, pp. 720–732) attempts to revise such a position to make it more satisfactory.

existence from existence-at-a-time *via* the following path: sometime-existence is true iff there is a time at which existence-at-a-time is fulfilled, and existence *simpliciter* is true iff sometime-existence is true (x exists simpliciter iff x sometime-exists iff there is a time such that x exists-at-that-time). But it can be objected that such a move oddly bifurcates the ontological criteria for the different kinds of existence: indeed, unlike existence-at-a-time, the criterion for existence *simpliciter* and sometime-existence is not captured by the full determinacy criterion but rather by some spatio-temporal one (B1). So, they should reject that the full determinacy criterion is the basic criterion for existence or supplement it with others. This is a serious meta-ontological drawback. To sum up, although full determinacy criteria imply some relativization of existence (relativization to the present, indexation to times), such a relativization can be bypassed and invariance recovered, albeit not for free (*viz.* at the cost of the bifurcation of ontological criteria).

2.2.6 B3 β . Qualified Determinacy Criteria

To exist is to be determinate in some but not all extensional respects. Given that some existing items are vague and not fully determinate in all extensional respects (clouds, mountains, forests, etc.), the determinacy criterion must be adjusted and restricted to some subclass of extensional features, i.e. an item x exists iff, for every extensional predicate Φ of the subclass Ψ , x is not- Φ iff it is not the case that x is Φ (see Routley, 1980, pp. 726–727). Of course, the problem is how to select the ontologically relevant Ψ -features. Another option is to state that existence is only a *partial* determination in regard to some subclass of extensional features. The subclass of *referentially acquired* features (namely the properties that items have as a result of their behaviour in the empirical world) appears to do the job, since all features that hold of non-existent objects are non-referentially acquired (they are acquired through assumption, descriptive characterization, and intensional determinations, i.e. by way of the Characterization Postulate³¹—for any condition $\alpha[x]$ with free variable x , some item exactly satisfies $\alpha[x]$ —and of fictional devices as source books): to exist is to be partially determinate in referential respects, or to exist is to have referentially acquired properties (see Routley, 1980, pp. 727–730). But in order to state if a property is referentially ascribed or not (i.e. to track down how the attribution of a property originates), other criteria have to be used, e.g. spatio-temporal (B1), causal (B2 α 1), phenomenist, or empiricist (B2 α 3) ones, in such a way that the determinacy criteria are no longer the basic criteria for existence but only derived ones. In fact, because ‘referential acquired’ amounts to ‘empirically-determined’ and ‘ostensively-discerned’, the restriction of extensional features to referentially acquired ones turns partial determinacy criteria into Empiricist criteria (B2 α 3), i.e. the appeal to *reference* as ontological criterion makes partial determinacy criteria nothing more than Empiricist criteria in disguise.

³¹ The brute Characterization Postulate (CP) needs to be amended to address various challenges. Routley (1980) revises CP by distinguishing characterizing from non-characterizing properties (or nuclear and extranuclear properties), while Berto (2013) and Priest (2016) defend that CP must be modalized as follows: for any condition $\alpha[x]$ with free variable x , some item exactly satisfies $\alpha[x]$ at least at some intentionally accessible world. For a survey, see Berto (2013, pp. 85–151).

Furthermore, the genetic enquiry for discovering whether a property is referentially imputed or not implies the paradigm strategy in an egocentric way (for similar objections, see Routley, 1980, p. 729), given that there are fictional items as Gandalf and Aragorn that are able to investigate about the way of how features are ascribed to other fictional items, and Frodo is able to discriminate items that are not fictional from his point of view (such as Sam and other Hobbits) and meta-fictional objects that are also fictional from his point of view (such as the Man in the Moon from Bilbo's song *The Man in the Moon Stayed Up Too Late*), and he is able to do this precisely by distinguishing between what has some referentially (from his point of view) acquired feature (what is empirically accessible to him) and what has only non-referentially acquired properties; put differently, within Tolkien's fictional universe, there are different levels of fictionality, and thus, at a certain level, some things which have no referentially acquired feature from our viewpoint have some from the point of view of the first-order fictional characters, while some things have no referentially imputed property from both our point of view and the point of view of the first-order fictional characters. To avoid saying that existence is world-relative in a Lewisian fashion (every possible world, whether fictional or not, has its own realm of existence, i.e. existence is indexical, see Lewis, 1986), i.e. to prevent stating that some *ficta* truly exist *as we exist* albeit from their own point of view, the paradigm strategy (in its egocentric clothes) should be applied again: reference is reference to *us*, we ourselves are the paradigm existent, and therefore what is empirically accessible is what is empirically accessible for us.

Moreover, as far as they are concerned, the partial or qualified determinacy criteria tend to favour existence-now and existence-at-a-time, since past items (such as Aristotle) and future items (such as the successor of Elisabeth Queen of the Belgians) neither have referentially acquired feature now nor are empirically accessible now. To the extent that is correct, the case of partial determinacy criteria with respect to ontological variance is similar to that of full determinacy criteria (B3 α).

Surely, there is a lot of other fine-grained criteria for existence in the rich history of philosophy that I am not aware. Perhaps one of them necessarily implies the invariance of existence. But, at least in the criteria discussed above, none of them entails the absoluteness of existence. And I tend to believe that these criteria almost exhaust everything that philosophers have tried to express when they have used the concept of existence.

3 Conclusion

The overview shows that no meaning of existence necessarily implies r-invariance. Meta-ontologically speaking, invariance and existence do not necessarily walk hand in hand.³² Thus, I reverse the onus of proof to Putnam's aficionados: why should SR imply that everything—past, present and future items—exist? Why should we endorse 'There Are No Privileged Observers'?

³² This conclusion is far from having limited consequences only in metaphysics of physics (special and general relativity, gauge theories, etc.). Another hot spot, for instance, is the question whether virtual or digital objects exist in the full sense of the term or not. On this fashionable topic nowadays, see the opinionated Chalmers (2022).

Declarations

Competing Interests The author declares no competing interests.

References

- Azzouni, J. (2004). *Deflating existential consequence. A case for nominalism*. Oxford: Oxford University Press.
- Azzouni, J. (2010). *Talking about nothing. Numbers, hallucinations and fictions*. Oxford: Oxford University Press.
- Azzouni, J. (2017). *Ontology without borders*. Oxford University Press.
- Bardout, J.-C. (2013). *Penser l'existence. I. L'existence exposée – Époque médiévale*. Paris: Vrin.
- Baumgarten, A. G. (1757). *Metaphysica*, Editio IV, Hale Magdeburgicae, Impensis Carol. Herman, Hemmerde.
- Berto, F. (2013). *Existence as a real property*. Springer, Dordrecht: The ontology of meinongianism.
- Berto, F., & Plebani, M. (2015). *Ontology and metaontology. A contemporary guide*. London: Bloomsbury.
- Bliss, R., & Priest, G. (2018). The geography of fundamentality: An overview. In R. Bliss & G. Priest (Eds.), *Reality and its structure* (pp. 1–33). Oxford University Press, Oxford.
- Callender, C. (2017). *What makes time special?* Oxford University Press.
- Chalmers, D. J. (2022). *Reality+. Virtual worlds and the problems of philosophy*. London: Allen Lane.
- Crucius, C. A. (1753). *Entwurf der notwendigen Vernunft-Works, wiefern sie den zufälligen entgegen gesetzt werden*, Leipzig.
- Dainton, B. (2010). *Time and space* (2nd ed.). Durham: Acumen.
- Dorato, M. (2008). Putnam on time and special relativity: A long journey from ontology to ethics. *European Journal for Analytic Philosophy*, 4–2, 51–70.
- Fine, K. (1984). Critical review of parsons' *non-existent objects*. *Philosophical Studies*, 45–1, 95–142.
- Fine, K. (2001). The question of realism. *Philosophers' Imprint*, 1–1, 1–30.
- Fine, K. (2003). The problem of Possibilia. In M. J. Loux & D. W. Zimmerman (Eds.), *The Oxford Handbook of Metaphysics* (pp. 161–179). Oxford University Press.
- Fine, K. (2005a). Tense and reality. *Modality And Tense* (pp. 261–320). Oxford Clarendon Press, Oxford.
- Fine, K. (2005b). Necessity and non-existence. *Modality and Tense* (pp. 321–354). Oxford Clarendon Press, Oxford.
- Fine, K. (2009). The question of ontology. In D. J. Chalmers, D. Manley, & R. Wasserman (Eds.), *Metametaphysics* (pp. 157–177). Oxford University Press, Oxford.
- Fine, K. (2012). Guide to ground. In F. Correia & B. Schnieder (Eds.), *Metaphysical Grounding* (pp. 37–80). Cambridge University Press, Cambridge.
- Gabriel, M., & Priest, G. (2022). *Everything and nothing*. Polity Press.
- Gödel, K. (1949). "A remark about the relationship between relativity theory and idealistic philosophy", Feferman, S. (ed.). 1990. *Kurt Gödel. Collected Works*, vol. 2(pp. 202–207). Oxford University Press, Oxford.
- Goodman, N. (1978). *Ways of worldmaking*. Indianapolis: Hackett.
- Hacking, I. (1983). *Representing and intervening*. Cambridge University Press.
- Hale, B. (2013). *Necessary beings. An essay on ontology, modality, and the relations between them*. Oxford University Press, Oxford. (pagination: Paperback edition of 2015).
- Heidegger, M. (1927). *Sein und Zeit*, in 1977. *Gesamtausgabe*, Bd. 2, Vittorio Klostermann, Frankfurt am Main.
- Heidegger, M. (1928). *Metaphysische Anfangsgründe der Logik im Ausgang von Leibniz*, in 1978. *Gesamtausgabe*, Bd. 26, Vittorio Klostermann, Frankfurt am Main.
- Hinchliff, M. (1996). The puzzle of change. *Philosophical Perspectives*, 10, 119–136.
- Hinchliff, M. (2000). A defense of presentism in a relativistic setting. *Philosophy of Science*, 67(Suppl), S575–S586.
- Hinchliff, M. (1988). *A defense of presentism*, PhD Thesis, Princeton University.
- Iaquinto, S., & Torrenco, G. (2022). *Fragmenting reality. An essay on passage, causality and time*. London: Bloomsbury.
- Kahn, C. H. (1966). The greek verb 'to be' and the concept of being. *Foundations of Language*, 2, 245–265.
- Le Bihan, B. (2018). Contre les défenses du présentisme par le sens commun. *Igitur Arguments Philosophiques*, 9–1, 1–24.

- Lewis, D. (1986). *On the plurality of worlds*. Blackwell.
- Marion, F. (2022). *Seyn, ἔν, 道*: Brevis tractatus meta-ontologicus de elephantis et testudinibus. *Revue Philosophique de Louvain*, 119–1, 1–51.
- Marion, F. (2023a). *Modalité et changement: δόξαμῆς et cinétique aristotélicienne*. PhD dissertation, Université catholique de Louvain.
- Marion, F. (2023b). *Welcome to the modalist jungle. Potentiality-based modality: Semantics and metaphysics, Draft*. = *Supplementary Essay 2* in Marion pp. 917–945.
- McDaniel, K. (2017). *The fragmentation of being*. Oxford University Press.
- Meinong, A. (1915). *Über Möglichkeit und Wahrscheinlichkeit. Beiträge zur Gegenstandstheorie und Erkenntnistheorie* = 1972. Haller, R., Kindinger R. & Chisholm, R. M. (eds.), *Alexius Meinong Gesamtausgabe. Bd. 6*. Akademische Druck und Verlagsanstalt, Graz.
- Nozick, R. (2001). *Invariances. The structure of the objective world*. Harvard University Press, Cambridge MA-London.
- Paul of Venice (Paulus Venetus). (1978). *Logica Magna, Part. II Fascicule 6: Tractatus de veritate et falsitate propositionis & Tractatus de significato propositionis* (eds. Del Punta, F. & McCord Adams, M.), Oxford University Press, Oxford.
- Priest, G. (2016). *Towards non-being*. Second Edition, Oxford University Press, Oxford.
- Prior, A. N. (1957). *Time and modality. Being the John Locke Lectures for 1955–6 delivered in the University of Oxford*. Oxford Clarendon Press, Oxford.
- Putnam, H. (1967). Time and physical geometry. *Journal of Philosophy*, 64–8, 240–247.
- Putnam, H. (1981). *Reason, truth and history*. Cambridge University Press.
- Quine, W. V. O. (1968). Ontological relativity. *The Journal of Philosophy*, 65–7, 185–212.
- Quine, W. V. O. (1986). *Philosophy of logic* (2nd ed.). Harvard University Press.
- Quine, W. V. O. (1948). “On what there is”, in 1953. *From a logical point of view. 9 logico-philosophical essays* (pp. 1–19). Harvard University Press, Cambridge MA.
- Reynolds, S. L. (2006). Realism and the meaning of ‘real.’ *Noûs*, 40–3, 468–494.
- Routley/Sylvan, S. (1980). *Exploring Meinong’s jungle and beyond*. Australian National University, Canberra.
- Routley/Sylvan, S. (1997). *Transcendental metaphysics*. The White Horse Press, Cambridge.
- Russell, B. (1903). *Principles of mathematics*. Cambridge University Press.
- Russell, B. (1905). On Denoting. *Mind*, 14, 479–493.
- Salmon, N. (1989). The logic of what might have been. *Philosophical Review*, 98, 3–34.
- Schaffer, J. (2009). On What Grounds What. In D. J. Chalmers, D. Manley, & R. Wasserman (Eds.), *Metametaphysics* (pp. 347–383). Oxford University Press, Oxford.
- Sellars, W. (1962). Time and the world order. In H. Feigl & G. Maxwell (Eds.), *Minnesota Studies in the Philosophy of Science* (Vol. 3, pp. 527–616). University of Minnesota Press.
- Sklar, L. (1974). *Space, time, and spacetime*. University of California Press.
- Smart, J. J. C. (1979). “*The reality of the future*”, typescript. Canberra.
- Thyssen, P. (2020). *The block universe. A philosophical investigation in four dimensions*. PhD dissertation, Katholieke Universiteit Leuven.
- van Inwagen, P. (1998). Meta-ontology. *Erkenntnis*, 48, 233–250.
- Varzi, A. C. (2005). *Ontologia*. Roma-Bari: Editori Laterza.
- Voltolini, A. (2006). *How ficta follow fiction*. Springer, Dordrecht: A syncretistic account of fictional entities.
- Wedgwood, R. (2007). *The nature of normativity*. Oxford Clarendon Press.
- Whitehead, A. N. (1929). *Process and reality*. Macmillan, London: An essay in cosmology.
- Whitehead, A. N., & Russell, B. (1910). *Principia mathematica* (Vol. 1). Cambridge University Press.
- Williams, D. C. (1962). Dispensing with existence. *Journal of Philosophy*, 59–23, 748–763.
- Williamson, T. (2007). *The philosophy of philosophy*. Blackwell.
- Williamson, T. (2013). *Modal logic as metaphysics*. Oxford University Press.
- Wolff, C. (1730). *Philosophia prima sive ontologia*. Frankfurt-Leipzig (= GW II.3).

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