INTRINSIC VALUE AND THE LAST LAST MAN

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Abstract

Even if you were the last person on Earth, you should not cut down all the trees—or so goes the *Last Man* thought experiment, which has been taken to show that nature has intrinsic value. But 'Last Man' is caught on a dilemma. If Last Man is too far *inside* the anthropocentric circle, so to speak, his actions cannot be indicative of intrinsic value (a LOCAL problem). If Last Man is cast too far *outside* the anthropocentric circle, though, then value terms lose their cogency (a GLOBAL problem). The experiment must satisfy conditions in a seemingly impossible 'goldilocks' zone. To this end I propose a new version, the *Ultramodal Last Man*, which appeals to Routley's work in metaphysics and non-classical logic. With this 'Last Last Man', I argue that the LOCAL/GLOBAL dilemma is resolved: impossible equations balance in ultramodal space. For defenders and critics alike, this helps to clarify the demands of intrinsic value, and renews a role for non-standard logics in value theory.

1. Introduction: Value at the Limit

'The Last Man'[1] is a dramatic thought experiment proposed by Richard Routley [1973].[2] In the form of a second-personal question:

> **Last Man**
> *If you were the last person on Earth, would it be wrong for you to spend your remaining days going around cutting down all the trees?*

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[1] In deference to established usage, I stick with the gendered 'Last Man', and (mostly) refer to its originator as Routley, who changed his name to Sylvan in 1985 (see Hyde 2014).

[2] Interpreting Routley/Sylvan's thinking about intrinsic value is a detailed scholarship question [Lamb 2011]. The term 'intrinsic' does not appear in the original [Routley 1973]; it only becomes explicit in collaboration with Val Routley [Routleys 1980]; and his views continue to evolve [Sylvan 1986, 1992, Sylvan & Bennett 1994]; cf. footnote 20 below. The terms *non-instrumental* and *intrinsic* value are distinct [O'Neill 1992 p. 119] but are elided in [Routleys 1980]; I will use 'intrinsic' uniformly. In general, the present paper is not intended as a direct contribution to Routley/Sylvan exegesis. I work from, but do not pretend interpretive fidelity to, his ideas. Routley might fairly object to much in this paper as an *ignoratio elenchi*. The hope is to advance a wider discussion.

The prima facie answer is, yes, it would be wrong, albeit for no instrumental reason; and so the preliminary findings are that trees are valuable beyond the ambit of 'human chauvinism' (anthropocentrism). 'Some values ... are non-instrumental or intrinsic. Some values at least must be intrinsic, some objects valuable in themselves and not as means to other ends' [Routleys 1980, p. 152].

To find such values, Routley's method is to take a *limit*—to construct an extreme scenario at the terminal node of a sequence—and then see that the value of nature persists. Most thought experiments are designed to isolate certain intuitions by creating an artificial background. I read 'Last Man' as a striking attempt to show something about the interface between humans and values by *eliminating* the background. That is the way Last Man's actions can impinge on *intrinsic values*—in contrast to 'value as a means'. A rough way to think of this is to follow Moore's 'isolation method' [1903, §15, §119]: an object is intrinsically valuable just in case it would be valuable *even if it were the only object.*[3] The endpoints of chains of instrumental value are the locus of intrinsic value. In a fairly literal-minded way, such an endpoint is just what 'Last Man' describes.

Reconstructing the 'Last Man' as an argument, Petersen and Sandin [2013, p. 124] invoke a bridging principle between wrongness and value, a so-called *Wrongness Value Principle*: If (i) it is wrong to destroy *x*, and (ii) there is no other reason for the wrongness of destroying *x*, then *x* has non-instrumental or intrinsic value (my paraphrase). There is some evidence that Routley accepted such a principle, at least up to a weaker *ceteris paribus* claim: if it is wrong to destroy *x*, then *all else being equal, x* has value.[4] Clause (ii) of the Wrongness Value Principle is stronger; it is for nullifying cases like: it would be wrong to burn a pile of money, but only because money's instrumental value could then

[3]   As per the previous footnote, this is to diverge from Routley, who warns: 'that a value is (reckoned to be) intrinsic does not, however, imply that it is absolute or system independent' [Routleys 1980, p. 152]. Nor, for Routley, does the instrinsic value of something need be sourced in its intrinsic properties [Lamb 2011, section II].

[4]   'The immediate reactions [to Last Man] tend to be in terms of wrongness of what is done... But these judgments ... *normally imply values*. For example, that the Last Person's destruction is wrong is not independent of the value of some of what is destroyed' [Sylvan & Bennett 1994, p. 34, emphasis added]. But this is not yet the Wrongness Value Principle, which I suspect the Routleys would not accept in full [cf. Routleys 1980 p. 149]. I work with the Wrongness Value Principle as an interesting modern reconstruction of a 'Last Man' argument (likely not Routley's preferred one).

bring about some intrinsically valuable good. It also blocks cases like: some endangered birds have built a nest in a concrete ruin, so it would be wrong to destroy the old concrete, but not because it has intrinsic value. By the Wrongness Value Principle, trees have intrinsic value because (i) it is wrong for Last Man to cut them all down, but (ii) the reason for the wrongness cannot, by construction, be coming from anywhere beyond the trees.

There are some notable criticisms around this line of imagining, as we will see. The common thread in all of them is to attempt to re-introduce a background gestalt to 'Last Man', to show that the Last Man is either not alone *enough* to capture intrinsicality, because the morality of his actions is sensitive to changes in context, or else *too* alone to capture anything at all, not to mention anything about value. The aim of this paper is to produce a version of the argument that finds a stable equipoise between these, by fixing exactly the background required to generate robust results about intrinsic value.

2. A Dilemma

The 'Last Man' findings can be criticized in two broad ways, in local and global dimensions, with *prima facie* plausibility. The apparent dilemma is as follows.

The LOCAL PROBLEM: For the experiment to succeed, the wrongness of destroying trees can only be due to the value of the trees themselves. But mitigating factors, like the (presumed) *motives* of the Last Man [Petersen & Sandin 2013], or socially-based projected values [Carter 2004], may influence our intuitions, providing *other* reasons for the wrongness.

The GLOBAL PROBLEM: If the experiment succeeds, trees have value in the absence of a society, or indeed any future human valuers. But values devoid of human valuers are not coherent: 'Non-sensed value is nonsense' [Rolston 1991, p. 82].[5] Objective value is too cosmic, too alien, to be recognizable as value [Grey 1993; Fox 1995].

An immediate caveat: one can (reasonably) reject the LOCAL and GLOBAL criticisms, rather than try to meet them. E.g. rather than take the objective-value aspect of GLOBAL to be a problem, many would accept it—non-naturalists [Huemer 2013] and

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[5]   Rolston does not *endorse* this claim; but it is his nicely put formulation.

naturalists [Railton 1986] alike. Routley himself anticipates and rebuts the LOCAL and GLOBAL criticisms in [1973] and with Val Routley in [1980, p. 16–17]. Nevertheless, both LOCAL and GLOBAL have been persistent lines of criticism over the last four decades. For the duration, then, I will be supposing that the LOCAL and GLOBAL problems are serious. My thesis is of the form: even *if* all the criticisms of 'Last Man' were correct, then still its conclusion holds; and if the initial criticisms fail anyway, then all the better. Let us then begin to unpack LOCAL and GLOBAL.

The LOCAL challenge is that the experiment is 'not robust': changes to non-limiting factors could change the outcome of the experiment [Attfield 1981, Warren 1983]. Perhaps we think that the Last Man would be wrong to destroy all the trees because we think, 'what kind of a depraved person would do such a thing?' For instance, if the Last Man acts out of viciousness, he has acted wrongly; but if he inadvertently destroys all the trees, even though he was trying to benefit the trees, then one might say he does not act wrongly. Yet the contingent motives of the Last Man should not matter to the intrinsic value of trees [Petersen & Sandin 2013, pp. 130–2]. Thus, the LOCAL charge is that the experiment may inadvertently be testing mediate, and not limiting values, if contingencies can contaminate the result; cf. [Davis 2012]. Carter makes the case that social pressures can interact with the Last Man, whereby the apparent value of tress is merely a human projection, so that '(perhaps unfortunately), the Last Person Argument would appear to establish less than many environmental ethicists would wish' [Carter 2004, p. 60]. In sum, when we share the intuition that the Last Man has done wrong, we could be deriving those intuitions for the wrong reasons.

The GLOBAL challenge, by turns, is part of a more general critique.[6] Is the Last Man too far removed to tell us about value? After all, 'Last Man' seems to suggest that trees have value even if there is no one there to value them. Grey [1993] argues that fully non-anthropocentric values are impossible.[7] Extreme emphasis on

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[6]   Against deep ecology. The 2008 edition of the *Encyclopedia of Environmental Ethics and Philosophy* entry on 'Deep Ecology' by David Keller concludes that 'various critiques have contributed to a significant consensus that Deep Ecology has reached its logical conclusion and exhausted itself.' He cites as evidence that in a major textbook, 'the section on Deep Ecology, which enjoyed a coveted place in the first three editions, was eliminated in the fourth' in 2005.
[7]   Taking a cue from Nagel [1971], who argues that the 'cosmic' viewpoint makes a nonsense of meaning: 'If *sub specie aeternitatis* there is no reason to believe that anything matters, then that doesn't matter either. . .' [Nagel 1971, p. 727].

the 'final' value of nature is to take a viewpoint from which the interests of humans are invisible—an untenable viewpoint for making value judgments. It makes a nonsense of decision theory, for instance [Justus et al 2009, Steele and Colyvan 2011]. 'We can only infer the irrelevance of such a perspective for considerations of significance' [Grey 1993 p. 467]. According to this critique, environmental theories that try to admit that the non-human world has independent value extend the concept of value beyond the breaking point. To put it concretely, 'if all organisms are really of equal intrinsic worth, the deep ecological doctrinaire might just as well eat veal as vegetables' [Fox 1984].

The GLOBAL critique does not dispute that nature is valuable. The criticism is about our *reasons* for taking nature to be valuable, and therefore the *kind* of value nature has. Destroying trees is wrong, but not because of some 'cosmic' value; it is wrong because of pedestrian issues: living on Earth would be less nice if there were no trees. Failing to value nature is a bad *instrumental* choice. Grey writes:

> What's wrong with shallow [as opposed to 'deep' ecological] views is not their concerns about the wellbeing of humans, but that they really do not consider enough in what that wellbeing consists [Grey p. 473].

On this view, there is simply not much sense we can give to the claim that, *sub specie aeternitatis*, Last Man acts wrongly in destroying the trees.

Tying these threads together, if the Last Man is cast outside the anthropocentric circle, then value terms do not apply. If Last Man is inside the anthropocentric circle, his actions cannot be taken as indicative of intrinsic value. LOCAL and GLOBAL form a dilemma. To the extent that the Last Man is not divorced from our actual-worldly concerns, the experiment fails, since it has inadvertently tested our actual-worldly concerns; but to the extent that the Last Man *is* divorced from our actual-worldly concerns, the experiment fails, because there is no such thing as completely independent other-worldly value.[8] There is no signal, or there is too much noise.

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[8]   The dilemma is one for many thought experiments [Davis 2012]. For an objection to intrinsic value made via a modal thought experiment, see Svoboda [2011]; for a rejoinder, Samuelson [2013].

3. A Modal Interpretation of Value

Routley is aware of critiques of 'deep' value theories; he wrote one himself [Sylvan 1985]. Routley accepts[9] that there is no such thing as purely objective value, independent of humans: 'There are no values which are entirely independent of a valuer....' [Routleys 1980, p. 155-6]. But neither does value require humans. Something can still be valu*able*, even if it is not valu*ed*. To make this tenable, his theory at this point appeals to modality and the idea of possible worlds.[10] Routley's requirement for a thing to have intrinsic value is that there be a *possible* valuer. 'Values in a world... always depend on a valuer existing in *some* world' [Routleys 1980, p. 155]. Then things like trees have value only if someone *would* value the trees, were she alive, and even if she actually isn't. The existence of a possible valuer is a necessary, but not sufficient, condition for value.

The move is an attempt to split the difference: values 'are not subjective... nor are they objective' [Routleys 1980, p. 154]. Objectivists about values

> assert that intrinsic ecological values are objectively there in the natural world, whether or not there are any human beings who will recognize these values, and whether or not human beings who recognize the values act to preserve or respect them [O'Neill 1997, p. 127].

Routley resists objectivism. But he also takes it as a 'bizarre result' if

> *any* state of affairs, however environmentally appalling, is valuable because we can find a valuer, e.g. a spokesman for your local development association, who would account it valuable' [Routleys 1980 p. 157].

Rather, the valuer has to value for the right reasons—'the determination of the valuer [is] *dependent upon* the values concerned'

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[9]   Except when he says things like 'As there can be shapes without shape perceivers, so there can be values without valuers' [Sylvan 1992, p. 222]. My exposition here is following [Lamb 2011].

[10]   A la Leibniz/Kripke/Lewis. Routley himself defended noneism [Routley 1980], whereby possible worlds do not exist, but we can still talk sensibly about them.

[*ibid*]. A very difficult balance is sought, at the boundary between (subjective) human value and the (objective) world.

What is right about Routley's modal interpretation of value is that it shows us how the 'Last Man' can be misunderstood. 'Last Man' is *not* an attempt to show that trees have value *absolute* value independently of human valuers. If it were, there would be no need for a last *man* at all; a haiku about a last *tree* would do:

> *If all the trees fall,*
> *but no one ever hears them,*
> *do they have value?*

But that is *not* the experiment. No, Routley is concerned with the interface between values and human concerns,[11] and seeks insight into this relationship by looking at the moment when all human concern gives out—but, crucially, the last moment *before* it is all gone. *Our* ethical decisions are at stake, not merely the continued existence of trees. The modal elaborations insist on some human presence—a person on the outermost point of the anthropocentric circle.

The modal interpretation does, therefore, address the GLOBAL problem. Arguing against anthropo*centric* ethics is not to argue for *mis*anthropic, alien ethics. Be a human (what else could you be?); just don't be a *chauvinist*. A connection with human interests remains, even if dangling by a modal thread.

What is wrong about Routley's solution, however, is that it is still beset by the LOCAL objection, since it requires a person who is subject to contingencies 'implicit in the assumption that world imagined is enough like this one that the case makes sense for the purpose of moral judgment' [Davis 2012]. With a person in on the act, even a modal person, there is opportunity for 'seeing' values that are not really there [Carter 2004, p. 59] or otherwise tainting the experiment [Petersen and Sandin 2013, p. 129].

More importantly, I think that the modal interpretation is a concession that the Last Man is not really last enough; he is, in the story, no more than an *actually* last man, still causing (possible) instrumental harm by depriving possible people of objects of (possible) value. It turns out that destruction of trees is not

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[11] '[T]he distribution of values (and especially of intrinsic values) is much more theory (system, or viewpoint) relative than the distribution of charges.' [Routleys 1980, p. 153]. The modal view '. . .allows for the requisite theory dependence and cultural relativity of values'[p. 156]; Lamb [p. 51–4].

intrinsically wrong, or wrong for final reasons; it is wrong modulo the vestiges of instrumental human interests. And this is dissonant, since Routley's scenario seems specifically designed to divest the protagonist of *any* long-term or societal interests. The ceteris paribus clause in the Wrongness Value Principle fails, giving extraneous anthropocentric reasons for the wrongness of the act.

We can't seem to have it both ways. The modal solution to the GLOBAL problem retains the LOCAL problem. It comes at the cost that the Last Man is not alone.

4. A Revised Experiment, and How it Meets the Criticisms

In light of the foregoing discussions, any successful 'Last Man' must satisfy at least two basic conditions, in a seemingly impossible 'goldilocks' zone: there must be an evaluator to *appreciate* that destroying trees is wrong; but the *only* reason for this wrongness is the value of the trees themselves. These amount to *existence* and *uniqueness* conditions. To this end, I propose:

Modal Last Man
You are the last possible *person. Not only the actual world, but every other possible world too is empty of people; only you are left. Why not spend these terminal moments going around killing all the trees?*

As the only possible person, it follows that you are *necessarily* the only person. In this scenario, people in all the other worlds simply never were. You are the most solitary person there ever could have been, alone in a hypothetical multiverse taken as the actual space of possibility. And, amidst this epic loneliness, still, you should not gratuitously cut down trees.

This is, admittedly, an odd thought. It runs against some standard views in metaphysics, which prohibit 'advanced modalizing' [Divers 1999, Jago 201x]. It also runs against some standard views in logic, depending on one's favorite formalism for modality. E.g. in the actual world it is possible that there is more than one person; so from the actual world, it appears to be impossible that there be a necessarily single person.[12] Routley's logical work, though, is well-suited for handling such technical problems;

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[12] Thanks to a referee for pressing this objection.

cf. [Mares 1997]. We take some of this up in detail below and in Section 5. It is worth mentioning, though, that 'Last Man' was never meant to square with orthodox views.

I offer the 'Modal Last Man' (MLM) in its 'naïve' formulation. I cannot argue that you can imagine it; all I can say is that *I* think I can imagine it, and hope I am not the only one. It is a scenario in which many of our intuitions are unclear—but, I submit, the important intuitions are no *less* clear than the original. If you think the Last Man destroying all the trees is wrong, then you should think the Modal Last Man would be wrong to do so, too. Granting its tenability for the sake of argument, let us look more closely at how this scenario overcomes the challenges so far considered.

What does MLM accomplish? Routley's modal interpretation is diverted. There is not—because there cannot be, *ex hypothesi*—another valuer, in this world or any other, to confer on the trees any worth over and above their value. Nevertheless, we can explain why, if the Last Man is wrong to kill trees, then the Modal Last Man is wrong, too, without blunt cosmic objectivism. There is still a person in the picture, to deny the GLOBAL silence. For, again ex hypothesi, the *only* way to engage with the experiment is second-personal—for *you*, the reader, to project yourself into the position of the MLM, with nothing else in the metaphysical multiverse. Since, in the hypothetical world considered as actual, MLM is *necessarily* the only person, there is no one else in all modal space for you to be! And you think destroying trees is wrong; you value those last trees.

Recall that both the LOCAL and GLOBAL criticisms are directed at the *reasons* deployed in the thought experiment. Why would a Modal Last Man not cut down the trees? And now the answer is a simple consequence of the modal setup. Whatever MLM does, he does so *necessarily*. Either MLM will destroy the trees, or not. But whatever he does is as he *must* do, since there are no other (populated) worlds, no other possibilities or options. So the reasons are singular: he does as he does because he *could not* do otherwise.[13] Even if the original LM acted for the wrong reasons, that possibility is removed here—exactly because all possibility has been

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[13]   Setting aside the issue of whether or not something can be both wrong and unavoidable. Determinism is a general specter for any ethical theory, not a special problem for the ULM. For the record, Routley rejected the ought-implies-can principle [Priest and Routley 1989, p. 383].

removed. Therefore, not only is cutting down the tress wrong, but no other contingent factors are, nor could they be, the basis of the wrongness.

A similar type of reply goes to each of the LOCAL variations. Take motive: we think destruction of trees is wrong because it indicates that MLM would act badly—immorally—in other situations. But for the MLM, there are no other situations. 'Modal Last Man' posits a scenario where all the LOCAL objections are impossible, because the fine details *cannot* be adjusted. There are no alternative scenarios illustrating good or bad motivations, or introducing subtle twists of time, astronomy, or circumstance. There *is no* other scenario.

As a final move—for aficionados only—against the extreme solitude of the Modal Last Man, Routley could invoke some exotic logical materials. He could allow that, following some modal apocalypse, there are no possible valuers, but still there are valuers at *impossible* worlds. (If a world is a way things could have been, an *impossible* world is a way the world could not have been [Mares 1997, Bjerring 2014].) There may be impossible *people*. So even if there are no modal ghosts, goes this line of thought, then there is still their Meinongian residue in *Aussersein* [Routley 1980].

This (baroque) challenge invites iterating the thought experiment, leading up to our final formulation: you are the *last* last person, the only one in any world, *possible or not*. The impossible worlds are empty too (except, maybe, for the one that you are in):

Ultramodal Last Man
You are the last ultra-possible person. Every other world, possible and impossible, is empty of people; your world has only you left. Is it wrong to spend your final time going around killing all the trees?

This version relieves some of the tension in the MLM formulation, since it now openly admits that the Ultramodal Last Man (ULM) may well be impossible. Modal space is cleared even *beyond* the limits of metaphysicians' imaginations. (The name seems appropriately eschatological.) And yet, can we admit that the intuition survives? In this hypothetical taken as actual, gratuitously cutting down the trees is *still* wrong. The proponent of the original 'Last Man' should not lose heart now. To the extent that the ultramodal story is conceivable, I find the intuition as stable as it is in the original story.

To see how 'ULM' meets challenges to 'MLM', suppose for example we try to reintroduce LOCAL motive, by having ULM say: 'I don't like to do things just for the hell of it. But if, *per impossible*, I *were* to cut the trees down, that would be the only reason why. So, for that reason, I won't. *Necessarily*, I won't. *Necessarily* for that reason, necessarily I won't.'[14] Thinking such thoughts, it seems the reason for not cutting down the trees is not solely due to the value of the trees; it is still something to do with the character of ULM. And the problem can be made more emphatic. Above I indicated that the only way to grapple with this thought experiment is second-personal—to put yourself in the place of the protagonist. Does not doing so contaminate the experiment, importing actual-world concerns into these distant regions of ultramodal space? It seems that one would actually have to *be* the ULM to be sure of escaping LOCAL concerns. But we can't actually be the ULM. At best, we can imagine it.[15] On these objections, the conditions of the experiment itself are tainting the experiment.

However, these objections fail. They allow ULM to do exactly what the scenario posits he cannot, namely, to appeal successfully to alternative possibilities or impossibilities. None exist, not even '*per impossible*'. You are to imagine *actually* being this last last person, and if you are doing so within the parameters of the pretense, then you *eo ipso* have to imagine being free of actual-world attachments. And you *can* do so, even while continuing to value the trees. The objections in the preceding paragraph at this point simply deny the premise.

With 'ULM', I submit that the intended goldilocks conditions are met. We have a human valuer, who is nonetheless absolutely isolated from any ongoing human concerns, so the value of his actions *toward* nature can only be due to the value *of* nature. The ULM is making a moral choice independently of contaminating factors, because *there are no other factors* that could taint the evidence; he *must* make the choices that he does. There are not even *impossibilities* open to ULM.

5. The Logic and Metaphysics of Ultramodality

The 'ULM', I claim, is an attenuated reimagining of Routley's thought experiment. But how is it coherent? (Bracketing the

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14 Thanks to Roger Lamb for suggesting this.
15 Thanks to a referee for raising this objection.

more general question of whether the use of such thought experiments is sound methodology, a la [Davis 2012].) To answer this, and to show where 'ULM' is pointing, let me briefly sketch one of Routley's contributions in formal logic.

Routley was a founder of *relevant logic*, and with it, an interpretation using worlds semantics.[16] In fact, this work was not separate from his ethical concerns [Hyde 2014]. And given the discussion of intrinsic value, we can see why: an *ultramodal entailment*,

$$A \rightarrow B$$

is read that A is *absolutely sufficient* for B. 'It does not matter what else goes on; logical laws may go haywire, but nothing subtracts from A's sufficiency' [Routley 1977, p. 895]. If A→B holds, then *even if* A *were the only fact in the universe*,[17] B would already also be a fact in the universe—the former *cannot* be had without the latter, independently of all background assumptions. *Pace* Moore's isolation method, this is to say that B is *intrinsic* to A.

This is in contrast to the standard *material* conditional (A materially implies B iff either A is false or B is true), which has nothing to do with the *connection* between premises and conclusions. A related problem is the interference of background assumptions with proper reasoning: enthymematic premises can be hidden away. Conversely, with an ultramodal entailment operator, nothing else—no other creatures, no other facts, no other logical laws, even—are needed.

To make this precise, and to see where the need for impossible worlds comes in, the following condition is laid down [e.g. Ripley et al 2012]: where *x, y, z* are worlds,

(A → B) holds at *x*   iff   *x* accesses the pair <*y, z*>, and
if A holds at *y*, then B holds at *z*

The semantics ensure that logical 'accidents' do not occur. For example, it is a tautology that A→A for all A. This is a theorem, true at every possible world. But then, it seems that B→(A→A)

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[16]   As has been extensively studied by logicians, beginning with Ackermann, Anderson and Belnap, and then Meyer, Routley, Routley, Priest, Dunn, and Brady; see Routley et al [1982].
[17]   This would be, no doubt, a very odd universe—for a start, one not closed under any sensible notion of logical consequence. It would be an 'American style' impossible world [Nolan 1997]. So A is true there, even though e.g. (A or B) is not. 'Logical laws may go haywire' without disturbing absolute sufficiency.

will be true. And yet, that would violate the intent of the anteced-
ent, B, being *absolutely sufficient* for the consequent, some random
A→A. The two may have nothing to do with each other. To
ensure that there is a meaningful connection, then, requires *more
counterexamples*, scenarios that illustrate how it could be that B
holds where A→A fails. The sites of such counterexamples are the
impossible worlds invoked above.

   So an ultramodal entailment over impossible worlds is a *lawlike
connection*. These tools are now put to use in the following way.
The claim that trees have value because destroying them is wrong,
and the wrongness 'is not independent of the value of some of
what is destroyed' [Sylvan & Bennett 1994, p. 34], can be
expressed conditionally:

$$\textit{destroying trees is wrong} \rightarrow \textit{trees have value}$$

The consequent is asserted to come solely from the antecedent;
the implication connective says that there is nowhere else for it to
be coming from. The ceteris paribus clause, that the value of the
trees is not coming from anywhere else, is now built into the
implication connective.

   This is not to say that the above conditional (or the schematic
one below) is *analytic* or a *logical* truth.[18] It is being presented
here as an axiological truth or a thesis of some deontic theory, as
formalized with an intensional conditional, e.g. in the way that
Routley [1977] formulates mathematical theories with his 'ultra-
logic'. The conditional is an attempt to encode, not logical entail-
ments, but 'deep moral attitudes drawn out (or awakened, even
"remembered" in Socrates' terms) by decisive examples, such as
that of the Last Person' [Sylvan & Bennett 1994, p. 34].

   With this analysis, I tentatively suggest a more general
schematic:[19]

$$\textit{x has } \textbf{\textit{intrinsic}} \textit{ value}$$
$$\textit{iff}$$
$$\textit{destroying x is wrong} \rightarrow \textit{x has value}$$

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[18]   Thanks to a referee for pressing this point.
[19]   Taking a cue from Dunn's account of relevant predication [1987], we could posit
more simply that x has intrinsic value iff for all y ($x=y \rightarrow y$ has value). But this would be to
say that x has raw, objective value independent of any valuer.

Crucially, the 'value' involved in the '*x* has value' is not cosmic, but the same sort of value as in everyday human affairs. Because an → is the main connective of the definiens, the proposal makes intrinsic value parasitic on value simpliciter, as captured by an intrinsic *conditional*. A strong intensional connection allows us to express that trees have *intrinsic* value. A proper reasoning connection *shows* what it means for things to have intrinsic value.[20]

With all extraneous context—possible and impossible— removed, the logic allows us to model the correct conditions for the thought experiment. The Local and Global demands seemed impossible to satisfy together. Impossible equations can be balanced in ultramodal space.

6. Conclusion: An Ultramodal Ethic?

Might some parts of ethics be better practiced using an ultramodal logic? Outlandish as it seems, the concerns of 'Last Man' present in practical ways, in situations where we actually need to make hard decisions. Orthodox deep ecology 'does itself a disservice by ... condemn[ing] more or less any theory of value that attempts to guide "realistic praxis"...' [Fox 1984]. E.g. intrinsic values cannot be represented as 'infinite values', as is sometimes suggested, without derailing any serious reasoning [Justus et al 2008]. Better tools are needed to harness well-intentioned policy proposals. A value that really is appropriate to nature cannot be any *new* sort of value; it must be part of a new sort of *theory* [Routleys 1980 pp. 127-128; Lamb 2011, p. 47]. On the approach I've sketched, intrinsic value can be approximated through a new sort of thinking about the standard sorts of value. Conceptualizing intrinsic value as value at the limits of chains automatically generates a way to calculate: intrinsic values are values simpliciter, embedded in an intrinsic *logic*.

To close, let us return to the most basic objection to the 'Ultramodal Last Man'—an objection to thought experiments *as such*,

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[20] Not to attribute this schema to Routley/Sylvan. Lamb [2011, Section IX] argues persuasively that Sylvan rejected any biconditional, if-and-only-if reduction of value. The existence of a possible valuer was never more than a *necessary* condition for value. 'Value is what it is, its own sort of object with its distinctive features, and not another thing...' [Sylvan 1986, p. 3]. Indeed, showing the extent of the connection Routley saw between ethical and logical work, in [Routleys 1980, footnote 58] they cite their own 1972 'Semantics of First Degree Entailment' paper for a proof that value judgments cannot be deduced from nonvaluative judgments.

or at least thought experiments positing far fetched scenarios. I empathize with feelings of impatience at convoluted and artificial stories, and share doubts about the usefulness of many. However, I reject that 'Ultramodal Last Man' is, at its core, such a story. As hyperbolic as it may seem, the basic sentiment is very simple and immediate. One day or another, for one reason or another, all human life in the (actual) world will, ineluctably, be gone. There will be no one to suffer the consequences of our actions, or judge us. There will be no one to value the trees. Or even to remember the trees. The world, our world now, is a limit case. Does that make what we do now devoid of any intrinsic value? The question is not idle. In a simple sense, we *are* the last.[21]

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