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## Possible and Impossible Worlds

Actually, things are a certain way. But still there are plenty of ways in which they could have been different. For example, I could have had a dog rather than a cat, Ernie—the gingerbread man I just baked—could have had blue icing pants instead of red ones and my father could have been an engineer. Possibilities are states of affairs which we think could have been actually the case. They are expressed as modal statements like the above. But what does it mean that gingerbread man Ernie could possibly have had pants made of blue icing?

When we imagine the world as it could have been other than it is, logical possibility calls for a metaphysical account of what is going on. David Lewis [3] famously analyzed our everyday talk about “ways things could have been” as *possible worlds*.

Once we paraphrase possibility-talk as possible-worlds-talk—which is, e.g. in Ernie’s case, to say that there is a possible world in which he has blue pants—we have to give an account for (1) what possible worlds are (generally) and (2) what the actual world is (in particular). The remainder of this essay shall be devoted to answering both these questions. I shall start out by introducing two common accounts on what possible worlds are—one being Lewis’ famous counterpart theory as the example par excellence for genuine realism, the other being actualist realism.<sup>1</sup> I will then (in section 2) come to introduce my own view on possible worlds. As it will turn out, my suggestion is a modification of Lewis’ view that appears to fall rather in the actualist realist camp. Put into a nutshell, I propose that possible worlds are of a genuine ontological kind. They are *cases* of our own world, ways in which it could have been if certain interventions or manipulations would have taken place.

I do not claim the presentation here to be a fully elaborated account whatsoever; but I shall sketch how my considerations give us a good start in thinking about possibility differently from the way it is standardly done. I shall, however, also point to some problems that need to be resolved with what I am going to call the *world-case view* at it is being worked out more completely.

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<sup>1</sup>The distinction I am making is according to Divers [2].

## 1 Standard Pictures

Two dominant conceptions of possible worlds bestride contemporary debates: genuine and actualist realism. The major point of divorce between the two camps is that genuine realism assumes possible worlds to actually exist beyond our own universe<sup>2</sup> whereas actualist realism denies that. Our world is privileged in that it is the only concrete, actualized world there is.

The perhaps best known proponent of the former view is David Lewis. In “Possible Worlds” he puts forward an argument for possible worlds being really *out there*. The clue of his argument is this: he takes ordinary possibility-talk to allow for paraphrases which he, in turn, takes to be *existential quantifications*. Thereby Lewis arrives at the conclusion that “ways things could have been” do actually exist; he calls them possible worlds. These (or more concretely the objects they contain) are related through a *counterpart relation* which is based on overall comparative similarity between the related objects.

If, for example, it is the case that Ernie could have had blue pants, then there is a way his pants might have been blue. Since we ordinarily agree that it is possible that Ernie could have had blue pants, there must be a way in which Ernie’s pants might have been blue. We can paraphrase this in saying that *there is* a way Ernie’s pants might have been. Therefore, following Lewis’ argument, we arrive at the claim that a way Ernie’s pants could have been blue does exist, since the previous sentence is an existential quantification. This way of Ernie’s pants being blue can be called a possible world.<sup>3</sup> Ernie at the actual world has a counterpart in that world, and this counterpart of him does have blue pants.

Such possible worlds, according to Lewis, are concrete other universes spatiotemporally and causally isolated from ours. The actual world  $\alpha$ , our world, is in no way privileged over all those other possible worlds. Our referring to it with the *indexical* “actual” is a purely linguistic phenomenon comparable to “here” and “now”.

I am, however, inclined to not accept Lewis’ argument for I think it proves too much. If talk about ways things could have been can be taken as an existential quantification, the analogous claim should hold for ways things could *not* have been. If Ernie could not have been made of shortcrust (because then he would not have been a gingerbread man),

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<sup>2</sup>In the context of this discussion, the notion of a world should be considered as meaning something like universe rather than planet earth.

<sup>3</sup>Note that this illustrative example can be run generally for every possibility we can imagine.

there is a way in which Ernie could not have been. Since this is as well an existential quantification as the claim that there is a way in which Ernie could have had blue pants, does this mean that there is an impossible world in which Ernie is made of shortcrust? Once we assume possibilities to translate into entities, their negations, impossibilities, should do the same. But if so and if possible worlds are universes like ours, what can an impossible world be like? Maybe we should imagine it as a black whole. As such, however, it does clearly not resemble our actual world in kind. As these considerations point out, there is an apparent problem with Lewis' account.

For now, let us turn to the second dominant view on the nature of possible worlds. Actualist realists agree with Lewis in so far, as they also claim there to be ways things could have been. However, for them these things take metaphysically a different form. According to their view, possible worlds are, unlike  $\alpha$ , *maximally consistent representations* of how our world could possibly have been (constructions Lewis calls *ersatz possible worlds* [4]). Our world is privileged since it is the only actualized, i.e. concrete, universe. Meanwhile, all other possible worlds are abstract, unactualized objects.<sup>4</sup>

Though collected under a single label, different actualist realists employ different kinds of items to figure in their maximally consistent representations. Famous proponents are, for example, Alvin Plantinga [5] who regards possible worlds as unactualized states of affairs, Robert Adams [1] who takes them to be sets of sentences (or stories) and Robert Stalnacker [6] for whom possible worlds are indeed states of affairs but as such they are not worlds for “[t]he way things are is a property or a state of the world, not the world itself.” ([6], p. 68; his emphasis) However, I take it to be too weak an account for possible worlds to be reducible to other entities.

Once again, the point that distinguishes Lewis and, e.g., Stalnacker as proponents of genuine and actualist realism, respectively, is the nature of which they take possible worlds to be. This takes us back to our initial questions of (1) what possible worlds are (generally) and (2) what the actual world is (in particular). We have seen that Lewis would answer these questions by saying that possible worlds are worlds just like ours where our world is simply the one universe we happen to inhabit. Stalnacker, on the other hand, would say (1) that possible worlds are uninstantiated properties from which

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<sup>4</sup>Note that abstract existence still is proper existence that has to be sharply distinguished from existence according to a fiction. There are, however, proponents of the view that possible worlds are fictional objects; but I shall not consider them here.

(2) the actual world is distinct since it is the only actualized, concrete universe.

As this brief survey shows, plenty of ideas have been employed to provide a metaphysical basis for ordinary modal claims. I shall now come to outline my own view on this matter.

## 2 Tracking Causal Traces: The World-Case View

I agree that things could have been different, maybe even in countless ways. But more than that, I think if things would have been different, there would have had to be a reason for them to be so. For instance, my pet could have been a dog rather than a cat because I could have been allergic to cats and was therefore given a dog; Ernie could have had blue pants, maybe because I added a different color when mixing the icing; and my father could have been an engineer if he had attended engineering school.

My view is that any state of affairs—including the way the world actually is and the many ways it could have been—is brought about by certain causal events, i.e. manipulations and interventions being applied to another (previous) state of affairs.<sup>5</sup> Hence, what makes it the case that  $\alpha$  is the way it is rather than another way it could possibly have been is a combination of a particular set of causal events that have taken place. Had certain interventions been carried out or other manipulations been applied than actually were,  $\alpha$  would have been different from the way it actually is. Had I made blue icing instead of red and still used it to decorate Ernie, he would have had blue pants (where my making colored icing caused to color of Ernie's pants).

I might follow Lewis in calling the ways things could have been “possible worlds” though a more appropriate name would be “world cases” (hence the name “world-case view”). Unlike Lewis, for the reasons given in section 1, I do not claim these ways things could have been to genuinely exist beyond our own universe while resembling it in kind. Though, I do—like Lewis—see possible worlds as “respectable entities in their own right” ([3], p. 161). But unlike him, I am not qualitatively parsimonious<sup>6</sup> for I think his mere

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<sup>5</sup>By “states of affairs” I mean a possible way in which  $\alpha$  could have been.

<sup>6</sup>Lewis distinguishes between two types of ontological parsimony: qualitative parsimony tries to keep down the number of kinds in our ontology while quantitative parsimony aims at keeping down the number of instances of the kinds it posits. Seven cookies, for example, can be considered qualitatively parsimonious if they are all of the same kind. If it are seven different cookies, on the other hand, the set can be considered quantitatively parsimonious since there is only one cookie of each kind.

suspicion that it is a good “philosophical or empirical hypothesis” ([3], p. 163) to be so may well be misguided. My reason is this: I can see how it makes sense to use the kinds of entities our ontology already provides and let them figure in additional roles simply because we know what they are, i.e. we have a metaphorical “grip” on them. But I also have the strong intuition—though, admittedly, this is no more than struggling about opposing intuitions—that actual worlds do not do the trick when it comes to claims about non-actual states of affairs. It is simply too crucial a property of our world to be actual, it is more than just being the world we happen to inhabit.

Instead, I suggest possible worlds to be worlds pretty much like ours, except for one crucial property: they are *non-actualized*. They exist out there, but their existence is shadow-like. They are non-actual cases, slight variations of  $\alpha$  that are not but could (given an appropriate causal history) have been the case. What is more, there are not only possible cases that are modifications of the way our world presently is but also variations for past and future; the real past and future of  $\alpha$  being among them.<sup>7</sup> They might be seen as “abstract” entities (in which point I agree with actualist realism) since no human being will or has ever seen them; but it shall be emphasized that they do belong to a new ontological category that is not reducible to and cannot be analyzed in terms of sentences, properties or any other ontological category (which is where I disagree with actualist realism).

Imagining a whole lot of possible states of affairs provides us with plenty of these shadow-worlds or world cases for any possible way things could have been translates into one such entity. But where exactly are they to be found? I suggest that logical space is occupied by a network of causal traces along which they are positioned.<sup>8</sup>

The idea calls for clarification. In the beginning of this section, I outlined that if things had been different than they actually are there would have had to be a reason for them to be so—something must have caused the actual state of affairs rather than another possible state which would have had been caused by something else. Every such causal event can be imagined as exhibiting a trace; it is a node within the network occupying logical space; from any such node connections (i.e. causal traces) set out building up the net. But how, one might ask, does such a network come about? Where do the events

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<sup>7</sup>The underlying conception of persistence through time here is *perdurantism*, i.e. the view that objects consist of temporal parts (or slices) having the properties of a part  $i$  at each time  $t_i$ . World cases hence can—but must not be—temporal slices of the the actual world.

<sup>8</sup>Though, not exclusively so. I will return to this point in the final section.

come from and where are the traces going?

Each causal trace begins with a manipulation or intervention and extends into infinity. Traces may contain further events somewhere on their bodies. In this case, traces might split or end. Of course, causal traces might also meet (otherwise it would not be a network) which can be thought of as a further event in its own right and can hence be the starting point for additional causal traces. When they meet, causal traces can also fuse or be blocked off. The network becomes increasingly complex as time proceeds. But there is a way for causal traces to go out of existence at some point, though, I can not yet give a specification of how exactly this is supposed to happen.

An immediate follow up might be the question about the very first causes for they are necessary to get the network going. It is not my project to speculate about our universe's genesis, but I take its coming into existence to be the first event. Big Bang might have been the starting point for our network. Still, in order to allow for further events to take place, we need at least one more initial event. However, since we can (and do) come up with plenty of causal stories leading to states of affairs slightly different from  $\alpha$ , I take it to be the case that the network has been sufficiently developed since. I shall leave the beginning of the story to be worked out by physicists.

So far, we got an increasingly complex network of causal traces occupying logical space. It might have started from a single strand, similar to the trunk of a tree. As we move up toward the crown we first encounter only a few branches, these split up more and more before, high up in the crown, we find a net of overlapping twigs and sprigs.<sup>9</sup> But what does this tell us about possible worlds? I proposed above that ways things might have been are possible worlds (or, more precisely, cases of  $\alpha$ ). And if things would have been different, there would have had to be a reason for them to be so. These *reasons* take the form of manipulations and interventions, i.e. causal events. Further, it was said that possible worlds are worlds similar to ours, except for them being non-actual where actuality is not merely indexical (as on Lewis' view) but amounts to ontological distinctiveness. Possible worlds, as opposed to the actual world, exist only shadow-like. They "populate" the causal traces that compose the network just described. They would be instantiated, i.e. actualized, if certain causal events had taken place rather than

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<sup>9</sup>Admittedly, the tree is not a perfect image. Unlike a network, it does not have any fusing twigs or branches connecting back to others. However, it beautifully illustrates increasing complexity with a rising number of traces and nodes.

others.

Though the case-framework appears complicated at first sight, it is really very simple. We can describe any arbitrary possible world  $\omega$  as  $\alpha$  plus a set of manipulations and interventions  $\Delta$ . Though I cannot give a precise definition of what the elements of  $\Delta$  look like, they do specify what interventions and manipulations will, must or would have had to be carried out to transform  $\alpha$  into  $\omega$ . Putting this into a picture might serve for illustration: we can think about the causal traces as streets in a city and take the nodes of the network to be their crossings. The actual world  $\alpha$  corresponds to our current position in the city,  $\omega$  is our destination.  $\Delta$  then contains the *directions* that we need to follow to arrive at  $\omega$  starting from  $\alpha$ . The interventions and manipulations applied to  $\alpha$  correspond to the turns we take on our way.

Back to Ernie's case, we might take  $\omega$  to be the possible world in which the ginger-bread man has blue pants and  $\alpha$  the world in which his pants are red.  $\Delta$  would perhaps only contain a single element: me adding blue color (instead of red) to the powdered sugar and eggs when mixing the icing.

In summary—and with regard to our initial questions of (1) what possible worlds are (generally) and (2) what the actual world is (in particular)—we might now conclude the following: (1) possible worlds are shadow-like existing cases—something would have had to be different to make them the actually be the case—of the actual world that populate logical space; and (2) the actual world is the way things are where nothing has had to be different;  $\alpha$  is ontologically distinct from possible worlds.

### **3 Good News, Bad News**

In the previous section I introduced the world-case view as a new account of possible worlds. As it turned out, my conception contrasts with both genuine realism (in that it takes possible worlds to be ontologically distinct from  $\alpha$ ) and actualist realism (in that possible worlds are not reducible to any other ontological category).

Still, it might be seen as a modification of Lewis' view that happens to fall into the actualist realist camp (since I take possible worlds to be ontologically irreducible but nevertheless abstract entities). I propose that *world cases* existing shadow-like beyond the actual universe capture our ordinary talk about possible world. They bear general similarity to the actual world but are fundamentally un-actualized, abstract entities.

Possible worlds, or world cases,  $\omega$  populate the casual traces occupying logical space and can be picked out by specifying a set of causal events that would have had to, must or will have to take place in order to arrive—starting from  $\alpha$ —at  $\omega$ . But why should one adopt this view?

First, and maybe most saliently, the new view can account for *impossible worlds*. Impossible worlds are ways things could not have been, i.e. cases that could not have obtained, that are impossible (like, e.g., Ernie being made of shortcrust). Such world cases can be seen as blank spots in the network of causal traces. Blank, only as far as traces are concerned for we still find world cases here that are ontologically *en par* with possible world cases. What distinguishes possible from impossible worlds is simply that impossible worlds are isolated; there exists no way of causal manipulation and intervention (past, current or future) to get to their spots. Note that this is not a claim about epistemology. It might be that there are causal traces that we do not yet know or that we falsely assume there to be a trace leading to a certain state of affairs which is actually isolated.

Second, the new framework can offer a precise account for future possibilities that exactly follows along the lines of past or current possibility. Analogously to Ernie who could have had blue pants, I can now bake another gingerbread man or I can bake a gingerbread woman. Depending on what I decide to do, there will be a twosome of gingerbread men or a pair of gingerbread twins. In either case, the world, say, in two hours could have been different (Ernie could have had a twin rather than a wife or vice versa). My claim here is not that the standard views cannot account for future possibility. Rather, I want to stress that my treatment of possible worlds matches up with the way usually talk and think about the future (and the past): we consider the current way things are and try—by application of appropriate manipulations and interventions—to achieve a desired future state. This is exactly how possible worlds are picked out according to the world-case view: take the way it is and tell me what to do (earlier, now or later) to make it be another way.

Despite all the glory, every new approach comes of course with its problems. In due course I mentioned various points at which the new view is hitherto incomplete. Questions like “How do the first causal events come about?” and “What makes a causal trace go out of existence?” remain to be answered. Further, a specification of what the elements of  $\Delta$  are going to look like will be of crucial importance. It might not be too easy

to give an account that is neither circular, nor enters into an infinite regress. But I am positive that a reasonable specification can be given without making the world-case view inconsistent. Especially, since  $\Delta$  is strikingly similar to a sequence of directions which we are used to deal with in everyday life.

Taken together, I do not claim the account presented here to be exhaustive. Rather, it will need to be refined and more fully worked out. However, I think these considerations provide a good start for thinking about possible worlds as cases of the actual world  $\alpha$ . And, to borrow the words of a well known philosopher, it is good to know that we are unlikely to run out of work.

## References

- [1] Adams, R. (1974). Theories of actuality. *Noûs*, 8 (2), 211-231.
- [2] Divers, J. (2002). *Possible Worlds*. London and New York: Routledge.
- [3] Lewis, D. (1973). Possible Worlds. In: Counterfactuals. Cambridge, MA: Harvard University Press. Reprinted in: M. Loux, ed. *Metaphysics: Contemporary Readings* (2001). London and New York: Routledge, 160-167.
- [4] Lewis, D. (2001). Counterparts or double lives? In: M. Loux, ed. *Metaphysics: Contemporary Readings*. London and New York: Routledge, 188-217.
- [5] Plantinga, A. (1982 [1974]). *The Nature of Necessity*. Hong Kong: Oxford University Press.
- [6] Stalnacker, R.C. (1976). Possible Worlds. *Noûs*, 10 (1), 65-75.