The Meaning of Existence

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With this paper Tibor challenges the reader to think about the meaning of existence.

This paper is about the meaning of the term “existence” – not about what there is, but about what we mean when we say that something “is”. For, whilst we may each be confident that we know what it means for something to “exist”, it is readily demonstrable that this meaning is not clear, and that there is actually little consensus. And this matters: for example, if we were to engage in a debate with Cardinal George Pell3 over how many angels dance on the head of a pin, it would no doubt be helpful if we could start by agreeing on the existence of pins… More seriously, if the project of Science is to describe what there is and how things work, then central to our scientific understanding is the business of deciding whether or not a thing is.

So, what does “existence” really mean? To gauge our personal, off-the-cuff intuitions, let us take a quick survey. Without thinking too hard or too deeply about it (the hard and deep thinking will follow shortly) please answer each of the following 20 questions with either “Yes” or “No”. Answer “Yes” only where you are prepared to commit to the existence of the proposed item, and “No” otherwise. Please also answer “No” if you do not understand the question or are genuinely unable to decide. For scoring, just count up the number of questions that you answer with a “Yes”.

1	Do you, yourself, exist?	Yes / No
2	Does ‘existence’, itself, exist?	Yes / No
3	Do apples exist?	Yes / No
4	Do electrons exist?	Yes / No
5	Do rainbows exist?	Yes / No
6	Do colours exist?	Yes / No
7	Does light exist?	Yes / No
8	Does energy exist?	Yes / No
9	Does darkness exist?	Yes / No
10	Does a vacuum (i.e., empty space) exist?	Yes / No
11	Do triangles exist?	Yes / No
12	Does the number ‘3’ exist?	Yes / No
13	Does the number‘0’ (zero) exist?	Yes / No
14	Does the number π (pi) exist?	Yes / No

15	Does infinity (∞) exist?	Yes / No
16	Does the number i ( ) exist?	Yes / No
17	Does Pythagoras’s Theorem exist?	Yes / No
18	Does Sherlock Holmes exist?	Yes / No
19	Does Santa Claus exist?	Yes / No
20	Does God exist?	Yes / No

Now, how many questions did you answer in the affirmative? Twenty? None? Seventeen? Some other number? Well, don’t worry; whatever number you came up with, you’re in excellent company! There is a well-established philosophical viewpoint to support just about any combination of yes/no answers. Here are a few of the more common interpretations, all widely discussed in the philosophical literature.

Answering “Yes” to none of these 20 questions is either “nihilism” – the doctrine that nothing at all exists; or “nominalism” – the view that these are all merely names for our thoughts and experiences, and do not necessarily entail any real existence. It might also be “anti-realism” – the doctrine that none of the things listed above exist in the form we would normally understand, but that something else exists instead.

Answering “Yes” to just the first two questions is “solipsism” – the doctrine that (oneself and) one’s own thoughts are all that exist, and that everything else is but a figment of one’s imagination.

Answering “Yes” to between 3 and 8 questions is “physical realism” – the doctrine that ‘existence’ represents some kind of ‘physical’, spatio-temporally located/extended instantiation, independent of ourselves. In other words, physically extant things are those that, “when you stop thinking about them, don’t go away”.4

Answering “Yes” to between 9 and 11 questions is “perceptual realism” or “phenomenalism” – the view that what exists is determined by the content of one’s perceived experiences. There are several different kinds of perceptual realism:

1. The utterly subjective kind, which takes the view that existence depends absolutely on personal experience – i.e., that there is no objective existence. Some things exist for you, and some possibly quite different things exist for me. On this interpretation, individuals determine what does and does not exist: for example, colour exists; unless you’re colour-blind, in which case it doesn’t. The ontological relativism evident in some flavours of postmodernism relies on this interpretation of “existence”.

2. The consensus kind, which takes the view that what exists is what is perceived by [almost] everyone, or at least by the majority.

3. The minority kind, which supposes that things exist even if just one person (or a few people) perceive them. For example, a few people claim to have seen aliens visiting us here on Earth,5 therefore aliens exist.

And perhaps there are other variants of perceptual realism too…

Answering “Yes” to between 12 and 17 questions suggests some kind of “formal realism” or “Platonic idealism”, which is the view that universal ‘truths’ (e.g., mathematical facts, natural laws and moral principles) also exist independently of our conception of them, just as physical things do.

And answering “Yes” to between 18 and 20 questions represents some kind of “conceptual realism” or “extreme idealism” – the doctrine that being possessed of a concept or idea is sufficient to underwrite the existence of its semantic content. In other words, on this interpretation, all it takes for something to exist is that someone should think of it. If you think of something, then it exists!

So, here are the results of the survey taken at Philo Agora:

Clearly, there is no consensus here – and no, it’s not even a normal distribution curve around some average view! Beyond a mild preference for Platonic formal realism, there is no apparent pattern. And this is unlikely to be because we don’t agree on what a rainbow or a triangle is… rather, it is because we disagree wildly about what we mean by “existence”!

So what, if anything, does (or even can) “existence” really mean? When – i.e., under what conditions – is it reasonable to assert that something exists? Well, at a minimum, we might agree that to

“exist” means to stand out (perhaps against some or other background) – to be discernible or distinguishable in principle.[6] And for something to stand out, there must be some or other difference, some heterogeneity, some discontinuity, some change…

For example, on a plain white flag, nothing stands out against the white background: there is no pattern, no white star, and no white cross. Nothing ‘exists’ on the flag, and hence it is simply a plain white flag.

Existence in the Physical Domain

So, accepting that to “exist” means to stand out, let us start by describing what it means for things to stand out in just the physical domain. Other, non-physical notions of existence will follow shortly.

“Ontology” is the study of existence in the broadest sense [Gk: Mn, ont- = being]. However, the term is also used more narrowly, to refer only to the inquiry into physical existence – to “what there is” – and to how we infer the nature of the world from its observable phenomena. In this paper, I use “ontology” in this narrower sense.

In the case of physical events, to “exist” means to occur or happen; in the case of objects, entities or states-of-affairs, to “exist” is simply to be that object, or to be in that state. And here, I specifically set aside any distinction between “existing” and “being”. According to the Oxford English Dictionary, the only difference between “to exist” and “to be” is etymological: to “exist” derives from Latin, whereas to “be” has ancient Indo-European origins. Otherwise, despite more recent attempts to distinguish them, the two terms are synonymous.

The sheer fact of physical existence – of “standing out”, of being distinguishable in principle – has several basic properties:

1. When we suppose that a thing stands out in the physical world – i.e., that it physically “exists” – we conceive of something more than when we merely suppose that it is possible for it to exist. And that “more”, whatever it may be, is the sheer fact of its standing out, of its physical existence.

2. This sheer fact of “standing out” is thus a simple logical binary: something either stands out, or it doesn’t. Hence something either physically exists, or it doesn’t: there is no fractional existence. Just as things cannot half ‘stand out’, so they cannot physically ‘half-exist’.

3. If “physical existence” per se is a simple binary, then there is only one way that things can fail to not exist; i.e., there is only one way that things can physically exist, which is somehow to be different to their surroundings, and thus to “stand out”.

4. Since it is a simple binary, “physical existence” has no attributes, and hence no nature. There is no “nature of existence”.

5. Physical existence is also a logical simple (or “primitive”): there are no simpler words or concepts in

terms of which “standing out” per se might be further described. We may further describe how something stands out, but the sheer fact of its standing out – of its “physical existence” – is elementary and irreducible: it just “is”, and there is nothing more that can be said about it.

6. It is also necessarily a priori. For something to stand out in the physical domain – i.e., for it to be “present” (as opposed to absent) – there must be some corresponding physical difference somewhere and somewhen (and for at least some finite amount of time). In other words, for something to physically exist, it must be spatio-temporally (located and) extended. And this spatio-temporal location/extension must come first – for something to be physically discernible in principle, it must first of all be spatio-temporally (located and) extended.

7. Thus, physical existence is a primary entailment. Things do not exist in virtue of what they are, of what they do, or even of what they can do. Rather, things are what they are and do what they do in virtue of the fact that they exist.

8. Moreover, “physical existence” is a synthetic a priori entailment[7] – a kind of “retro-fitted” primary condition. With no observable properties of its own, “existence” is not observable/describable directly, but declared as axiomatic to our ontology of the world, and entailed by any description and/or explanation of worldly affairs.

9. Spatio-temporal extension is not only necessary for physical existence, it is also sufficient: it is all it takes for something to physically exist. There is no stronger, more precise definition of ‘physicality’; nor, indeed, of ‘physical existence’. Spatio-temporal extension is synonymous with existence in the physical domain – neither can be claimed without the other.

10. The sheer fact of standing out – of physical existence – says nothing at all about what things exist, about what things are, or even about how or why anything stands out at all. It does not refer to things as we observe them (phenomena), or even “as they are in themselves” (noumena),[8] it merely declares that they are. “Physical existence” pertains to the fact that things exist (their “thatness”), rather than to what they are (their “whatness”).[9]

There are also several things that “physical existence” is not:

1. It is not a predicate; or, more particularly, it is not a “first-level property” of extant things. It is not an ordinary predicable property of an apple that it exists. Apples may be said to exist, but “that they exist” is not a property of extant apples:

By whatever and by however many predicates we may think a thing – even if we completely determine it – we do not make the least addition to the thing when we further declare that this thing is. [...] If we think in a thing every feature of reality except one, the missing reality is not added by my saying that this defective thing exists.[10]

2. Moreover, it is not even a “second-level” or higher-order predicate – a property of “first-level” properties – as originally suggested by Frege,[11] and later defended by Geach.[12] In fact, “existence” is not any kind of predicate at all; but rather the ontological correlate of the ‘element’ or ‘subset’ relation in Set Theory. After all, it seems entirely natural to say:

X Î U (‘X’ is an element in the Universe ‘U’),

or perhaps

X Ì U (‘X’ is a subset of the Universe ‘U’).

Or, if it is insisted that “existence” be, in some sense, a “property”, then rather than a property of any extant thing, it is more correctly the property of the background against which it stands out. For example, we might reasonably observe that it is a property of the Universe that it contains apples. But whatever is the case, the status of “existence” as a predicate remains a highly contentious philosophical point.

2. “Physical existence” is not an action or process: it is not something that extant things do (or even have to do).

3. On pain of circularity, “physical existence” cannot itself be a physically extant thing. Physical existence per se cannot, and does not, physically exist.

4. Physically extant (i.e., substantive) things do not depend for their existence on the existence of any other thing.[13] (By contrast, properties and behaviours do not, and cannot, exist independently, on their own. They exist only in virtue of the extant physical things that manifest them: e.g., triangular things – objects of triangular shape, orientation and/or alignment – can and do physically exist, but triangles and triangularity per se do not.)

Ontological Commitment

We are compelled to admit the physical existence of at least those entities and events whose denial creates a logical contradiction. For example, no matter how we interpret “physical existence”, it is impossible to claim that absolutely nothing exists – that there is nothing. (For such a claim to be made, at least the claimant must exist.)

Indeed, this inescapability is the point of Descartes’s famous “cogito ergo sum”.[14] One must exist even just to deny one’s own existence; hence, in any ontology, at least one’s self must be physically extant.

And so, some or other “physical existence” is inescapable. For the world to make any sense at all, some things simply must exist.

And when we say that something must exist – that something exists necessarily – we make what is called an ‘ontological commitment’.

Existence in the Non-Physical Domain

It is clear, however, that not every one of our various existence claims makes such an ontological commitment: many items in the lexicon of our experience declaredly do not commit to the physical existence of their referents! Entities such as Mickey Mouse, Santa Claus and the Tooth Fairy do not exist, and their physical non-existence does not create a contradiction in our understanding of worldly affairs. Indeed, they would create a contradiction if they did physically exist!

Clearly, acknowledging the existence of “Mickey Mouse” does not commit us to the physical existence of bipedal, anthropomorphic rodents! Such a commitment is not only unnecessary – we do not require a physically extant Mickey Mouse to make sense of our everyday “Mickey Mouse” experiences – it is actually necessary for us to declare the opposite, for we would be quite uncomfortable with such a commitment! So, unlike ‘ontological’ existence claims such as “I, myself, necessarily exist”, declarations of purely semiotic[15] or semantic symbols and/or names specifically do not assert the physical existence of their referents.

Thus there are at least two very different kinds of existence claims: those that require that we make ontological commitments (such as Descartes’s “cogito”) and those that require that we do not. And it would certainly help clarify matters if there were a handy way for us to distinguish them. Indeed, it is but an unfortunate accident of etymological history (and the source of much confusion) that we have only one word for ‘existence’; and hence that we are compelled to use the same word for both ‘existence’ in the physical, ‘ontological’ sense, and also in this second, ‘semiotic declarative’ sense.

And, perhaps an even greater accident of history is that formal logic doesn’t have the vocabulary to make this distinction either! Or, at least, it didn’t until the mid 1960s, when J. Karel Lambert developed his ‘Free Logic’,[16] which introduced the symbol ‘E!’ to denote the assertion of physical existence, as distinct from the commitment-free existential quantifier, ‘$’. However, this notation is still not widely used, and has yet to permeate contemporary philosophical thought.

Nevertheless, I think Lambert’s is an excellent idea, so let me here permeate it into this paper. In the spirit of Lambert’s notation, I propose the word “e!xistence” (to be pronounced “ee-xistence”) to denote assertions of existence that entail ontological commitment – i.e., to denote claims for the physical existence of spatio-temporally extended worldly entities and events – the kinds of things you can trip over and/or stub your toe on.

E!xistence claims, therefore, are subjective, epistemic assertions (i.e., made from/within some or other body or system of knowledge, just as we make them) that assert the objective (agent-independent) physical existence of actual ‘3+1’-dimensional non-homogeneities in the physical domain. In other words, e!xistence claims assert the spatio-temporally extended, physical presence of those things that are “out there” even if you do not assert them, or do not even know about them.

Similarly, I propose the word “$xistence” (to be pronounced “er-xistence”) to denote declarations of non-physical, ‘semiotic’ or ‘semantic’ entities and events; i.e., to denote their presence in the non-physical, virtual domain of concepts, ideas, symbols, names and “memes”.

Declarations of $xistence, therefore, do not assert any objective, physical non-homogeneity. Rather, they are agent-centric (subjective, or perhaps inter-subjective) declarations of semiotic tokens, labels, names, ideas, etc., with purely conceptual/imaginary semantic referents. $xtant ($xistent) entities/events may e!xist, but such existence is incidental to their semiotic/semantic declaration. $xistence declarations make no commitment – direct or implied – to any physical existence. For example, we may assert that “reindeer” and “unicorn” both $xist (i.e., that we are possessed of the concepts of “reindeer” and “unicorn”), whereas we may assert that only reindeer e!xist (physically).

Very different rules apply to asserting ontological (physical) e!xistence and semiotic (non-physical) $xistence. Anything at all can be claimed to $xist; concepts/tokens literally pop into $xistence as soon as they are imagined; and pop out of $xistence as soon as they are universally forgotten. The rules for e!xistence claims, by contrast, are far more stringent. We may claim the e!xistence of only those events and entities that can reasonably be inferred from physical observations

of what are presumed to be their manifest properties; and whose non-existence would create contradictions or render mysterious our best understanding of the physical world.

This is not to deny that imagining and forgetting are real, physical processes performed by physically extant entities (like you and me); and that the attendant states of knowing are real, physical states-of-affairs involving physically extant knowing subjects (like you and me). However, the imagining of concepts, symbols and/or tokens entails only the e!xistence of the concepts, symbols and/or tokens themselves, and makes no commitment to the physical existence of their semantic content.

So, we now have e!xistence claims that carry ontological commitments, and $xistence claims that do not. But what if we’re not sure? For completeness, we need also to coin the word “e?xistence” – to denote those e!xistence claims that are contingent upon empirical confirmation, but where that confirmation is still pending. In other words, we would assert the e?xistence of those events and entities that we might require to complete a logically coherent model of the world, but for which compelling empirical evidence is not [yet] available. For some believers, perhaps God e?xists in just this way.

Our new vocabulary forms an ontological hierarchy: declarations of $xistence may indicate, but do not entail, e!xistence; and assertions of e?xistence or e!xistence indicate, but do not universally entail, any actual (noumenal) existence.

Armed with this new vocabulary, we may now narrow the meaning of the original word, “existence”, so that it no longer refers to claims of either e!xistence or $xistence, but refers only to actual [noumenal] states-of-affairs in the physical Universe – i.e., only to the kind of states-of-affairs that make e!xistence claims true. These, of course, are noumenal existence claims: the kind of existence claims that, according to Kant, we are never fully qualified to make.[17]

Well, almost never: for I can think of at least three noumenal existence claims which, contra Kant, it turns out we are not only qualified, but are compelled, to make! (These are the universally incontrovertible synthetic a priori claims for dynamism, heterogeneity, and adherence to the Principle of Least Action in the physical domain.)

Anyway, let us briefly revisit our earlier survey, using this new, expanded, vocabulary. To the twenty questions, we may now respond as follows:

· You, yourself, must e!xist. Precisely what you are remains an open question (you may even be a brain in a vat); but you, qua the claimant of your existence, must exist. However, if by “you” you mean the personal social identity that you think of yourself as being, then that “you” is but a higher-order effect or behaviour of a vast aggregate of parts, and hence may only $xist.

· The second item, (existence), necessarily $xists.

· Item 3 (apples) may be said to e!xist, but they are higher-order aggregates of constituent parts rather than primary things qua apples. In other words, they have independent $xistence, but not independent e!xistence.

· Similarly for Item 4 (electrons), which are mostly said to e!xist, but may only e?xist. It is likely that they too will turn out not to be elementary particles (as they are mostly described), but the higher-order dynamic effects of yet unknown parts. If so, then electrons $xist, but have no independent e!xistence.

· Item 5 (rainbows) $xist. Rainbows are also higher-order effects, and do not exist qua rainbows. (In fact, almost everything in our ontology is some or other higher-order dynamic effect of some aggregate of constituent parts!)

· Item 6 (colours) $xist. There are light waves of various wavelengths, but those waves are not themselves coloured. The sensation of ‘colour’ is created entirely by subjective experience.

· Item 7 (light) e?xists. If light is composed of particles, then it e!xists. More likely, however, is that light is composed of waves, in which case it merely $xists. If light is a wave, then, by definition, light cannot be doing the waving!

· Item 8 (energy) either e!xists or $xists – there is wide disagreement among both physicists and philosophers on its true ontological status. Strictly speaking, energy $xists even as motion e!xists.

· Items 9 and 10 (darkness and vacuum) $xist. These terms refer to the absence of light and matter (respectively), and absences per se are not physically extant things.

· Items 11 through 17 are abstract concepts, which $xist as elements within their respective symbolic/semiotic systems.

· Items 18 and 19 (Sherlock Holmes and Santa Claus) also $xist. By definition, imaginary (fictional) characters do not e!xist.

· And item 20 (God) either $xists (symbolically) or e?xists (contingently) or exists (noumenally), as judged from personal experience.

So, it seems we can readily admit the $xistence of all 20 items in our survey, while at the same time admitting the physical or noumenal existence of perhaps only one or two. It all depends on how we interpret the term “existence”. Little surprise, then, that we can answer “yes” to 0, 1, a few, or even all 20 questions, depending on which sense of existence we have in mind at the time. The most popular view (formal realism, or Platonic idealism), would incline one to answer “Yes” to around 15 to 17 questions, while the second most popular view (physical realism) would incline one to answer “Yes” to around 5 to 7. And, in fact, that is precisely what happens in practice, as the responses to our little survey clearly showed.

However, the variation in these responses need no longer confound us. Armed with our newly expanded vocabulary, we can (a), distinguish between the realism of e!xistence in the physical domain and the idealism of $xistence in the conceptual domain; (b), distinguish between entities that have independent existence and entities whose e!xistence/$xistence depends on the e!xistence of other things; and hence (c), understand why e!xtant entities are causally efficacious while $xtant entities are merely epiphenomenal.

Moreover, we can even make sense of what might be meant by “the existence of $xistence” or “the $xistence of e!xistence”, or even by the trick question in our survey, “Does existence $xist?” For we now have the semantic tools with which to recognise that the two references to “existence” in each of these statements/questions are not necessarily of the same kind.

But we cannot yet distinguish between physical realism and perceptual realism (phenomenalism); or between realism and anti-realism. To make sense of these distinctions, we need to introduce yet another new word into our vocabulary.

Beables vs Observables

As highlighted by the Irish physicist, John Stewart Bell, we need to distinguish between “observables”: the things that can be observed; and “beables”: the things that can be.[18] After all, our best experiments in particle physics suggest that (a) the things that we observe mostly do not and cannot e!xist (i.e., we cannot reasonably commit to their objective, observer-independent physical existence); and (b), the things that must actually exist can, in practice, never be observed. Somewhat paradoxically, this means that in the kind of physical Universe that we happen to inhabit, observables and beables are seldom, if ever, the same thing! Little wonder that Brian Ridley[19] thinks Physics should carry a Mental Health Warning – it’s enough to make your head hurt!

And yet, counter-intuitively, this apparent paradox is exactly what we should expect! There is ample evidence to suggest that elementary beables – the fundamental constituents of all physically e!xtant objects – exist only on the sub-quantum scale (if they exist at all), and are all too small and/or move too quickly to be observed directly. We may observe them indirectly, but this still means that whatever we observe are not constituent beables themselves, but macroscopic events, entities and epiphenomena that emerge/arise from functional and/or structural aggregates of constituent beables.

Thus, if we define “beables” as those things that actually (physically) e!xist – in their own right (independently, as Spinoza said) – then beables are not “observables”. And hence observables are everything except beables – i.e., observables are those things that do not e!xist in their own right, but whose existence depends utterly on the presence of underlying beables. Take the underlying beables away, and no observables remain.

Note, however, that at least in the physical realm, the term “observable” now does not simply mean “candidate for observation”, but refers more specifically to things that are candidates for observation and nothing more – things like, for example, rainbows, shadows, mirages, waves, holograms, and if I may be so bold, even atoms! All are real, observable manifestations – real effects produced by real beables – but there is no literal correspondence between what we observe of them and the beable parts of which they are constituted. For example, there is no denying the $xistence of mirages – they are real, physical side-effects of heat haze. But how we see those mirages – or, more particularly, what we see of them or in them – tells us nothing at all about what is actually “out there”. Though they look just like distant lakes or oases, we are in error when we infer from $xtant mirages the e!xistence of those distant lakes or oases.

In short, things are either beable or observable, but never both. Beables e!xist qua beables, i.e., we assert their physical e!xistence literally, just as we describe/apprehend them. By contrast, observables $xist qua observables, but specifically do not e!xist as beables: our observations of them may be genuine physical interactions, but they are not, and cannot be, interactions with the kinds of things that we commonly describe as the objects of those observations. We specifically do not (and on pain of inconsistency may not) claim the literal physical e!xistence of observables. For example, though various facsimiles of Mickey Mouse can and do e!xist, Mickey Mouse himself cannot and does not. Likewise, rainbows and shadows are observables and we do observe them, but they cannot be physically e!xtant, beable objects – there are no separate ‘shadow-objects’ on the ground, and no ‘rainbow-things’, hanging there, up in the sky.

So, to paraphrase Donald Rumsfeld[20] wildly, there are many unbeable observables, an unknown number of unobservable beables (e.g., quantum foam, dark matter, dark energy, and who knows what else), and even an unknown number of unobservable observables. In the present context, this is no contradiction: our current scientific understanding suggests that all real beables are smaller than our current threshold of observability. Our best electron microscopes have a resolution of about 0.2 nanometres (2´10–10 metres, or about 500,000 times smaller than the resolving power of the human eye). We cannot observe smaller objects directly, but infer their existence from observations of what we suppose to be their macroscopic effects.

To understand the notion of “existence”, therefore, it is necessary to distinguish between beables (the things that beable things are) and their observable effects (the things that beable things do). Beables and observables have vastly different properties, and they play very different roles in our apprehension of worldly affairs. Beables respect haecceity[21] and persist in space and time; whereas observables do not, or at least need not. Beables are causally efficacious in a way that observables are not – you cannot trip over a shadow, or stub your toe on a mirage.

Indeed, to see the role of beables and observables in our scientific understanding, we need only recount the story of the Ship of Theseus.

The Paradox of the Ship of Theseus

Theseus, son of Aegeus and the second big hero of the Greeks after Hercules, is the mythical youth who is said to have sailed to Crete and slayed the Minotaur, in about the 13th century BCE. According to Plutarch,

“The ship wherein Theseus and the youth of Athens returned [from Crete] had thirty oars, and was preserved by the Athenians down even to the time of Demetrius Phalereus, for they took away the old planks as they decayed, putting in new and stronger timber in their place, insomuch that this ship became a standing example among the philosophers, for the logical question of things that grow; one side holding that the ship remained the same, and the other contending that it was not the same.” [22]

In this passage, Plutarch describes how Theseus’s ship was anchored in memoriam in the Athenian harbour, where it remained even down to the time of Demetrius Phalereus (c. 350-280 BCE), the well-known Athenian orator and student of Aristotle. To keep the ship in good repair over the centuries, the Athenians replaced each plank in the original ship as it decayed; until, eventually, there was not a single original plank left in the ship. Hence the original paradox: did the ship on display in Athens remain one and the same ship as that on which Theseus sailed to Crete?

For simplicity, let us explore a slightly different story, in which Theseus sails home across the Mediterranean from Crete in his wooden galleon, carrying a cargo of timber. While at sea, his ship develops a leak. He finds that the cause of the leak is a faulty plank, so he quickly removes it and replaces it with a new plank from the hold. A short time later his ship springs another leak, so he replaces that plank too. And so on, until after a time, he has replaced every single plank in his ship. Now, the question is this: “After every plank had been replaced, is Theseus’s ship – the ship on which he returns to Athens – the same ship as the one on which he set out from Athens?”

The Scottish philosopher, Thomas Hobbes [1588-1679], suggested a further wrinkle to this story:[23]

“If [...] that ship of Theseus [were continually repaired by] taking out the old planks and putting in new [planks,] and if some man had kept the old planks as they were taken out, and by putting them afterwards together in the same order, had again made a ship of them, [which ship would be the original one?]” [24]

So, suppose that “some man” worked out that the problem with Theseus’s original ship was not with the planks themselves, but with the manner of their assembly; and that he took all the planks that had been removed from Theseus’s ship and carefully reassembled them, thereby reconstructing the original ship. Now, the question becomes this: “Which ship, if either, is Theseus’s original ship?” Is it the ship with Theseus at the helm, or is it ‘Theseus II’, the ship reassembled from the planks removed from the original ‘Theseus I’?

For simplicity, let us label the ship that Theseus sets out on “A”; the ship that Theseus arrives back on

“B”; and the ship that is reassembled from the original parts “C”. Now, the puzzle is to resolve the identity (and non-identity) relations among A, B, and C. The only “obvious” fact is that B [1] C (after all, they are now sailing side by side in the Mediterranean, so they can hardly be one and the same ship!), but, beyond that, there are two clear alternatives:

First, there is the view that a ship is a “beable”, based on the principle that the identity of a beable object depends on its constitution – i.e., on the identity of its constituent parts. Also called the Mereological Theory of Identity (MTI),[25] this view can be formulated more precisely as follows:

For any compound objects, x and y, x = y only if every part of x is a part of y, and every part of y is a part of x.

On this interpretation – that sameness of parts is a necessary condition for identity – we naturally conclude that A = C; i.e., that the ship A on which Theseus set out on his voyage is identical to the ship C that was later reconstructed from all of its original parts. So here we have two ships: one ship (A) that was sailed out of Athens by Theseus, disassembled, and rebuilt as (C); and a second ship (B) that was created (out of new parts) during the voyage and sailed back to Athens by Theseus.

And yet, this view has a problem: for it requires Theseus to have changed ships at some time during the voyage! Consider how Theseus sets out on Ship A and returns on what is declaredly a different ship B, without ever leaving his ship. Theseus would be forgiven for believing that he was on one and the same ship for the whole journey; and yet this ship mysteriously changed its identity even as he was standing on it!

We might conclude, therefore, that the Mereological Theory of Identity (MTI) is too strong – that it denies constancy of identity for even those objects that we think of as persisting through time. And yet, this is precisely the view that we would adopt if ship A were in a museum, say, and a clever ring of thieves were stealing the ship by removing its pieces one at a time and then reassembling them. Each day, the thieves would remove one piece of the ship, replacing it with a look-alike. When they had removed all the original pieces, we would be left with a ship B in the museum (made of all new materials), and a ship C in the possession of the thieves (made of the original pieces of A now reassembled). But now which ship is the original ship A? Surely it would be ship C; for ship B is just a fake copy of A, left behind in the museum by the crooks to cover up their crime.

And there is another problem too: one that philosophers call a “sorites” paradox.[26] After the thieves had replaced and made off with just a few pieces, ship B would still be ship A, but with a few pieces missing. After the thieves had stolen all but a few pieces, ship C would be the original ship A, duly reassembled, minus a few pieces that are yet to be stolen. But what about when the thieves had stolen approximately half the pieces? Is it then ship B or ship C that is the original ship A? How might we determine the precise moment at which ship A loses/changes its identity?

So, eventually, we might conclude that this Mereological Theory of Identity (MTI) is just not the right way to think about identity. But then, with what might we replace it?

The most promising (and most common) replacement is the principle of Spatio-Temporal Continuity (STC), which traces the identity of physically extant objects by their continuous traces through space-time. Unlike MTI, this formulation is compatible with the substitution of parts, provided that the exchange is gradual and the form, shape and function of the object is preserved. A good example is our own bodies:

“[M]y body is the same body as the one I owned 20 years ago, even though nearly all the matter (in the form of its living cells) has been replaced. … [W]hat matters is the ‘covering concept’ – i.e., what [my

body] essentially is, and cannot lose on pain of ‘going out of existence’.”[27]

Though STC may be an improvement over MTI, it too has its problems: for we can readily imagine cases where STC seems to be violated while numerical (constitutive) identity is preserved. For example, consider a bicycle that is taken apart, its parts placed in a number of separate boxes, the boxes shipped separately across the country, then unpacked and the bicycle reassembled. As with any object that is disassembled, relocated and then reassembled, STC fails as a determinant of the bicycle’s identity – for there is now no continuously existing bicycle-shaped object tracing a smooth path through space-time. Instead, MTI now gives the right answer: the reassembled bicycle is made of exactly the same parts as the one that was taken apart, and so it is numerically the same bicycle, and we are justified in thinking it so.

In sum, the problem seems to be that ships and bicycles are made of separable parts, and hence are not beables that e!xist independently, qua themselves, in their own right. Their e!xistence depends crucially on whether we regard them as single e!xtant entities, or as aggregates of e!xtant parts.

So, let us now examine the second view: that a ship is an “observable” whose identity depends not on its constitution, but on the continuity of its function – that of being a ship. Now, on this interpretation, we still identify the same three ships; but their identity/non-identity relations are different. We have A = B; i.e., the ship A, on which Theseus sets out on his voyage, is now also the ship B, on which he completes his voyage (consistent with the observation that Theseus never leaves his ship); and then we have another ship C, that is created (out of used parts) during the voyage.

But this view is also problematic: for given that B ¹ C, holding that A = B logically implies that A ¹ C, despite the fact that every part of A is now a part of C, and every part of C is/was a part of A. So, on this view, ships A and C are two different ships even though all their parts are the same; while ships A and B are the same ship, even though they have not a single part in common! With implications like these, this view of ships as “observables” seems to be no better at tracking the identity of Theseus’s ship than our earlier view of ships as enduring beables.

However, these implications are only problematic if at the same time as treating ships as observables, we remain attached to MTI-based notions of identity. And this is the source of our error: for constitutive, mereological identity does not, and indeed need not, apply to observables! For example, consider the surf on a good day at Bondi Beach. We readily observe that the water in the ocean is oscillating/waving, and hence that these waves are (at least) observables.[28] We might even be tempted to assert that these waves e!xist; but that would be speaking too loosely: for while we focus our attention on one particular wave and follow it as it builds, breaks, and dies away – we do so without regard for the fact that its material composition is constantly changing. In fact, we trace the progress of “that wave” completely oblivious of the replacement, every 2-3 seconds, of every single molecule of water that makes up that wave! Thus, although we observe correctly that the ocean is waving, there is, strictly speaking, no such thing as “that wave”.

As stated above, the identity of observables depends not on their constitution, but on their continuity of function; and “waving” is such a function. Waving is a behaviour, not a “thing” – it is something that oceans do, not something that oceans are. Hence oceans and waving e!xist, whereas waves (qua waves) do not.[29] Waves are summary descriptions of aggregates of events, and as such they are not e!xtant entities but $xtant epistemic constructs. And so it seems that the problems in our understanding arise only when we lapse back into beable-speak – when we confuse observables with beables, or expect observables to comply with MTI. If we are consistent in our treatment of observables, then no paradox prevails.

Ultimately, then, the paradox of the Ship of Theseus seems to swing on the definition of identity, continuity and endurance/persistence – on what it takes for something to be, and/or to remain, the “same”. Are things the same when they are identical numerically/constitutively (i.e., in virtue of what they are, or are made of), or when they are identical qualitatively/functionally (i.e., in virtue of what they do)? Is identity determined by

particularity/thisness (haecceity), or whatness (quiddity)[30]? Is a ship a beable or an observable?

If we grant primacy to beables, then the material, ‘beable’ substance of the ship determines its identity, and the Ship of Theseus is the one reassembled from the original ‘beable’ planks. By contrast, if we grant primacy to observables, then the ship’s identity vests not in its material composition but in its apparent ($xtant) behaviour/function, and the ship on which Theseus stands retains the title of the Ship of Theseus.

On the Meaning of “Existence”

Perhaps unsurprisingly, exactly the same questions arise when we describe our experiences of worldly affairs. Our notions of extant entities – their identity, persistence, properties, haecceity, quiddity and how we perceive their movements and interactions – are central to our understanding of how the world “works”, and critically affect how we construct our physical “laws”. So, to get the physics right, we have to get our notions of existence right.

And this is where things get interesting; for even in contemporary physics, there appears to be some confusion of beables and observables. Classical ‘Newtonian’ mechanics describes the macroscopic world (approximately, and ultimately incompletely) in terms of objectively e!xtant beables. Einstein’s Theories of Relativity resolve some of the shortcomings of the Newtonian view by replacing some of its macroscopic beables – space, time, length, mass – with observables. For Einstein, these are no longer objective constants, but subject-relative variables: time dilates, length contracts and mass increases with velocity. Quantum mechanics goes even further, describing the macroscopic world entirely in terms of observables, and describing the microscopic world in terms of a hybrid of beable “fields” and observable “particles”.[31] And, on the present analysis, even quantum mechanics seems not to go far enough: for our observations of worldly phenomena deliver us an ontology composed entirely of relationships and interactions between observables, and utterly devoid of ‘real’ beable things. What we observe of the world is necessarily about what there is, but it is equally necessarily not exactly what there is. And that’s as good as it gets – and as good as it can get – scientific inquiry can get us no closer to “what there really is”, or to “the way things really are”.

And it is the recognition of this limitation that inclines scientists – and in particular, quantum physicists – towards phenomenalism, perceptual realism, and in extremis, to nominalism and ultimately anti-realism. Strictly speaking, all of the 20 items in our survey are $xtant observables: they do not e!xist as beables, at least not in anything like the form in which we imagine them.

In the fine detail, even I – the “I” whose existence I cannot and do not deny – am not (or at least not quite) the “I” that I intuitively think I am. Strictly speaking, even that familiar, folk-psychological “I” does not e!xist per se; but $xists merely as some or other quasi-holographic emergent manifestation – the product of a vastly complex array of ‘real’, physical processes. But here I struggle. Am I, myself, a mere “observable”, or am I something more? Do I need yet another piece of terminology: a “behavable” – not strictly a beable, but somehow more than a mere observable – to make sense of my role in the affairs of the physical world? Do I perhaps need to interpret my apprehension of worldly affairs, and of my role in them, in terms of some or other mixture of observables and behavables?

Whatever the answer, it seems clear that the e!xistence/$xistence status of the entities in our ontology play a crucial role in our apprehension of the nature of “reality” – perhaps not all the time, but at least when we are being scientifically rigorous, or when we are speaking “strictly”. And sometimes – as, for example, when we struggle to understand quantum mechanics – we do need to speak more strictly. The Oxford don, A. J. Ayer, said it well:

“Now when a philosopher asserts that something ‘really’ is not what it really is, or ‘really’ is what it really is not, that we do not, for example, ‘really’ see chairs and tables, whereas there is a perfectly good and familiar sense n which we really do, or that we cannot ‘really’ step

into the same river twice, whereas in fact we really can, it should not always be assumed that he is merely making a mistake. Very often what he is doing, although he may not know it, is to recommend a new way of speaking, not just for amusement, but because he thinks that the old, the socially correct, way of speaking is logically misleading, or that his own proposal brings out certain points more clearly. [...] This may seem to be an arbitrary procedure, but I hope to show that there are good reasons for adopting it. And once these reasons are admitted, the purely verbal point is not of any great importance.” [32]

Thus, having aired my recommendations for a new way of speaking about “existence”, there is ‘really’ nothing of any great importance for me to say!

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[3] Cardinal George Pell AC [1941-], the Roman Catholic Archbishop of Sydney (2001-).

[4] Philip K. Dick [1928-1982], American novelist, writing in 1972.

[5] Mostly on nights immediately following screenings of Orson Welles’s “War of the Worlds”!

[6] The verb ‘to exist’ derives from the Latin exsistere: from ex- = out + stere = to stand.

[7] Immanuel Kant [1724-1804]: The Critique of Pure Reason.

[8] ibid.

[9] Martin Heidegger [1889-1976]: Being and Time.

[10] Immanuel Kant [1724-1804]: The Critique of Pure Reason (1787), Bk II, Ch. III, Sect. IV.

[11] Gottlob Frege [1848-1925]: Dialog mit Puenjer ueber Existenz.

[12] Peter T. Geach [1916-]: “Form and existence” (1955), Proceedings of the Aristotelian Society 55, pp.251-272.

[13] Benedictus de Spinoza [1632-1677]: Ethics, Def’n III

[14] [L.: “I think, therefore I am.”] René Descartes [1596-1650]: 2nd Meditation.

[15] Semiotic: pertaining to signs, symbols and their role in representation. [Gk: s ma = mark; s meion = sign; s meiMtikos = of signs]. Semiotics is the study of symbolic systems, including language.

[16] J. Karel Lambert [1928-]: Free Logic: Selected Essays (Cambridge, 2003).

[17] Immanuel Kant [1724-1804]: The Critique of Pure Reason.

[18] John Stewart Bell [1928-1990]: The Theory of Local Beables (Geneva: CERN, 1975), pp.1-2

[19] Brian Kidd Ridley FRS: Research Professor of Physics at the University of Essex, writing in 1976.

[20] “[T]here are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don’t know we don’t know.” [Donald Henry Rumsfeld (1932-) US Secretary of Defence, speaking at a Departmental press briefing on 12th February, 2002.]

[21] Haecceity [L.: haecceitas = “thisness”, from hic, haec, = this] – a thing’s identity or ‘thisness’; i.e., the discrete constitution, properties, qualities and/or characteristics of a thing that make it the particular specimen of the thing that it is. (The term was first coined by the mediaeval philosopher/theologian Johannes Duns Scotus [c.1266-1308].)

[22] Plutarch [c. 45-120 CE]: Vita Thesei (75AD) tr. John Dryden, pp.22-23 (Internet Classics Archive: <http://classics.mit.edu/Plutarch/theseus.html>).

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[24] Thomas Hobbes: “Of Identity and Difference”, in De Corpore (1655) Pt 2, Ch. 11; as reprinted in Body, Man, and Citizen, Richard S. Peters, ed., (New York: Collier Books, 1962) p.128.

[25] Mereology [Gk: meros, mereo- = part + -logia = study, science] – the study of the relationship of part to whole. (Simon Blackburn: Oxford Dictionary of Philosophy, 1996)

[26] From the Greek: sMros = heap, sMreit s = in heaps. The original conundrum raises the difficulty of determining the minimum number of grains in a “heap” of sand.

[27] G. Klempner: http://tentativeanswers.blogspot.com/2009/09/wiggins-on-ship-of-theseus.html

[28] Many would argue that the waves are actual, physical beables, but they are not “beables” as that term is defined here. The waves at Bondi have no independent existence qua waves; their existence is contingent upon the presence (existence) of water.

[29] It is this kind of distinction that prompted Heraclitus of Ephesus [c. 535-475 BCE] to observe that “On those who enter the same rivers, ever different waters flow.” (Fragment DK B12, tr. Jonathan Barnes). This is often translated more loosely as “one cannot step into the same river twice”.

[30] Quiddity [L: quidditas = whatness, quid = what] – a thing’s ‘essence’; i.e., literally its “whatness”, or “what it is”. It refers to the properties that a particular substance or substantial entity (e.g., a lump of rock, or even a person) shares with others of its kind.

[31] John Stewart Bell [1928-1990]: The Theory of Local Beables (Geneva: CERN, 1975), pp.1-2

[32] A. J. Ayer [1910-1989]: Philosophical Essays (1953), (London: Macmillan, 1965) p.232-3.