Chapter 10: The Argument from Addition for No Best World

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Abstract: This chapter will amount to a detailed exposition and exploration of one of the most prominent arguments against the existence of an unsurpassable world: the argument from addition. Endorsed by a variety of thinkers such as St. Thomas Aquinas, Alvin Plantinga, and William Rowe, the argument from addition uses the possibility of adding good things to a candidate unsurpassable world to argue that every world is surpassable. While widely endorsed, the argument has come under recent criticism. By carefully working through a targeted version of the argument, I set out to establish the following: (i) that a world can always contain more good things; (ii) that a suitably restricted additive aggregation principle allows us to say that adding more good things in a certain way is an improvement, and (iii) that objections to the argument from widespread value incomparability fail.

10.1 Introduction

The question of a best of all possible worlds looms large in philosophical discussions of religion. A whole family of responses to the argument from evil hinge on there being worlds that are at least unsurpassable, if not positively best.[1] Depending on controversial auxiliary premises about the connection between performance, output, and character, divine freedom may also be at stake.[2] In fact, divine freedom may require there be unsurpassable but no unique best worlds.

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[1] Leibniz's *Theodicy* is the exemplar of this tradition, but Turner [2003], Kraay [2010], and Climenhaga [2018] all carry on this tradition.

[2] See, e.g., Rowe [2003], Howard-Snyder & Howard-Snyder [1994], Leftow [2005a], [2005b], Pruss [2016], and Zimmerman [2019].

The absence of best worlds is also a key premise in arguments against divine obligations, and the arguments for the inevitability of a best world inform recent explorations of divine motives for creating.[3] Consequently, the stakes in arguments for a best world are not low. The object of our exploration is one such argument, which I will call the Argument from Addition

The Argument from Addition is fairly old, and straightforward in its simplest form. It has been endorsed by a number of significant figures in the history of religious thought.[4] Nevertheless, it has fallen on hard times of late. Advances in axiology have placed all of its key premises under question. My objective will be two-fold. First, I aim to give a precise overview of the argument and present its challenges in their strongest form. Second, I will attempt to salvage the argument by adapting its premises to the findings of contemporary axiology. I will conclude that there is an Argument from Addition that justifies the conclusion that there is no unsurpassable world. But it is not without points of rational resistance.

Before we begin, a note on terminology. The terms "best" and "unsurpassable" are both frequently used in these debates. Although they have similar meanings, keeping them apart is important. An unsurpassable world is a world than which there is none better. But there might be some just as good, and there might be some that are incomparable. A best world is not only unsurpassable, but better than every other world. Thus, a world is not best even if it is uniquely better than any world to which it is comparable if it is not comparable to all worlds. Consequently, it is easier to have an unsurpassable world than it is to have a best world. In many use cases, an unsurpassable world is as good as a best world. The Argument from Addition is meant to rule out an unsurpassable world, although in a fair amount of previous literature it is

[3] Rubio [2018], Johnston [2019], and Murphy [2017] ch. 4.

[4] Plantinga [1974], Forrest [1981], Leftow [2005a], [2005b] among others.

presented as showing that there is no best world. The claim that a world is best is logically stronger than the claim that it is unsurpassable. A best world would be unsurpassable, but an unsurpassable world need not be the best. Ruling out an unsurpassable world is much more challenging. Yet, that is our task.

10.2 Axiological Relations

In order to present and explore the argument, we must first lay out the various axiological relations that will become important and the relata of interest. This literature is full of talk of worlds, as they are the primary relata of interest in our axiological relations. They are not, however, the only interesting relata. Sometimes it will be necessary to speak of the goodness of objects (of which a world is a very large case). Sometimes it will be necessary to speak of kinds of goods, such as well-being and beauty. Some of the axiological relations we will talk about apply primarily to objects, others primarily to types of good. Some to both. In introducing each, we will note which relevant relata it may be used to characterize.

For our purposes, a world is everything that is the case. A Kripkean possible world, which leaves no questions unsettled. For simplicity, we will assume that every world is fully determinate. The complications of indeterminacy require a separate treatment. It's worth drawing attention to the ways in which a Kripkean possible world differs from two other important world-like concepts.

The first is the concept of a universe. Precise definitions of a universe will vary, but the idea is something like a causally integrated and isolated whole, contained within maximal integrated relations that are at least analogously spatiotemporal. The important point is that (1) universes are fairly complete objects, with extra-universal influences rare if even possible, and

(2) while there can only ever be one (Kripkean) actual world, there could be very many actual universes.

The second is the Leibnitzian concept of a possible world. Unlike Kripkean worlds, Leibnitzian worlds do not settle every question. Most notably, they omit God. We can think of a Leibnitzian world as something like a possible object of creation. Although universes will feature prominently later in this paper, Leibnitzian worlds will not.

The first axiological relations are straightforward and familiar: superiority, inferiority, and equality. These work exactly as advertised: superiority and inferiority are mirrors: if *x* is superior to *y*, then *y* is inferior to *x*. Equality is an equivalence class that preserves axiological relations under substation. That is to say, if *x* stands in a relation of axiological equality to *y*, then *x* stands in an axiological relation iff *y* does.[5] And vice versa. These relations apply both to objects and to types of goods. In the case of goods, it is most natural to talk about a "tradeoff rate" that tells us how much of one good (if any amount) is equal to how much of another good. Tradeoffs between objects depend on the tradeoff rate between the various goods that the objects exemplify.

Axiological relations have *ceteris paribus* connections to deontic status conferred by substantive practical normativity (that is, practical normativity as informed by objective goodness and in contrast to structural practical rationality).[6] The nature of this connection is disputed, but I will do some minimal side-taking here. If world 1 is superior to world 2, then it is obligatory to prefer world 1 to world 2. If world 1 and world 2 are equivalent, then it is

[5] Note the similarity to Leibniz's Law, but restricted to axiological predicates (for our purposes, those defined in this section).

[6] Fitelson and Easwaran [2015] has a good account of the structural/substantive difference.

obligatory to regard them as perfect substitutes. If world 1 is inferior to world 2, it is obligatory to prefer world 2 to world 1.

It is universally agreed that at least some worlds/goods fall into these three basic axiological relations. The next batch are more controversial. While there are intriguing arguments that each of them is instantiated, there are counterarguments for each. The first two: incommensurability and incomparability.[7] These are sometimes treated as synonyms, but they are only equivalent under strong assumptions, and I will not be treating them that way.[8] Two worlds are incommensurable just in case their value cannot be measured on a cardinal scale. But contrary to how the terms are sometimes treated, incommensurable does not mean incomparable. Not all comparisons require a cardinal scale. Ordinal rankings, for instance, lack a scale but still provide for meaningful comparison. So stronger than incommensurable is incomparable. Two worlds have incomparable value if no meaningful comparison can be made between them. This means that no amount of any value added to either world can make it required to prefer one to the other. If two worlds are incomparable, then it is permissible for an agent's preferences to order them in any way. If two worlds are incommensurable but still comparable, then some other relation of axiological comparison will relate them and impose deontic constraints on preference.[9]

Lastly, we come to the relation of parity.[10] Parity occurs when two worlds can be meaningful compared, but they do not stand in standard relations of inferiority/superiority or

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[7] Broom [1997], [2022] argues that all alleged cases of axiological relations outside the base 3 are due best explained by vagueness.

[8] See Andersson and Herlitz [2022] for a thorough accounting of the recent history of these terms, as well as a dissenting decision about their use.

[9] My regimentation of this terminology follows Chang [1997].

[10] The primary defender of parity is Ruth Chang [2002], [2016], [2017].

equality. Exactly how to define parity is a vexed question. But its primary philosophical defender (Chang) offers the following sketch:[11] value comes in two dimensions; the first, magnitude, tells you how far apart two options are; the second, bias, tells you whether the difference favors one or the other. Parity happens when two things have nonzero magnitude but no bias in their value comparison. In other words: when they are meaningfully different, but the difference does not tell in favor of one or the other.

A test that suffices (but may not be necessary) for parity considers what relations hold between variations on a pair of worlds. Worlds that are on a par are insensitive to small sweetenings. Thus they cannot be equal in value, because if two worlds are equal, making one slightly better makes it superior. Nevertheless, neither is better than the other. Now if two worlds stand in neither a superiority/inferiority relation nor equality, it's natural to think that they are incomparable. But in worlds on a par, the comparison is sensitive to large sweetenings.[12] Making one of them significantly better makes it superior to both. So they are not incomparable, for incomparables are totally insensitive to sweetenings. This test will be especially important in the arguments of section 10.5.

The impact of parity on requirements for preferences are complicated. If two worlds are on a par, it is permissible to prefer one to the other or to prefer them equally. But small improvements/disimprovements to either world must not alter this preference, while large improvements/disimprovements require that the world that has been improved/not disimproved be preferred. Thus, parity does not impose a substantive constraint on preference between two

[11] See in particular Chang [2016] and [2017].
[12] In Chang's 'chaining argument' for parity, she uses a weaker idea: the idea of an incremental chain of improvements/diminishings along a single axis of value. This allows her to replace the transitivity of comparability with the weaker principle that small changes along a single axis of value do not introduce incomparabilities. I am setting aside the question of intransitivities for the purposes of this essay, to avoid complications that won't make a difference to the argument, so I have worded the 'sweetening' test more strongly than is necessary for Chang's argument for the possibility of parity.

worlds, but a structural constraint on the network of preferences around these worlds and their variations.

To summarize: there are three standard axiological relations: superiority, inferiority (its mirror), and strict equality; in addition, there are three controversial axiological relations: incomparability, incommensurability, and parity. Unlike the standard relations, the existence and character of the controversial relations are disputed. I have laid out how I intend to use these terms, and the *ceteris paribus* connections to deontic status for preferences that I take each to hold. This is all contested ground, but its defense must be left to others.

10.3 Formal Value Theory

Formal value theory allows us to take our intuitive and often chaotic axiological opinions and marshall them into an ordered, disciplined whole. In so doing, we are able to see which (and how much) of our intuitive views are actually coherent, and what tradeoffs we will be faced with in determining a final view. Consequently, formal value theory often plays a permissive role, permitting us to maintain as much of our intuitive views as can be shown coherent and only forcing us to abandon them when facing incoherence. Appreciation of this function of formal value theory shows how ambitious the argument from addition is. It aims to use a primarily permissive tool to try and show that views on which there are unsurpassable worlds should be abandoned.[13]

A formal value theory has two components. First, a *representation of value* is a mathematical widget that stands for the real value-bearers to be theorized. Second, a *ranking function* tells us how to make these comparisons. To illustrate, we will look at one of the simplest cases of a formal value theory.

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[13] Much of this section reiterates the view articulated in Rubio [2020].

The simplest example of a formal value theory is a currency. Currencies assign real numbers (usually non-negative rational numbers) to baskets of goods and services. These prices then rank via the ≥ ranking on the reals. They then aggregate via '+.' This theory is simple because it only countenances relations of superiority/inferiority and equality. Currencies attempt to give a single scale (e.g., the dollar/cent) with which to measure the value of anything they are used to price. Incommensurable goods, incomparable goods, and parity are not part of the system.[14]

More complicated theories will accommodate these other relations. But we can learn several lessons about what an adequate formal value looks like from currencies, both their failures and their adaptations. One thing to note is that even currencies do not treat every instance of a good as unit value that aggregates via +. Both the "bulk rate" and the "package deal" vary the price per unit depending on the entire basket of goods purchased. This tells us either that the "+" function isn't actually the aggregation function, or that the unit of value is not the individual good. If the aggregation function isn't '+,' though, it would have to be some kind of piecewise or non-linear thing that approximates '+' in many situations. The simpler interpretation of the theory will probably leave '+' as the aggregation function while assigning value representations not to individual goods, but to collections of goods. The "package deal" cannot be decomposed into a per-item price for its constituent items. Instead, it is a price for the collection as a whole. Although we will see that both the representation of value and the aggregation function used in currencies are inadequate for a formal value theory aimed at capturing full axiology, the lesson from deals is important: we should represent value as attaching to collections, rather than individuals.

[14] For Paul McCartney, love is an example of a good that is incomparable to money, which cannot buy it.

The first inadequacy in the simplest formal value theories is the idea that representations of value should be numbers ranked by ≥. This smuggles in the assumption that not only are all values comparable, but that all values are commensurable. Absent compelling arguments, our formal value theory should not make assumptions this strong.

The second inadequacy is in the use of summation for aggregation. The primary problem for summative aggregation comes from the possibility of organic unity.[15] Organic unity happens when a collections value is different from the sum of the values of the (singletons of) individual members of the collection. For example, the aesthetic value of most paintings is greater than the sum of the aesthetic value you would get by disassembling them into individual patches of color. The spatial relationship between the patches of color creates greater value for the whole (or lesser value, for unskilled artists).

How should we improve our formal value theory to avoid these problems? It is unlikely that there will be a usable one-size-fits all theory. But we can give a few rules of thumb with fairly general applications. We will begin by talking about what goes into a good representation of value. And here, while numbers themselves prove inadequate, it is probably a good idea to have numbers in the vicinity. Numbers characteristically are fit to serve as inputs into algebraic operations, most notably addition, multiplication, and their inverse operations subtraction and division. Being able to sensibly talk about something like addition/subtraction and multiplication/division, even if we don't want or can't get all of their formal properties, will still be useful. Talk of adding and subtracting value is useful at certain levels of abstraction. Furthermore, making our representations of value multipliable is important. The best approaches

[15] Moore [1903/1999] was the first major modern defender of organic unity; for recent discussion see Hurka [1998], Oddie [2001], Lemos [2015], [2019], Zimmerman [2019], and Carlson [2020].

to risk use the mathematical theory of expectation or something near enough, and this requires the ability to multiply values by decision weights (e.g., probabilities). So while numbers are too crude a tool to be our representation of value, we will often find it useful to build our representations of value out of numbers (e.g. by representing value with ordered sets of numbers).

Next, we can say what a good ranking function must do. Minimally it must, for any two representations of value, say which of the following holds between them: one or the other is better, they are equal, or there is no meaningful comparison between them. If we grant that parity exists, then "on a par" should be added to this list. Many common ranking functions rely on aggregating the value of the goods in a collection into a single number and then comparing those numbers with ≥. This tendency should be avoided, as it commonly is in the literature on infinite value theory.[16] Instead, we will compare "lists" of valuables, which we can see as -tuples of numbers, roughly corresponding to the locations of value where we do have the ability to assign numbers.[17] We can then define a function on these lists.

10.4 The Argument from Addition

Now we can state the Argument from Addition. The motivating thought behind the argument is simple enough. There is no maximum to the number of good things there could have been in the world. Consequently, however many good things there are in the world, there could have been even more. But more good things is an improvement. So the world could always have been improved. These thoughts can be combined to give the argument:

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[16] See, e.g., Vallentyne and Kagan [1997], Lauwers and Vallentyne [2016], and Askell [2018].

[17] It is common in transfinite value theory to identify locations of value as the basic value bearers, whatever they are, that we can assign simple representations to and then use in the work of aggregating and/or comparing the values of more complicated value bearers (see, e.g., Vallentyne and Kagan [1997], Climenhaga [2018], and Rubio [2020]).

(1) EXTENSIBILITY PREMISE: For any world, however many good things it contains, it could have contained more without any other axiologically relevant changes.

(2) AGGREGATION PREMISE: For any world, a world that is the same as it is except that it contains more good things without any other axiologically relevant changes is an improvement.

(3) CONCLUSION: For any world, it could be improved.

The EXTENSIBILITY PREMISE is fundamentally a thesis about metaphysical modality. It makes a claim about the number of good things there could be: namely, that it could always increase without causing other axiological changes. The AGGREGATION PREMISE is a claim of axiology. It tells us that, at least in some cases, the aggregation rule is additive.[18] These together entail that any world could be improved. But both premises require defense.

10.4.1 Defense of the Extensibility Premise

There are three arguments in support of the EXTENSIBILITY PREMISE.[19] One way to deny the premise is to impose a cap on the residents of a world. David Lewis endorsed a view like this.[20] Thus, while a world at the thing-limit would not contain every possible good thing, it would contain as many good things as it could. However, outside of the context of Lewis's specific modal metaphysics (where the thing-limit is motivated by avoiding paradox), a thing-

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[18] Note that additivity and summativity are different properties. Summative aggregation methods employ the '+' function. Additive aggregation methods increase with additional things, but the increase need not be summation or even linear.

[19] The reasoning in this section hews closely to that of Hawthorne and Uzquiano [2011].

[20] There is a nuance to Lewis's view that we've ignored. Lewis speculated that there might be a limit to the shape or size of a spacetime. But since Lewisian possibilities are delineated by the borders of a spacetime (or something like), it amounts to a cap on the number of extended, non-colocating things. The possibility of collocated or unextended objects is one we will set aside. Since this is favorable to the opponents of the argument I am defending, I don't expect any objections. For future defenders of the argument, I will flag this unexplored possibility.

limit seems unacceptably arbitrary. So anti-arbitrariness considerations provide one argument for the EXTENSIBILITY PREMISE.

The second argument comes from the iterative conception of set. While we objected to a thing-limit below the total number of possible things on anti-arbitrariness grounds, if a world could be big enough to contain all possible good things, this consideration would be off the table.[21] This raises the question: how many good things can there be? There are three possible answers: κ-many, for some cardinal number κ; absolutely infinitely many, that is, more than any κ; or indefinitely extensibly many: for any κ, there could be κ-many, but whatever the number is, it must be one of the κs. Anti-arbitrariness rules out the first answer. The iterative conception of set rules out the second answer.[22] The iterative conception of set says that sets at higher levels of the hierarchy are "built up" out of things that exist at lower levels of the hierarchy. This blocks Russell's Paradox and has become the standard conceptual foundation of set theory. In the iterative conception, urelements (that is, the non-sets) exist at the 0th level of the hierarchy. They are all available for set-construction at the 1st level of the hierarchy. So there could be a set with all of them. But if there are so many concreta that they outnumber every cardinal, then some (perhaps all) of them can be put into 1-1 correspondence with the cardinal numbers. If they also form a set, then the axiom of replacement says that the cardinal numbers form a set. By definition, this would be the largest cardinal. But if the cardinal numbers form a set, then the powerset axiom says that they have a powerset. If they have a powerset, then Cantor's Theorem says that it has cardinality greater than the set of cardinals. So the set of cardinals would and would not be the largest cardinal. Contradiction. Consequently, we have an inconsistent triad:

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[21] In fact, both Kraay [2010] and Climenhaga [2018] attempt this sort of maneuver.

[22] The argument of this section mirrors arguments from Sider [2009] and Hawthorne and Uzquiano [2011].

either the assumption of so many things that they outnumber every cardinal must go, or one of the axioms used in this argument must go, or the iterative conception of set itself must go. Since the standard axioms of set theory and the iterative conception of set both have distinguished track records, the assumption that there could be so many things that they outnumber every cardinal seems like the weakest link.[23] This leaves "indefinitely extensibly many" as the best answer to the question, "how many things could there be?"

The third argument comes from a construction making it plausible to think that however many things a world contains, it could always have more things that do not have an axiological impact beyond increasing the number of goods. But in order to give this construction, we need a few definitions:

AXIOLOGICAL HEAP: An axiological heap is defined as a collection of items who do not stand in any interesting internal relations.

DISJOINT MULTIVERSE: A disjoint multiverse is one in which there is more than one spacetime, and the spacetime structures do not stand in any causal or analogously spatiotemporal relations.[24]

Each definition requires some explanation. A heap by definition lacks any kind of unity. Likewise, an axiological heap lacks any kind of axiological unity. Axiological unity is provided by internal relations of a particular sort. Relations are internal to a collection just in case all of the relata of one instance of the relation are members of the collection. For example, the splotches of color in *The Night Watch* stand in spatial relations that give the collection its most

[23] See Menzel [2014] for arguments that the powerset axiom is in fact the weak link, and should be restricted in a way that blocks the argument.

[24] Readers will note the intentional similarity to Lewis's [1986] criteria of isolation for his possible worlds

important aesthetic features. These instances of spatial relations are internal to the collection of splotches and are the key to its organic unity. Scramble the spatial relations of the splotches of color, and you no longer have one of Rembrandt's masterpieces. You have a heap of colors. In the other direction, while the items on my desk stand in all sorts of internal relations, none of them is axiologically interesting. They do not form any sort of organic unity or other kind of structure that would make it plausible that the value of the collection would change if the internal relations did.

A disjointed multiverse is not any old multiverse. The multiverses of fiction, for instance, are only of interest because of interactions between various universes (e.g. invasion, exploration, a chance to see how life would have been if some key or chance event had gone the other way). Likewise, Everett's quantum-mechanical multiverse emerges from decoherence and possesses a branching structure where different futures share pasts. These multiverses stand in causal or analogously spatiotemporal relations, and so do not count as disjoint by our definition.[25] Likewise, if there were a multiverse with spacetimes that were causally isolated but arranged in a hyperspace with distance relations, this would not count as disjoint either. The question of "how far" the spacetimes in a disjoint multiverse are from each other must, in any literal distance-invoking sense, be meaningless.

So only specific sorts of multiverses are disjoint. Any disjoint multiverse can be expanded. As we have seen above, the best answer to the question "how many could there be" is, *ceteris paribus*, indefinitely extensibly many, or κ-many, for any κ. One way of expanding a disjoint multiverse is by adding another spacetime. This keeps it a disjoint multiverse.

[25] Additionally, the structuring relations of Everettian Quantum Mechanics may well be axiologically interesting, see Chen and Rubio [Forthcoming].

Disjoint multiverses are interesting worlds for our purposes because a disjoint multiverse can be an axiological heap. Many organic unities are formed through causal or spatiotemporal relations. Other organic unities can come about because of things like uniqueness, uniformity, the diversity of goods present, or the way the existence of things may interact with the intentional attitudes of rational agents such as beliefs, hopes, and desires. We can carefully design a disjoint multiverse so that it is an axiological heap. By definition, the universes in a disjoint multiverse do not stand in causal or spatiotemporal relations. Depending on which of these we take to be axiologically significant, we can be careful to fill the individual universes with things that don't perturb them (e.g. preserving the uniqueness of things by avoiding duplicates, the uniformity of existence by adding the same kinds of things, the attitudes of intentional agents by adding a universe with things the concept of which they do not posesss, etc). This same approach applies to expanding a disjoint multiverse. We expand a disjoint multiverse by adding an isolated spacetime to it. If we are strategic about which spacetime we add, we should be able to add one without disturbing existing organic unities or creating new ones. If our addition is also itself valuable, then know how to make a disjoint multiverse better.

That gets us partway to the EXTENSIBILITY PREMISE. We know how to add good things to disjoint multiverses without changing the axiological status of the other things. But not every world is a disjoint multiverse. Some worlds are not multiverses, and some multiverses are not disjoint. Fortunately, these non-disjoint multiverses can become disjoint multiverses with the addition of an isolated spacetime. A world could contain, say, an Everettian multiverse as well as some other spacetime. It could contain two classical spacetimes. And so on. By the same reasoning that led us to think that isolation prevents things in the spacetimes of disjoint multiverses from affecting each other's axiological status, adding an isolated spacetime whose contribution is good to a world that is not a disjoint multiverse is a way of adding a good thing without changing the axiological status of the things that were already there. This gets us the rest of the EXTENSIBILITY PREMISE. Not only that, but because the procedure always results in a disjoint multiverse, the problem of aggregation for these worlds simplifies to the problem of aggregation for disjoint multiverses. And, as the definition of an axiological heap suggests, this is a noteworthy simplification.

10.4.2 Defense of the Aggregation Premise

So now we turn to the AGGREGATION PREMISE. This premise is meant to express a very limited version of the general more-is-better thought motivating the argument. It enjoys a high degree of intuitive plausibility, and may be considered a generalization of the ever-intuitive dominance and pareto principles in decision and rational choice theory.[26] Consequently, the main argument in its favor will be the refutation of the primary objections against it.

There are broadly two ways to object to the premise. One is to argue that there is an absolute value limit, above which a collection cannot climb. The other is to argue that in certain collections of goods, attempts to add goods create value "repeats" or "redundancies," so that increasing the value of the aggregate would be a case of double-counting.

10.4.2.1 Value Caps

The first way has two salient instances. A very simple-minded way to implement it sees values as modeled by the extended reals, which supplement the finite numbers of the real line with the symbols "∞" and "-∞," standing for positive and negative infinite value. Because these

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[26] Dominance principles generally say: if option A is at least as good as option B in every state, and better in at least one (or simply better in all), then option A is better than option B. Pareto principles generally say: if a rearrangement of goods harms no one and benefits someone, it is an improvement.

values cannot be changed by addition or subtraction[27] (what is sometimes called the "absorption property"), once a world reaches ∞ or -∞ in value, it cannot be altered by adding or subtracting (finite numbers of) things. The existence of the field of transfinite mathematics makes this simple way unviable. But there are more sophisticated versions of the simple way that are worth discussing.

Ascending in the size of the value cap, Nevin Climenhaga argues that under the following two conditions, one promising family of principles for comparing worlds with infinite numbers of valuable things in them delivers the verdict that there are many worlds that cannot be improved by adding good things to them.[28] The conditions: (i) there are infinitely many people, who (ii) each possesses an infinitely valuable life. This position raises to salience the importance of having the right ranking function on worlds. In a previous response, I defended the ranking function SD*, which allows for worlds satisfying conditions (i) and (ii) to see their value increased by adding good things (either more people with valuable lives or more valuable experiences to the lives already present).[29] Before we state the function, a few preliminaries. The basic idea behind SD* is to represent the values of worlds as ordered sets of numbers, where the numbers stand for the atomic values at individual 'locations of value.[30]' When two worlds share locations of value, we simply line them up and subtract. We then sum the resulting series. If the

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[27] It is very important here to recall that addition and subtraction (as well as multiplication, division, and exponentiation), properly speaking, are finite operations. Other operations designed to deal with transfinite situations (e.g. countable sums, integrals, cardinal, ordinal, hyperreal, and surreal arithmetics) are definitionally distinct from them, and I will not assume that any of them is included within the extensions of those terms.

[28] Climenhaga [2018]

[29] For a full response to Climanhaga's position and the rationale behind SD*, see Rubio [2020], especially sections 3 & 4. The basic idea is to add axiologically null proxies for missing locations of value to the representation of each world, and then use formalism that works when two series have all the same elements.

[30] See Vallentyne and Kagan [1997] for this terminology. Intuitively, a location of value is simply a valuable thing – an object, an experience, a person, a state of affairs, etc.

sum is positive, the upper world is better. If it is negative, the lower world is better. We can give an example in a table:

	L1	L_2	L_3	L_4
W1	1	2	5	9
W_2	4	1	7	3
-	-3	1	-2	6

In this example, the bottom series sums to 2 and W_1 is the better world. The trickier case is when the worlds do not share locations of value. In that case, we match up locations they do share and then insert 'dummy locations' with a 0 value for the ones that a world is missing. This lets us generate a series we can sum in the same way. With the intuitive thought on the table, we can now give the function in formal notation:

SD*: $w_{j_n} \geq w_{k_n}$ iff $\sum_{n=1}^{\infty} (w_{j_n}* - w_{k_n}*) \geq 0$, where $w_{j_n}*$ is obtained from w_{j_n} by adding 0s for every member in w_{k_n} but not w_{j_n}, and $w_{k_n}*$ is obtained from w_{k_n} by adding 0s for every member in w_{j_n} but not in w_{k_n}.

A final version of the value cap strategy can be found in the work of Mark Johnston.[31] Johnston follows Georg Cantor in embracing the "absolutely infinite," often symbolized as Ω. According to Cantor, unlike cardinal and ordinal numbers, which have no cap in their respective hierarchies, Ω represents the largest possible magnitude. He also associated it with the divine value and

[31] Johnston [2019].

glory. Likewise, Johnston suggests that any world containing an Anselmian God sits at the Ωth value, a value which cannot be surpassed or altered.[32]

A general consequence of the "value cap" views is that there is no type of value that aggregates additively, no matter how favorable the conditions. It has been generally thought that intrinsic value exhibits this behavior.[33] Johnston in particular is very clear that the distinction between "extra value" and "added value" is crucial to maintain. The primary concern motivating Johnston is to avoid providing an Anselmian God with a coercive reason to create things, which could happen if adding good things would increase the value of the world. There are other ways to avoid this consequence, although they involve taking controversial stances on rationality as an Anselmian perfection or the relationship between value and reasons. For those whose interest in the question of an unsurpassable world is not theologically driven, this kind of concern will be less compelling.

Our formalisms for modeling very large values do not decide between the "value cap" views of Johnston and Climenhaga – both of which require particular theological, metaphysical, and axiological intuitions to maintain – and the pareto/dominance friendly view expressed in the argument from addition and SD*. Both are coherent. As a defensive move, the supposition of a value cap that prevents extra valuable things from aggregating with the other valuable things to create a collection that is more valuable creates a point of rational resistance to the argument. But the dominance/pareto intuition and intrinsic value/additivity connection are central to much of

[32] The most important thing for Johnston's position is that an Anselmian God is absolutely unsurpassable in value, even by collections that include itself. This can be modelled in various ways (e.g. by giving it the value of a strongly inaccessible cardinal and suitably restricting the value/value growth of everything else). The formalism will not force us one way or another, but does provide precise expressions of the underlying intuition.

[33] See, e.g., Murphy [2017] p. 80 and Davison [2012].

rational choice theory; their sacrifice is a real cost. But neither side has an argument that should compel the other.[34] Here, philosophers find the familiar stalemate.

10.4.2.2 Value Redundancy

A second line of objection to the AGGREGATION PREMISE appeals not to a value cap, but to value redundancy. Erik Wielenberg[35] and Mark Murphy[36] both argue that because an Anselmian God would be the ground of all other value, any non-divine value is not intrinsic and therefore does not increase the value of the world as a whole. Murphy preserves the intrinsic value/additivity connection by arguing that in a world where an Anselmian God creates, the created value is not intrinsic and therefore does not make for a more valuable world.[37] Goodness grounded (say by participation) in an Aneslmian God is redundant goodness, and so does not aggregate with the goodness of that God to form a collection with greater value than the collection containing God alone.

This line of argument denies the dominance/pareto intuition by, in effect, restricting its scope to intrinsically valuable things. It supports a restriction of the AGGREGATION PREMISE to intrinsically valuable things. But it requires a bold metaphysical commitment, namely, to a relational conception of the intrinsic/extrinsic distinction.[38] Murphy's view is that value held in virtue of relations to distinct things cannot be had intrinsically. In contemporary metaphysics,

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[34] Many of the prizes that Johnston and Climenhaga are after can be had while maintaining the dominance/pareto intuition, albeit by incurring other costs. I will not here attempt to a full reckoning.

[35] Erik Wielenberg [2014]

[36] Mark Murphy [2017], [2018]

[37] Murphy [2018, 80-81]

[38] Francescotti [2014] gives the relationality account its best go, but for a clear and trenchant criticism see Marshall and Weatherson [2023].

there are two major traditions of thought about intrinsicality, each of which yields a (imperfect) test.[39]

The first is based on the idea of a perfect copy. The DUPLICATION TEST says that a property is intrinsic just in case it is preserved in a perfect duplication.[40] By this test, the value of created things is intrinsic. Copy a created thing (a person, say) perfectly and you may change paradigm extrinsic properties like its location and the distance relations between it and most other things, but at least some of its value properties plausibly remain.[41] The test is not perfect, e.g., “being a duplicate” is dodgy as an intrinsic property, but passes the test. But it indicates, without definitively establishing, that at least some created things have at least some value properties intrinsically.

The second one is based on the idea of aloneness. A thing is alone if and only if it is the only thing in the world. The aloneness thought is that intrinsic properties are those a thing has if it is not accompanied by anything else. It is similar to and motivated by the same intuition as the non-relationality criterion Murphy endorses. But at least some created things (say, a person) would have some of their value properties even if they were the only things in the world. The test is not perfect, e.g., “being unaccompanied” is dodgy as an intrinsic property even though things have it when lonely. But it indicates, without definitively establishing, that at least some created things have at least some value properties intrinsically.[42]

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[39] The exchange between Plate [2018] and Marshall [2021] brings out some of the difficulties these tests face.

[40] See Dunn [1990] and Lewis [1983] for further discussion.

[41] For example, a common test for final value is whether it is fitting to adopt pro-attitudes toward a thing (see Perrine [forthcoming], Hurka [2001], Lemos [2011], Zimmerman [2010], & Feldman [2000]. They work in an ontology of states of affairs, not objects, but the translation is trivial). The person and the duplicate of a person both pass this test.

[42] See Kim [1982], Lewis [1983], Langton and Lewis [1998], and Wilhelm [2022] for refine and discussion.

These are not the only objections to the value redundancy response.[43] But they are enough to establish that it relies on controversial metaphysics. Defenders of the AGGREGATION PREMISE, therefore, have a strong response to the value redundancy objection.

10.5 The Objection from Incomparability

In his defense of divine creative freedom, Alexander Pruss considers the argument from addition but rejects it on the grounds of widespread incomparability between the values that possible worlds display.[44] Pruss identifies four sources of value incomparability. On his picture, there are many possible worlds who are (a) themselves at least as good as any comparable world and (b) incomparable with many/most other worlds. This gives God many unsurpassable worlds from which to choose in creating. Establishing this claim requires establishing two things. First, that the worlds can be partitioned into collections of worlds that are all comparable with only each other. Second, at least some of these collections contain unsurpassable worlds.[45]

10.5.1 Potential Sources of Incomparability

Pruss identifies four sources of incomparability. We will examine each in turn to see their prospects for creating unsurpassable worlds. The first comes from different kinds of value. The case goes like this: we have Sally, who is trying to decide between careers in nursing and mathematics. Each option has its virtues. Supposing Sally has prospects for excellence in both careers and no special obligation either way, Pruss thinks that this is a choice between

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[43] Rubio [Forthcoming] provides a more thorough discussion and several other objections.

[44] Pruss talks about incommensurability, but the way we have regimented axiological language the thing he is talking about is called incomparability.

[45] Pruss's creative freedom preservation project requires many such worlds. The defeat of our argument only requires one. But merely defeating the argument would be a pyrrhic victory for Pruss, there are only a few unsurpassable worlds.

incomparable options. There is no fact about tradeoffs that makes one career better than the other, but they are not perfectly equal.

This case is a lot like one that Ruth Chang uses to motivate the idea of parity as a fourth *sui generis* axiological relation. Chang compares careers in law and philosophy, but the basic idea is the same: both seem permissible, there is no obvious tradeoff principle, and they don't seem axiologically identical. But Chang provides good arguments against invoking incomparability. While rational preferences in these choices are insensitive to small sweetenings (it seems odd that I could make Sally's choice of nursing impermissible by offering her a dollar to become a mathematician, which is what equality would imply), they are not insensitive to large sweetenings. If I offered Sally a million dollars to become a mathematician, it seems impermissible to turn it down for the nursing career.[46] But truly incomparable options are insensitive to large sweetenings. So it is unlikely that cases like Sally's are good evidence for incomparable goods.

However, there may still be incomparable kinds of goods. Another example Pruss favors are certain kinds of aesthetic goods (e.g., simplicity) vs. welfarist goods such as people living flourishing lives. We will return to this later, because it is one of the stronger cases for incomparability. But as Chang points out, finding a good example that is best explained by incomparability when parity is on the table is not trivial.[47]

The second source of incomparability Pruss explores is incomparability from differences in value bearers. He gives two examples. The first comes from situations like Sophie's Choice

[46] For those who don't think self-interest for the million dollars is enough to create impermissibility here, suppose I offer to donate the money to famine relief in the world's poorest nations, effectively allowing her to save/improve many lives by choosing to be a mathematician.

[47] Chang [2012]

scenarios. In Sophie's Choice, a parent can save either of but not both of two of their children, and so must choose one at the loss of the other. In Pruss's view, choosing either child is permissible, but not because the balance of reasons is even. Instead, each represents a unique and non-fungible value that is incomparable to the other.

In this case, parity again seems like a better explanation than incomparability. There are three criteria for two choices to be on a par: both must be permissible, this must be insensitive to small sweetenings, but it must be sensitive to large sweetenings. In a Sophie's Choice situation, it does indeed seem like either child is permissible to save. It likewise seems like this deontic status is insensitive to small sweetenings. If someone offers to pay the parent $5 to save the elder child, it is permissible to turn down this offer. In fact, it seems a bit perverse to accept it. But small amounts of money are not the only available sweetening. Suppose, instead of choosing between two children, the parent may save either their eldest child or their two youngest children. The internal logic of incomparability says that if the original Sophie's Choice case is truly incomparable, then so is this one. But here it seems obligatory to save the two children. And if so, then the original case is explained better by parity than by incomparability.

The second example Pruss gives is far more abstract, and will take us directly into the world of transfinite population axiology. Pruss asks us to consider three worlds, each of which has a countable infinite population. We will represent the worlds as sets of ordered pairs, with the first element a person and the second whether they are in pain (-1) or just fine (1).

W_1: $\{\langle x_1, -1 \rangle, \langle x_2, 1 \rangle, \langle x_3, -1 \rangle, \langle x_4, 1 \rangle \ldots\}$ so that all odd numbered people at in pain, and evens are fine

W_2: $\{\langle x_1, 1 \rangle, \langle x_2, 1 \rangle, \langle x_3, -1 \rangle, \langle x_4, 1 \rangle \ldots\}$ same as above

W_3: {⟨y_1, -1 ⟩, ⟨y_2, 1 ⟩, ⟨y_3, -1 ⟩, ⟨y_4, 1 ⟩…} same as above

He then makes the following judgments. One: $W_2 > W_1$. The argument is fairly simple. Everything is the same between the two worlds, except that one person in W2 is better off than that exact same person is in W_1. This looks like a pareto improvement, and/or a dominant option. Two: $W_1 = W_3$. The argument is fairly simple. There is a 1:1 correspondence between who is in pain and who is just fine, and there is no overlap in the populations of the two worlds, so no one is better or worse off in either. There's also a good case for the two worlds containing equal amounts of well-being and ill-being: approximately $\aleph_\emptyset$ of each.[48] Three: $W_1 = W_3$. The argument for this is the same as the argument for the second judgment. The 1:1 correspondence between who is in pain and who is just fine takes a little more thought to construct, but provably exists, and adding up the well-being and ill-being yields the same ($\aleph_\emptyset$) result.

Problem: the three judgments are inconsistent. From them, you can prove that $W_2 > W_2$. Even fans of value cycles/transitivity failures are not going to like reflexive instances for the strict superiority relation. So something must give. Because the arguments for judgments two and three, the equality of W_3 with each of W_1 and W_2, are identical, they stand or fall as a pair. The other option is to give up on the pareto/dominance principles that support judgment one. Pruss opts for the former. Incomparability, he suggests, is the correct relation. The best explanation for this, he concludes, is that changing the value bearers in a world creates incomparability, even in finite cases.[49]

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[48] In cardinal arithmetic, this is the cardinality of the evens/odds, and in some sense is the natural absolute value sum of even-many 1s/odd-many -1s.

[49] The idea that changing value bearers creates something outside of the classical comparison relations is not unknown in the literature, although it is opposed by more impartial moral theories.

I will offer two lines of response. The first is familiar, and will parallel earlier responses. Parity, not incomparability, better explains what is going on here. Specifically, I will argue that W_1 and W_2 are on a par with, rather than equivalent to, W_3. We will once again walk through the three conditions for parity. First: it seems, in the binary choices between W_1/W_3 and W_2/W_3, either option is permissible. Pruss agrees, and it should be uncontroversial. Second: this permissiveness is not sensitive to small sweetenings. We can think of W_2 as a small sweetening of W_1, switching one person from pain to being just fine. So conceived, it looks like the permissiveness of the W_2/W_3 choice proves that the W_1/W_3 choice is insensitive to small sweetenings. Now consider W_4, a small sweetening of W_2 that flips x_3 from being in pain to being just fine. For all of the same reasons that both options are permissible in the W_2/W_3 choice, they seem permissible in the W_3/W_4 choice. As before, there is a 1:1 correspondence between people who are in pain and people who are just fine, and the well-being/ill-being in the world sum to the same values, intuitively $\aleph_\emptyset$ and its inverse. This shows that W_2 and W_3 are on a par. Parity, however, is not transitive. So there is no pressure to place W_1 and W_2 or W_2 and W_4 on a par. The value cycle is blocked.

Now consider a large sweetening. Let us introduce W5, which is just like W1 except it has an additional countably infinite population, the z_is, each of whom enjoys massive levels of well-being.

W5: $\{\langle x_1, -1 \rangle, \langle x_2, 1 \rangle, \langle x_3, -1 \rangle, \langle x_4, 1 \rangle \ldots \langle z_1, 100\rangle, \langle z_2, 100\rangle, \langle z_3, 100\rangle, \langle z_4, 100\rangle \ldots\}$

By definition, W_5 is a large sweetening of W_1. And it seems obligatory to prefer W_5 to W_3. It has the exact same number of people who are in pain, the exact same number of people who are doing just fine, and a bunch more people at high levels of well-being that have no analog in W_3. Furthermore, we can nullify one of the two reasons Pruss offers to regard the W_1/W_3 choice as permissive. There is no way to make a 1:1 correspondence between the populations of the worlds that preserves levels of well-being. W_1 lacks anyone with well-being levels comparable to the best off in W_5. If we sum up the well-being and ill-being in each world, we do still get the same numbers.[50] But this is more commonly regarded as a bug rather than a feature of using cardinal arithmetic to aggregate well-being. And as we shall see, there are other options.

A second line of response appeals to a more complicated function to analyze the comparison between the three original worlds. We can apply the ranking function SD* to W_1-W_3 and see if the same paradox emerges. SD* effectively calls on us to line up any locations of value that two representations share, and to add null-valued proxy locations for ones that they do not. We then subtract one representation from the other and sum the resulting series. A positive sum indicates a better world above, a negative sum indicates a better one below. The W_1/W_2 comparison is the easiest one, so we will show it first.

	X_1	X_2	X_3	X_4	…
W_1	-1	1	-1	1	…
W_2	1	1	-1	1	…
Comparison	-2	0	0	0	…

As we can see, the sum of the comparison series will be -2, indicating the superiority of the bottom world, W2. Next, we will look at W_1 and W_3

	X_1	X_2	X_3	X_4	…	Y_1	Y_2	Y_3	Y_4	…
W_1	-1	1	-1	1	…	0	0	0	0	…

50 Ish. I have assumed throughout that summing countably many 1s/-1s gets us to $\aleph_\emptyset$ and -$\aleph_\emptyset$. This is intuitive but actually challenging to make work. These sums diverge to positive and negative infinity according to the standard way of reckoning infinite sums, and there is not agreement among various other methods.

W_3	0	0	0	0	…	-1	1	-1	1	…
Comp	-1	1	-1	1	…	-1	1	-1	1	…

As we can see, the comparison series (Grandi's series) has no sum. It diverges. There are some arguments for assigning it a positive sum (e.g., 1/2), and some arguments for assigning it 0. Before we say more, let's look at the W_2/W_3 comparison.

	X_1	X_2	X_3	X_4	…	Y_1	Y_2	Y_3	Y_4	…
W_2	1	1	-1	1	…	0	0	0	0	…
W_3	0	0	0	0	…	-1	1	-1	1	…
Comp	1	1	-1	1	…	-1	1	-1	1	…

This time, the comparison series is slightly different, although it still diverges. But instead of Grandi's Series, we have 1 + Grandi's Series. Consequently, whatever argument there is for assigning Grandi's Series a positive sum or 0 is an argument for assigning this series a positive number. That would grant superiority to W_2.

As far as intuition goes, this is not a terrible outcome. $W_2 > W_1 = W_3$ is perfectly consistent. If at an intuitive level we want to say that all three worlds have the same sized population, and that W1 and W_3 have the same number of people in pain and doing fine, and that W_2 has one fewer person in pain/one more person doing just fine than W_1 does, then concluding the same for W_3 and ranking W_2 above the other two makes sense.

Cantor's mathematics do not let us say this. The existence of a 1:1 correspondence between members of a collection is the *sine qua non* of equality in number for Cantor, and such correspondences provably exist for the painful/doing fine people in each of these worlds. But

Cantor's mathematics need not define our theory of size. There are non-standard infinite numbers (e.g., hyperreal, surreal) and theories of size (e.g., numerosity theory) that have been productively employed to help answer philosophical questions.[51]

In surreal mathematics, for example, there are many distinct countable surreal infinite numbers. So simply knowing that a world's population is infinite and countable is not enough to say how the world compares to other worlds with these same population parameters, or to plug into a ranking function to determine its relative value. It would be like asking us to assess a population which is finite and has five digits to the left of the decimal. Ideally, examples like Pruss's would be sharpened so that we give a specific surreal infinite number as the number of people in W_1-W_3.[52] Once this is done, we could divide it by 2 to obtain a smaller number as the number of people in pain/doing fine. W_2 would then shift one person from the in-pain to the just-fine, and thereby obtain slightly larger/smaller numbers for those populations. Addition, subtraction, multiplication, and division in the surreals behave exactly like their finite analogs, and consequently all of this will follow intuition and yield the result that $W_2 > W_1 = W_3$.

More precisely: call ω the number of people in W_1-W_3. Say that in W1, half of the people are in pain and half are just fine. Then there will be ω/2 of each. When we flip X1 from pain to just fine in W_2, we change the proportions so that W_2 has ω/2 + 1 people doing just fine, and ω/2 – 1 in pain. So it is better than W_1. W_3, by contrast, has ω/2 people in pain and the same number doing just fine. So it is worse than W_2 and the same as W_1. Or something different could be

[51] Chen and Rubio [2020] explores philosophical uses of surreal numbers in decision theory; Wennmackers [2013] explores the use of hyperreals in analyzing fair lotteries. Benci and di Nasso [2003], Mancuso [2015], and Parker [2013] give the mathematical theory of numerosities and its philosophical applications.

[52] In the interest of full disclosure, this is where we hit a snag. We have to stipulate. Unlike in Cantorian mathematics, we do not have a fairly neutral and abstract way of chatacterizing same size. Non-standard theories of size rely either on the construction of an ultrafilter (hyperreal megathology) or stipulation, both of which are open to charges of arbitrariness.

going on, if we resolve the ambiguous "countably infinitely many" in a different way, and don't reckon the alternating pattern of evens and odds as capturing one half of the population in each. But to give the surreal analysis of the worlds, some other equally definite resolution of the values must be specified.

Pruss includes two other potential sources of incomparability. The first comes from the competing goals of producing good things and avoiding bad things. In this, however, he admits that "It may be that when the ratio of [good produced to bad avoided] is roughly balanced, there is [incomparability], but when the ratio becomes more one-sided, one option comes to be on balance better."[53] This seems straightforwardly more like parity, since we can think of one-sided ratios as strong sweetenings. The final source he cites is from different methods of aggregating well-being, e.g., the difference between summing and averaging. This is most plausible thought of not as a distinct source of incomparability but as formal expressions of different kinds of goodness, and so what we said about that will apply *mutatis mutandis* here.

10.5.2 Artistry vs. Other Goods

So far, we have argued that none of Pruss's examples are convincingly of incomparability, especially when parity is on the table. The most promising was from different types of goods, and later in his paper he offers a number of examples pitting aesthetic value against things like intrinsic value and well-being. These seem like the most plausible cases for genuine incomparability, so we will look at them in closer detail. Here is Pruss's response to arguments modeled after the argument from addition.

> One might initially think that we can always improve on a world by simply adding more goods to it. We can add to any world eternally happy immaterial

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[53] [2016 p. 223]

> and morally perfect mathematicians, in sufficient quantity to increase the number of happy beings. But adding entities to a world will decrease a world's simplicity or aesthetic economy, or at least one important and distinctively valuable aspect of this simplicity. Moreover, if we expand a world by adding a good to it, we either multiply the entities falling under some already existent type of good, which seems uneconomical with respect to God's aim to express his infinite goodness in creation, or we multiply the types of good, which is apt to make for a less elegantly unified world. Thus the addition is likely to provide a gain in respect of one value but a loss in respect of another.[54]

Implicit in this argument are the following principles: (i) simplicity is an aesthetic virtue incomparable with goods like intrinsic value and well-being; (ii) one way to calculate simplicity is to count the number of entities in a world; (iii) one way to calculate simplicity is to count the number of kinds of goods in it.

We might first question whether simplicity counts as a good at all. Following Christine Korsgaard, we can divide the space of possible goods along two axes: the intrinsic/extrinsic axis, and the final/instrumental axis.[55] The intrinsic/extrinsic axis separates goods based on what kind of properties give them to their bearers. The precise definition of an intrinsic/extrinsic property is vexed, but you can think of intrinsic properties as the ones things have because of what they are, and extrinsic properties as ones they have because of how things in general are, including their relations. By contrast, the final/instrumental distinction separates goods based on their function.

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54 [2016 p. 232]

55 Korsgaard, Christine [1983]. “Two Distinctions in Goodness,” *Philosophical Review* 92:2, 169-195.

Final goods are good for their own sake. Instrumental goods are good because of how useful they are in acquiring other goods. So if simplicity is a good, it is one of these four.

Money is the paradigm instrumental good. It is pursued because it helps secure other goods. Well-being is the paradigm final good. It is pursued as an end in itself. Is simplicity more like money, or more like well-being? It's not clear what, if anything, can be secured with simplicity. Certainly not well-being. Perhaps a certain sort of pleasure, although if we think of the simplest thing we can (say, a photon), it is unclear that it is a very effective means to other ends. So the best case for simplicity as a good is probably as a final good.[56] Is it plausibly intrinsic or extrinsic? As a rough guide, we can look to our two tests. The duplication test rules it intrinsic. The perfect copy of a simple thing is just as simple. The isolation test also rules it intrinsic. Consider a simple thing alone, and it is still simple. These tests are defeasible, but suggestive. So simplicity is most plausibly an intrinsic final good.

Is it incomparable with other goods, such as well-being? If two goods are incomparable, then advancing one at the cost of the other is always permissible, all else equal (e.g. we don't run afoul of deontic side-constraints or incur countervailing costs). So if simplicity is incomparable with well-being, then losing any amount of well-being is *ceteris paribus* permissible for a gain in simplicity. Furthermore, if simplicity is incomparable with well-being, then well-being is incomparable with anything that simplicity is comparable with, and simplicity is incomparable with anything well-being is comparable with.

Suppose there is an isolated island facing disaster – a storm, say. Left to their own devices, they will not survive the storm. Granted some common supplies (tools to rebuild, clean

[56] On the other hand, if we apply the fitting-pro-attitude test to simple things, it is not obvious that simplicity passes this test..

water, basic medicine, etc), they will not only survive but go on to happily inhabit the island for generations, but will have little effect on or notice from the outside world. **Let** us further suppose that they are the last of a species of hominid – people, but not *homo sapiens*. If they are left to their fates, the world will become simpler by both measures we have encountered: it will contain fewer good things, and fewer species of good (the distinctive good of this hominid's flourishing). If simplicity and well-being are incomparable, withholding the needed supplies to further simplicity would be permissible. Still, it seems impermissible to me. If so, then the relationship between simplicity and well-being is not one of incomparability. At least simplicity as Pruss proposes to measure it.

But perhaps there is a confounder here, maybe a deontic constraint to preserve life. So suppose now an agent can do nothing to affect the outcome of the storm. But the population might survive anyway. The following principle seems plausible to me about what it is permissible to hope for:

HOPE-INCOMPARABILITY PERMISSION PRINCIPLE: if either of E_1 or E_2 must occur, and G_1 and G_2 are incomparable, and E_1 would advance G_1 at the cost of G_2 while E_2 would advance G_2 at the cost of G_1, and all else is equal, then it is permissible to hope for E_1 and it is permissible to hope for E_2.

A few words on behalf of the principle. The best version of standard theories of hope requires three conditions under which *s* hopes that *p*: (i) s desires that p; (ii) *s* presupposes that *p* is possible; (iii) *s* is disposed to focus on the outcome *p* describes under the aspect of unswamped possibility.[57] An unswamped possibility is one where the improbability or some undesirable feature of a state is more psychologically salient than that state's desirability in the agent's mind.

[57] Chignell [2023].

For instance, a prisoner who desires to escape from prison but cannot think about their escape plan without being overwhelmed by how unlikely it is to succeed swamps the desirability of the escape with its improbability.

In the modified storm case, it seems to me impermissible to hope that the islanders do not survive the storm, even though it seems possible that a simplicity-fanatic could desire it and/or the disposition to focus on its possibility would not be swamped by the overwhelming loss of well-being. If so, this is strong evidence for the comparability of simplicity and well-being.[58]

10.6 Conclusion

We have now completed our tour of objections to the Argument from Addition. As it stands, none wholly succeed, although the "value cap" approach represents a point of rational resistance to the argument. Nevertheless, we have seen that the argument can be given a formulation that does not require an unrestricted summative or additive aggregation principle, and that the principle it does require is plausible. Furthermore, we have seen that the challenge from incomparable goods can be met and have argued that what often appears to be incomparability is better explained by parity. We conclude that the case against an unsurpassable world is in good standing.

[58] In his defense of the unsurpassability of a world with only God, Pruss mentions not only simplicity but also uniform maximum excellence. The question of the ethics of creation and the permissibility of non-creation is a relevant and often-motivating factor in these debates, but one that I don't have space to take up here, although Rubio [2018] sketches my preferred response to these issues. I am less convinced that uniform excellence will find a place on Korsgaard's axes of goods, an so I have focused on simplicity here.

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