Takashi Yagisawa’s recent book *Worlds and Individuals, Possible and Otherwise* (Oxford: Oxford University Press, 2010) is an ambitious and systematic work that aims to offer a comprehensive and original understanding of modality. The book does indeed succeed on both fronts. Yagisawa’s stand on modality is, to the best of my knowledge, original, and the book contributes to many contemporary modality-related debates in metaphysics, like fiction, belief and belief reports, vagueness, counterfactuals, and, of course, time and modality.

In this short piece, I cannot render full justice to the complexity and the many interesting ramifications of Yagisawa’s views. In what follows, I focus instead on what I take to be the overall structure of Yagisawa’s understanding of modality and time, aiming to identify the driving force behind it. Naturally, my comments will revolve around the following three topics: (i) possible worlds as modal indices; (ii) transworld identity; and (iii) Yagisawa’s claim that existence, unlike reality, is relative.

### 1. Possible Worlds as Indices

At the very beginning of *Worlds and Individuals* (pp. 1–2), Yagisawa makes it clear that he shares some important intuitions about modality with the actualists, on the one hand, and with David Lewis, on the other. Like Lewis, he aims to reduce modal speech to talk of possible worlds; like the actualists, he believes that there is only one universe.

According to Yagisawa, David Lewis made the mistake of confusing the universe that surrounds us, the big entity that we inhabit, with the actual world. But the actual world is not the universe. All worlds, including the actual one, encapsulate ways of being of this one and only universe. So, like the actualists, Yagisawa claims that worlds are not Lewisian maximal spatiotemporal entities. Yet, he agrees with Lewis that realism about modality requires that we take seriously the reality of other possible worlds as such, that is, as being merely possible and not actual entities. Possible worlds are not some sort of set theoretic constructions out of actual entities.

From the very beginning of the book, Yagisawa is very explicit on the differences between his view and Lewis': “I differ from Lewis significantly on the nature of possible worlds and the extent of the reduction” (p. 5); “Beyond the commitment to the reality of possible worlds, the unity of modal realism disappears” (p. 8). Nonetheless, I must confess that initially I did not take these warnings seriously enough. Perhaps misled by phrases like “Lewis’s version [of modal realism] and the version I prefer” (p. 7), I took Yagisawa as claiming a much stronger affinity to Lewis than he really does. In fact, both are anti-ersatzist and realist about possible worlds. But the affinity ends here. Despite the reduction of modal talk to talk about possible worlds, I believe that Yagisawa’s view is really driven by a fundamental primitivism and antireductionism about modality. It is this primitivism that leads to Yagisawa’s dissatisfaction with both the Lewisian and the actualist views of possible worlds. The actualists reduce the possible to the actual, constructing as they do their ersatz worlds, be they sets or propositions or some other kind of abstract entities, out of actual elements. Lewis reduces the modal space of possible worlds to the nonmodal space of spatiotemporally and causally disconnected universes, which seem totally irrelevant to possibility and necessity. Yagisawa opposes both reductions. Despite Yagisawa’s own claim that he favors some form of reductionism, I will argue that the book is deeply committed to an extreme version of primitivism.

Having seen what the worlds are not for Yagisawa, let us ask what they are. In explaining his own positive view of worlds, Yagisawa makes extensive use of the analogy between time and modality—which ultimately is more than just an analogy—in opposition to Lewis’ conception that relies mainly on the analogy with places (pp. 43–8). The universe, we are told, extends in three distinct metaphysical dimensions: through space, through time, and modally. Each one of these dimensions can have internal subdimensions; space, for example, is at least three-dimensional.

To capture the idea of extension in a metaphysical dimension, Yagisawa introduces metaphysical indices. We are already acquainted with the idea that objects extend in space and time. We can then say that places and times are indices along which objects extend. The dispute between endurantism and perdurantism is, in fact, a disagreement on whether time is a metaphysical dimension through which objects spread. According to endurantists, objects extend only in the spatial dimensions; hence, they are three-dimensional (if space is). According to perdurantists, time is an additional dimension of extension, making objects at least four-dimensional. According to Yagisawa, perdurantists are too conservative, and objects are at least five-dimensional, extending in modal space too. The modal indices through which objects spread are Yagisawa’s possible worlds.

Metaphysical indices—are they places, times, or worlds—are primitive. Worlds, we have already seen, are neither Lewisian nor ersatz worlds. But Yagisawa does not say much about what the worlds are. In fact, indices are not the only primitives Yagisawa endorses. Two more modal primitives are assumed, as illustrated in the following diagram, where I have also added the corresponding primitives for each dimension of reality, though the “no-when” and “no-where” may be stretching the analogy too far.
Indices

<table>
<thead>
<tr>
<th>Modality:</th>
<th>worlds</th>
<th>actuality</th>
<th>impossibility</th>
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<td>Time:</td>
<td>times</td>
<td>presentness</td>
<td>“no-when”</td>
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<tr>
<td>Space:</td>
<td>places</td>
<td>herenity</td>
<td>“no-where”</td>
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The unusual terms “no-when” and “no-where,” rather than “at no time” and “in no place,” are chosen on purpose. Yagisawa takes impossible worlds to be real too. Similarly, I mean to evoke the possibly unintelligible idea of real times and places that are nonetheless in some sense time-wise and space-wise incoherent, respectively.

The addition of the primitive notion of impossibility (or possibility) shows that Yagisawa’s worlds per se are not what modality is reduced too. Worlds as primitives are needed not to account for possibility like in Lewis, but rather for co-possibility: worlds group together corealized possibles.

Naturally, despite their irreducible status, some clarification of the nature of metaphysical indices, in general, and of possible worlds, in particular, can still be offered. Let us then ask the following two questions: (i) which kind of entity is a metaphysical index and (ii) which kind of entity is a modal index? That is, what distinguishes modal indices from temporal and spatial ones, and these last two from each other?

Addressing these questions, we find passages like the following:

All physical objects are temporal objects; exist at certain times. Times are metaphysical indices responsible for objects being temporal objects; times make objects temporal objects by being such that those objects exist at them. Times are makers of temporal objects, they are not temporal objects themselves. It is improper to say of a time that it exists at a time. (p. 52)

I assume that we can similarly speculate about the other metaphysical indices. If we modify Yagisawa’s words to adapt his remarks to places and worlds, we obtain the following two passages:

All physical objects are spatial objects; exist at certain spaces. Spaces are metaphysical indices responsible for objects being spatial objects; spaces make objects spatial objects by being such that those objects exist at them. Spaces are makers of spatial objects; they are not spatial objects themselves. It is improper to say of a space that it exists at a space.

All physical objects are modal objects; exist at certain worlds. Worlds are metaphysical indices responsible for objects being modal objects; worlds make objects modal objects by being such that those objects exist at them. Worlds are makers of modal objects; they are not modal objects themselves. It is improper to say of a world that it exists at a world.

I imagine, though I am not sure, that it is improper to say of any metaphysical index that it exists at any other metaphysical index. So it is not only improper to say that a time exists at a time, but also that a time exists at a place or at a world, and so on for the other indices.
Notice, however, that if we did not already have an independent idea of what we mean by time, space, and possibility, the explanations above would not help us at all to differentiate between these three distinct metaphysical dimensions. Passages like these do not tell anything specific about time, space, or possibility, confirming once again—if needed—the primitivism to which Yagisawa is committed. These remarks do, however, elucidate somewhat the nature of metaphysical indices in general, thus addressing our first question. We are told that the indices make the objects be temporal, spatial, or modal. Thus, the indices are metaphysically basic in creating the modal, temporal, and spatial aspects of reality. So the temporality of a temporal object consists in its being extended through times, not vice versa. Similarly, for an object to be spatial is to exist in places; and for an object to be modal (contingent, impossible, or necessary) is to exist at worlds. This means that indices are not invoked simply to represent the intrinsic spatial, temporal, and modal nature of reality. Quite the contrary, they are the makers of these aspects of reality. This, I conjecture, is what Yagisawa meant when he warned us that he is, in some sense, a reductionist about modality (and, I would add, time, too). He does not, like Lewis, reduce modality to some other nonmodal notion, but he is a serious five+-dimensionalist. Objects do not endure in modal space; they extend through it.

Let us consider the two kinds of positions concerning time and modality that dominate the contemporary debate. On the one hand, reductionists understand time and modality as a stretching of reality along the dimensions of times and worlds. The obvious advantage of reductionism is the elimination of the obscure notion that reality itself, not just speech, is intrinsically tensed and modal. Times and worlds respectively replace such obscure ideas. According to reductionism, reality is inherently tenseless and nonmodal, but it acquires its temporal and modal aspects in virtue of spreading through the relevant dimensions in the same way in which reality is spatial in virtue of extending through space. Reductionists are happy to exchange the obscure, intensional modes for the adoption of clear, extensional entities like times and worlds. The champion of reductionism is David Lewis.

On the other hand, primitivists, Arthur Prior in primis, claim to understand the modes better than the entities and embrace a tensed and modal universe. Yagisawa is not a primitivist in this sense. For example, he is critical of McGinn’s rejection of modal properties and endorsement of different modes of possessing nonmodal properties. Yagisawa claims not to understand why according to McGinn, “the instantiation itself is always necessary or contingent” (p. 79). Basically, Yagisawa seems to be rejecting the idea that we ought to get rid of special entities, be they modal properties or worlds, and endorse modes of instantiation in their place. So obscure are modes to him that he suggests they are just some more abstract objects (p. 80). When instead, the advantage of primitivism is, first and foremost, ontological parsimony.

3. Five+ (rather than Five) to leave open the possibility that modal reality, like space and apparently unlike time, be structured in subdimensions.
So like standard reductionists, Yagisawa eliminates the obscure modes. In their place, he puts times and worlds. Yet, he wants to avoid any further reductionism beyond this commitment. Hence, times and worlds are not explic- cated as anything other than whatever gives reality its temporal or modal dimensions. The purpose of this mixed view seems to be to partake in the advantages of both primitivism (if not ontological parsimony, at least the benefit of calling things by their name) and of modal realism (lack of obscurity). However, I am afraid that Yagisawa’s mixed position ends up partaking instead in the disadvantages of both views. Yagisawa’s worlds and times remain primitive and as such obscure, though perhaps less obscure than modes and tenses. This is particularly clear in the case of worlds, but at least Prior, if no one else, would have insisted that times are equally mysterious and mythical. Moreover, the mystery is not compensated by ontological economy.

In proposing this mixed interpretation of time and modality, the book displays a “double soul.” We find in it a courageous attempt to reconcile the best sides of two apparently incompatible positions. Whether it succeeds in doing so, I have some doubts. Metaphysical indices are meant to provide a nonreductive, *primitive*, yet clear and *formally well-structured* account of modality. Personally, I am happy with Yagisawa’s indices as *formal* devices designed to provide a formal semantics for modal and temporal discourse, but I doubt that they are metaphysically explanatory.6

If I may offer a diagnosis, I think that Yagisawa’s optimism on the metaphysical prospects of his view is due to his taking the temporal case as central. In the temporal case, very few feel uneasy about times as entities. We all seem to know what we are talking about when we appeal to times. Naturally so, given that times appear already in our pretheoretical ontology. Driven by the apparent ontological clarity of times, Yagisawa aims to make the worlds clear by analogy. In my view instead, despite their commonsensical currency, times are as mysterious as worlds. And if not so, that only goes to spoil the analogy—an analogy that is, first and foremost, driven by technical considerations. It is well-known that temporal and modal logics are structurally similar. Yet, structural similarity is just that. It need not speak of metaphysical affinity. Also, the entities invoked by the logic need not be taken with great metaphysical seriousness—to echo Prior’s words.7

One other aspect of the book’s “double soul” is encapsulated in the appeal to the extra primitives of actuality, presentness, and hereness. Traditional analyses of modality in terms of worlds and of temporality in terms of times aim to dispense not only with modality and tense (which we have already seen Yagisawa does not eliminate), but also with actuality and presentness. Actuality and presentness, if left unanalyzed, seem to imply that reality itself (not just talk about it) is “indexical,” in the sense that there is a privileged part of reality that is present or actual. In the case of space, the paradigm of extensionality, we find no obvious room for the notion of hereness, exactly because all there is to the spatial nature of the universe is its being extended through space. In this

6. In this I follow Prior, op. cit.
7. Prior, ibid., p. 75.
perspective, there is no space for an ontologically privileged here. To be here is nothing beyond being in this place, the one we occupy. The indexicality is only linguistic. Very roughly, when I say “I am here,” I say something like “I am in this place,” but to be so singled out, a place need not be in any way metaphysically privileged. Yet, Yagisawa makes no use of worlds and times to reduce the mysterious, metaphysical privilege of the present and the actual. Despite the availability of times and worlds, Yagisawa does not think that being present or actual consists simply in something like being at this time and at this world; nor does he use places to eliminate metaphysical hereness.\(^8\)

It seems then that Yagisawa endorses both an irreducible notion of possibility or impossibility and of actuality. His distinction from classical primitivism resides in his extra assumption of worlds. Worlds are needed to give an adequate, formal semantics for modal discourse. Yagisawa is metaphysically very serious. Against Lewis, he does not rest satisfied with the metaphysical elimination of the possible and the actual. Against Prior, he does not rest content with logical fictions. If we appeal to worlds to systematize our modal talk, to the reality of worlds we are indeed committed. Similarly for times.

### 2. Transworld Identity

The discussion of transworld identity is another part of the book where Yagisawa’s disregard for ontological parsimony emerges. In chapter 6, Yagisawa proposes a solution to the problem of transworld identity. He recognizes that his version of the problem is not exactly Lewis’. According to Lewis, no individual exists in more than one world. Therefore, to account for \textit{de re} modality, Lewis introduces a similarity-based, counterpart relation. What it is for \textit{me} to possibly \(\Phi\) is to have a counterpart in another world that \(\Phi\)’s in that world. Yagisawa’s individuals, on the other hand, are not world-bound. But which kind of individuals are they? To answer this question, let me quote Yagisawa’s remarks at the very opening of the book, where he marks himself apart from both the actualists and Lewis:

> At the same time, I am not sympathetic to Lewis on other scores. Lewis equates the actual world with the universe as it actually is. This blurs the distinction between the universe and the worlds. I consider the distinction to be at the heart of the realist view of alethic modality which I prefer. According to this view, there is only one universe and that universe could be any number of ways, and it is one way at one possible world, another way at another possible world, yet another way at another possible world, and so on. If we take this idea literally and robustly realistically, we should be dissatisfied with Lewis’s view, according to which there are many universes and each one of them is a possible world. (p. 2)

Personally, I would have thought that if we take literally and robustly realistically the idea that there is only one universe, and in it only one Humphrey and

\(^8\) See Yagisawa, ibid., 149–51.

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only one Nixon and so on, we can simply reject the problem of transworld identity as spurious. This is what it means to start with only one universe. It means to start with the problem of identity as solved. If we take seriously the idea that the worlds are just ways in which the one and only universe is, we have no problem of identity across ways, because it is given to start with that those are the ways of one and the same universe (similarly for particular individuals). This corresponds to endurantism through time, where it is assumed that it is the same object that is totally present at each time of its existence. Though, of course, having started with the identity fixed, it remains to be explained how the same individual may bear incompatible properties at different times or worlds.

Yet, according to Yagisawa, the worlds are not just the ways in which the universe is. We are told that the universe “is one way at one possible world, another way at another possible world,” and so on. Worlds, then, are the metaphysical loci at which the universe is the ways it can or cannot be. In fact, chapter 6 starts with the intriguing proposal of extending Heller’s four-dimensionalism to modal space too. According to Heller, objects perdure through time similarly to how they extend through space, by having parts that are located at different times. Yet, Heller rejects the idea that objects are also similarly modally extended. Yagisawa proposes instead that objects have five dimensions. According to him, objects are not world-bound, like for Lewis, nor are they totally present in each world they inhabit. Objects, instead, have (different) parts in different worlds related by a complex similarity relation.

It seems to me that once again Yagisawa aims to gain from both Lewis and the actualists. He wants reality to be less parochial than actuality. Yet he does not want distinct universes. The result, however, is a view saddled with problems from both directions. Worlds are taken seriously enough (they are not just ways) to create a problem of transworld identity. Yet, they are not taken as seriously as it is needed to eliminate the mysterious modal ways of the universe, since in this view, worlds are just the metaphysical “places” for these ways to be at.

3. Reality and Existence

Let us finally consider Yagisawa’s distinction between reality and existence and the thesis that existence is a relation. We are told, “I regard existence and reality as two separate non-equivalent notions. They do not share even the same adicity: existence is dyadic but reality is monadic” (p. 54). I find it irresistible to echo Quine and state that Yagisawa is contributing to the ruin of the good old sense of the word “exists.” Words apart, Yagisawa’s proposal is worth exploring.

9. Recall the admission of impossible worlds.
11. See Yagisawa, ibid., p. 105.
If I understand the view, the idea is that everything is real, including the notorious unicorns. The difference between actual, possible, and impossible entities is not a difference in reality. On the other hand, it makes no good sense to say that everything exists. Existence in this view is not an absolute property but a relation. It is, first and foremost, a relation to a metaphysical index, but secondarily, also to a domain. Ordinary things exist both at indices and relatively to domains. Worlds and other metaphysical indices instead exist only vis-à-vis some domains, but not relatively to indices (recall that “[i]t is improper to say of a time that it exists at a time”).

The resulting theory of existence strikes me as lacking real unification. The restriction of existence relatively to indices is, so to speak, a much more serious metaphysical commitment than the corresponding restriction to domains. Taken seriously, the relativization of existence to indices amounts to the view that existence is fundamentally a spatiotemporal and modal affair (I am bracketing aside the possibility that some things may exist at some but not all indices). That is, there is no property of existence logically prior to, for example, temporal extension. To exist is then nothing over and above being in time. But then, the sense in which ordinary things exist is radically different from the sense in which places, times, and worlds exist. This amounts to no univocal view of existence. And it cannot be replied that most philosophers believe that some things exist in space and/or time, and other things out of space and/or time in the same single unified sense of existence. Traditional views do not advocate existence as a relation to space, times, and worlds. So even the existence of those things that necessarily exist in space and time is logically prior to spatiotemporal location. For Yagisawa, instead, for spatiotemporal objects existence is nothing over and above spatiotemporal location.

Indices, on the other hand, do not enjoy this relation; hence, they do not exist in the same sense in which ordinary things do. There are cases in which the same relation can be enjoyed with very different sorts of relata. It is perhaps the same kind of love that binds us to people and to philosophy. Surely, the same set membership relation collects abstract entities, on the one hand, and concrete ones, on the other. Yet, unless Yagisawa gives up the great metaphysical seriousness with which he takes places, times, and worlds as the makers of the spatio–temporal–modal aspect of entities, existence as space–time–world location versus existence as set membership—this is what existence relative to a domain amounts to—are bound to be very different relations. If this equivocal theory of existence is not welcome, Yagisawa must choose between the following two options: (i) give up modal realism, thus letting indices be just useful set-theoretic constructions, and existence as a relation to them nothing over and above set-membership; or (ii) give up the theory that existence is relative.

Finally, I must also admit that I do not understand Yagisawa’s theory of domain-relative existence. I understand the semantic proposal that quantifiers, or even the English verb “exist,” are always interpreted as domain relative. What I do not understand is the metaphysical thesis of domain-relative existence.

This is related to my puzzlement with Yagisawa’s view of domains:
Sometime it is said that the domain is the totality of what is being talked about, or is under discussion. I emphatically reject this. When we say under normal circumstances that talking donkeys do not exist, talking donkeys are under discussion and the domain for “exist” includes only actual objects, none of which are talking donkeys. (p. 52)

And at the end of the book:

It is customary to say that the domain of discourse is the totality of things under discussion or things talked about. This is a mistake . . . The domain is the totality, the collection, of things over which variables range. The collection of things over which variables range may or may not be the totality of things under discussion. With a chicken bone in hand, you look around in the kitchen and say, “There is no trash container.” You are speaking of trash containers and saying that none of them is in the kitchen. Trash containers are under discussion. The collection of things in the kitchen is the domain. If your utterance is true in the context, trash containers are not among the members of the domain. (p. 293)

I would have thought that the domain of discourse is by definition the totality of things under discussion. Assuming that the context determines the relevant domain, when, standing in the kitchen, you say that there is no trash container, you are saying that none of the things (in the kitchen) is a trash container, symbolized as \( \neg(\exists x)(Kx \land Cx) \). Similarly, when you say that Socrates does not exist, you are saying that none of the present things is identical to Socrates, that is, \( \neg(\exists x)(x = s) \). And when you say that talking donkeys do not exist, you are saying that none of the actual things is a talking donkey, that is, \( \neg(\exists x)(Tx \land Dx) \).

In this perspective, what you are talking about are indeed the things in the domain, though it must be admitted that you do not talk of trash containers, Socrates, and talking donkeys when you deny their existence.

Alternatively, we may insist with Yagisawa that when we deny the existence of Socrates or of talking donkeys, we are indeed talking of that wise man and those gifted donkeys. But then, since we are talking of them, they are obviously members of the domain of discourse. Then the standard thing to say is that the existential quantifier “exists” does not signify existence anymore but just inclusion in the domain. Once nonexistent things are included in the domain and talked about, we need to add a first order predicate of existence “E” to be able to say that some things in the domain do not exist, thus symbolizing, for example, the nonexistence of talking donkeys in this way: \( (\exists y)(Tx \land Dx \land \neg Ex) \). In both perspectives, there is no separation to be drawn between the things under discussion and the domain of quantification.

Yagisawa instead detaches the collection of things over which the variables range (the domain of quantification, viz. the traditional domain of discourse) from the totality of things under discussion. This surprising view is the natural result of his thesis that existence is a relation either to an index or to a domain. Existence as a relation to a domain is nothing other than set membership: “\( x \) exists relatively to a domain D iff \( x \) is in D” (p. 51). Given this background
assumption, we can symbolize “Socrates does not exist” simply as $\neg(\exists x)(x = s)$ with no additional first-order predicate of existence and maintain that we are referring to Socrates and denying that he is a member of the set over which the variable range, that is, he does not exist vis-à-vis that domain. If existence is just set membership, then of course it is set relative!

In conclusion, Yagisawa’s *Worlds and Individuals, Possible and Otherwise* presents a coherent metaphysical picture that brings to its extreme conclusions the alluring idea that we ought to pay in heavy ontological coinage all the notions we intuitively endorse and all the formal tools we employ. If we do not like the results, we must honestly admit that we do not take with great metaphysical seriousness all our modes of speech, thus frankly admitting our metaphysical biases. Concerning existence, I would have preferred that the term be used for all that is real, and that set membership and spatio–temporal–modal extension be called by their names, thus avoiding to engender an illusion of unification.