Restoring the hierarchy of being

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RESTORING THE HIERARCHY OF BEING

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Abstract

The idea of the Great Chain of Being was a foundation stone of philosophy from Plato to the nineteenth century. Under the onslaught of various schools of thought, the idea was eventually banished from philosophy, retreating into the corners of esotericism. The idea of an ontological hierarchy, however, merits reappraisal. Rechristening it more prosaically as the hierarchy of being and pruning it of its wilder and less plausible offshoots, we find a concept worthy of reconsideration. After surveying the historical fate of the hierarchy, focusing of the famous work of Arthur Lovejoy, and then identifying the reasons for its demise, I develop a rigorous definition of metaphysical superiority deriving from an understanding of the hierarchy as found in Aristotle and Aquinas. This definition is exemplified by cases taken from the hierarchy and defended against challenges and possible counterexamples. Having argued that my definition survives these objections, I conclude that the concept of a hierarchy of being still has much to commend it, deserving serious reconsideration, nonetheless ever-reinstalled at the core of sound philosophy.

1. Introduction

The idea of a 'Great Chain of Being' was, historically, one of the most durable and persistent of highly general ideas embedded in Western philosophy.[1] From Plato through much of the eighteenth century, the vast majority of philosophers and other thinkers believed in what I will call, more prosaically, a *hierarchy of being* in the universe. Yet during the nineteenth century the idea of a hierarchy of being died out, not to be revived or reconsidered at any time since. It went the way of so many other theories and ideas prominent in medieval philosophy and almost invariably rooted in Greek thought, usually that of Aristotle but in this case primarily the thought of Plato. The post-medieval period, as a whole, is unified most clearly by its taking a wide broom to what is now thought of as the detritus of a 'pre-Enlightenment' world view. The hierarchy of being, along with so much else, was swept away never, it is almost universally hoped, to return.

As a point of methodology, philosophers ought not to be too ready to brush aside ideas and theories that have a literal two millennia of intellectual support behind them. If

their inheritance is a rejection of some such idea or theory, it behoves them to be open-minded concerning its re-evaluation. Can the hierarchy of being be restored, or at least recovered from the landfill of intellectual history? Once we separate that which is viable from that which is not in the thicket of ingredients that make up the historical Great Chain, I think we can restore a theory that stands up to a modern critical eye. The process of restoration does require the reaffirmation of assumptions and positions that will still not find favour with many philosophers; one cannot tell the entire form in order to give the hierarchy of being new lease of life. That said, I believe we can do much to rehabilitate it in a form, and with all the appropriate caveats, that gives it renewed interest to a relatively unprejudiced mind.

The following discussion aims to show how this can be done. It begins with some necessary explanation of the hierarchy in its historical context, but then moves towards a dehistoricisation of the idea, stripping it down to its basic elements – ones having grounded in Aristotle and Aquinas. I aim to show how the notion of *metaphysical superiority* at the core of the hierarchy can be given a rigorous definition able to handle both old and new counterexamples that have or can be levelled against it. I leave aside the *implications* of a plausible hierarchy, about which it would be far too early to speculate. In this sense, the ambit of the discussion is narrow – the metaphysical defence of a hierarchy of being recognisable to its past adherents yet plausible to an unprejudiced modern mind.

2. Lovejoy and the hierarchy

As is well known to historians of ideas, Arthur Lovejoy's seminal book *The Great Chain of Being* virtually founded the discipline of the history of ideas with its ground-breaking study of the hierarchy of being.[2] The book had an enormous influence, spawning critical analyses and retrospective studies both of its correctness and of its impact.[3] From Plato to Romanticism, via Aristotle, the neo-Platonists, St Augustine, St Thomas Aquinas, Bruno, Spinoza, Locke, Leibniz, Kant, along with lesser philosophers and also historians,

naturalists, poets, and novelists, Lovejoy managed to capture the idea of the hierarchy as a subtle complex of sub-ideas adhered to in one form or other, though they agreed largely on essentials, by two millennia of thinkers. Sometimes only a poet has the pithiness and turn of phrase to encompass a deep philosophical idea:

> Vast Chain of Being! which from God began,
> Natures ethereal, human, angel, man
> Beast, bird, fish, insect, what no eye can see,
> No glass can reach; from Infinite to thee
> From thee to Nothing.[4]

What place was occupied by the idea of a hierarchy of being, so admirably and succinctly expressed by Pope? Lovejoy rightly saw it as 'a part of the history of Western man's long effort to make the world he lives in appear to his intellect a rational one.'[5] It answered the question 'why should "the world" be a whole and what it is?'[6] If, asserted Lovejoy, the world's 'being', 'extent', and 'range of diversity which its components exhibit' have no 'intelligible reason', if they 'might equally well have been other than they are', then 'the constitution of the world is but a whim or an accident.'[7] He explicitly added that 'conformity to the very curious set of primary laws which empirical science discovers' – at least part of which we now think of as the 'fine-tuning' of the universe – was an element of the explanandum. Such conformity, thought Lovejoy and many after him, could not be a 'brute fact'.[8] Clearly, then, the Principle of Sufficient Reason underlay the idea of the hierarchy as an explanatory concept:[9] in general terms, the contingent diversity and behaviour of the universe and everything in it required a complete and adequate explanation.

One might argue about the explanatory reach or adequacy of the hierarchy. Would it explain conformity to the peculiar laws of our cosmos? One might question the extent to which the hierarchy consisted of a genuine explanation of known phenomena or else a putative explanation in search of phenomena to explain. Whatever one's view, the picture we ended up with, transmitted from generation to generation over millennia, involved a

'conception of the plan and structure of the world which, through the Middle Ages and down to the late eighteenth century, many philosophers, most men of science, and, indeed, most educated men, were to accept without question – the conception of the universe as a "Great Chain of Being"...'.[10] It was:

> composed of an immense, or – by the strict but seldom rigorously applied logic of the principle of continuity – of an infinite, number of links ranging in hierarchical order from the meagrest kind of existents, which barely escape nonexistence, through 'every possible' grade up to the *ens perfectissimum* – or, in a somewhat more orthodox version, to the highest possible kind of creature, between which and the Absolute Being the disparity was assumed to be infinite – but only one of them differing from that immediately above and that immediately below it by the 'least possible' degree of difference.[11]

As Lovejoy explains, the hierarchy is a master idea constituted by three main sub-ideas. According to the Principle of Plenitude, 'the universe is a *plenum formarum* [plenum of forms] in which the range of conceivable diversity of *kinds* of living things is exhaustively exemplified'.[12] Put in more general terms, '[A]ll conceptual possibilities must be realised in actuality.'[13] The Principle of Continuity states: 'If there is between two given natural species a theoretically possible intermediate type, that type must be realized'.[14] If Continuity were false then Plenitude would also be false. But if Plenitude were false, there would be a *lack* or *defect* in what neo-Platonists thought of as The Good or the Absolute, what for Christian adherents of the hierarchy is God, what for any supporter of the hierarchy was the eternal and infinitely fecund source of the boundless diversity of the cosmos. The necessary outpouring of creative diversity would have a limit, would contain gaps into which further creative acts *could* be poured but were not.

The third principle in Lovejoy's account – the one to which he gives least attention yet which, if there is to be a promising restoration of the hierarchy, should be given *most* attention – is the Principle of Gradation: all things may be 'arranged in a single graded *scala naturae* [ladder of nature] according to their degree of "perfection".'[15] In fact it is Gradation, rather than Plenitude or Continuity, that historically represented the hierarchy in visual terms. In books of philosophy, theology, alchemy, natural history, and politics, generations of educated people were presented with a *ladder* or set of *steps* from the least perfect to the most perfect of beings in the universe, with God or the Creator above all. Angels were immediately below God and at the top of creation, followed by man, other living creatures, non-living creatures, and (although not depicted, for obvious reasons) prime matter or pure potentiality, the closest being to nothingness and the most removed from the 'pure actuality' that is God.

3. The breaking of the Chain

As we know, the Great Chain of Being eventually broke. So cleanly did it break that there has not been a hint, in the last two hundred years, of its making the slightest comeback. Its fracture was the result of a confluence of numerous causes, some theological, others philosophical, yet other political or scientific. One might say that for every domain of human knowledge in which the hierarchy played a foundational role, there emerged from within that domain a current of thought – of thinkers – railing against it or at least chipping away at the hierarchy, weakening its links until, in our own age, nothing of it remains. As the hierarchy was arguably the ideological centrepiece of the pre-Enlightenment, pre-Scientific Revolution intellectual framework, so its nullity is the hallmark of the 'modern' or 'scientific' worldview. This even though many Enlightenment thinkers, scientists included, persisted in adhering to some form of the hierarchy.

For Lovejoy, the main causes of the breaking of the Chain were the influences of Evolutionism and of Romanticism.[16] Evolutionism – as opposed to the nineteenth century

theory of evolution – was a movement of thought encompassing both a particular biological outlook and a general adherence to principles of development and progress that 'temporalised' the Chain of Being, to use Lovejoy's term. Although Evolutionists did not abandon the idea of gradation in nature, the gradation was no longer part of a static, immovable metaphysical structure but instead an unfolding process that was essentially temporal and dynamic. The specific view of evolution that found its apotheosis in Charles Darwin's theory already had its seeds in Evolutionist philosophy both metaphysical and natural. We find anything from strands of Evolutionism to concrete empirical theories (minus the range and wealth of data crucial to Darwin) in thinkers as diverse as Leibniz, Voltaire, Kant, Buffon, and Lamarck – although both Kant and Leibniz also affirm the metaphysical hierarchy, the latter more clearly and explicitly than the former.[17]

The other solvent of the Chain, as Lovejoy saw it, was the emergence of Romanticism in the late eighteenth century and its development through the nineteenth, as represented by poets, philosophers and theologians such as Herder, Schleiermacher, and Schelling.[18] In Schelling, '[n]ot only had the originally complete and immutable Chain of Being been converted into a Becoming, in which all genuine possibles are, indeed, destined to realization grade after grade, yet only through a vast, slow unfolding in time; but now God himself is placed in, or identified with, this Becoming.'[19] In Romanticism, an 'absolute and static world' is transformed into 'one of diversity and becoming'.[20] Movement, process, and self-development, the unfolding of divinity in nature, self-realization through the striving of the spirit: all of these Romantic themes contributed to the complete inversion of the 'entire Platonic and Aristotelian scheme of the Universe'.[21]

Lovejoy is surely right that these two currents of thought undermined the hierarchy, though one might argue over how dominant either of them was. Moreover, without going deeply into historical questions of influence and priority we should also, for background, note

other important movements and schools of thought that undermined the hierarchy. Protestantism overall,[22] with its emphasis on the democratisation and privatisation of religion, was inherently antithetical to static, heavily metaphysical hierarchies of being. The influence here is twofold. On one hand, political and ecclesiastical hierarchies were often bound up with the primary metaphysical hierarchy of being, so Protestantism's corrosion of the primary hierarchy was indirectly due to its overall hostility to the hierarchy's political and ecclesiastical manifestations. On the other, given general Protestant hostility to Aristotelian and Scholastic metaphysics, it was unlikely that a hierarchy developed and refined through medieval philosophy could survive the success of Protestantism in many parts of formerly Catholic Europe.

The Scientific Revolution of the seventeenth and eighteenth centuries also played its role in the hierarchy's demise.[23] Through Galileo and Newton, the Copernican Principle became established in physics and cosmology: man was not a 'privileged observer' of the universe.[24] We are now accustomed to the magisterial pronouncements of public science (whether from scientists or, as we might call the other variety, *scientistes*) that man is an insignificant species on an equally insignificant planet located on a minor spiral arm of one among a hundred billion galaxies floating around an indifferent and possibly infinite universe.[25] It is easy to see that any conceptual scheme resembling the hierarchy of being could not survive this fundamental decentralisation of mankind. If we add into the mix the general, irresistible trend of anti-feudalism and burgeoning political egalitarianism, along with the Enlightenment – at least in its more revolutionary and anti-theistic moments, given that many Enlightenment thinkers continued to believe in something like the hierarchy – we end up with a mix of philosophy, theology, economics, politics, and social attitudes that pulled the hierarchy to pieces, placing it ostensibly beyond rehabilitation.

It would, however, be a caricature to suggest that the backlash against the hierarchy was an assault by early modern sophistry against a pristine medieval structure whose pure authenticity had survived the test of time. The hierarchy of being, as passed down through the intellectual generations, had acquired an encrustation of philosophical limpets and conceptual barnacles that made it, quite rightly, appear increasingly less plausible to the early modern mind and its heirs. These excesses did the hierarchy no favours. At best, they appeared as bewildering metaphysically weak epicycles that served up glib answers to serious questions. At worst, they acted as a kind of metaphysical Star Chamber, wielded to uphold an existing order of things because that order had to be that way lest the beauty, symmetry and completeness of the hierarchy be found wanting. Putting it in fairly general terms, Lovejoy tells us: 'Since every place in the scale must be filled, and since each is what it is by virtue of the special limitations which differentiate it from any other, man's duty was to keep his place and not to seek to transcend it...The good for a being of a given grade, it seemed evident, must consist in conformity to its type'.[26] More specifically and with greater portentousness, he goes on: '[N]o great improvement in men's political behavior or in the organization of society could be hoped for...The principles of plenitude and gradation could, in this way, among their many uses, be made to serve the purposes of a species of pessimistic and backhanded apologetic both for the political status quo and for the accepted religion.'[27] As Pope puts it with his usual succinct clarity:

> Order is Heav'n's first law; and this confest,
> Some are, and must be, greater than the rest,
> More rich, more wise...[28]

From Samuel Richardson's novel *Pamela* we have:

> Wise Providence
> Does various parts for various minds dispense:
> The *meanest slaves*, or those who *hedge and ditch*,
> Are useful, by their sweat, to feed the *rich*.
> The *rich*, in due return, impart their store,

> Which comfortably feeds the lab'ring *poor*.
> Nor let the *rich* the *lowest slave* disdain:
> He's *equally* a *link* of Nature's *chain*;
> Labours to the *same end*, joins in *one view;*
> And *both alike* the Will Divine pursue;
> And, at the last, are levell'd, *king* and *slave*,
> Without distinction, in the silent grave.[29]

The appeal to a hierarchy of being in order to reinforce social, political, economic and religious roles was one of the main *excesses*, as I would put it, of hierarchical thinking. Yet we need to tread carefully when exposing the mistake involved in this socio-political accretion to the ontological structure. We can readily admit, as nearly all of us moderns would, that an ossified hierarchy of the type espoused even in the eighteenth century was bound to perpetuate and reinforce many kinds of social injustice, artificially cramping the horizons not only of groups but of individuals with their legitimate aspirations of improvement and advancement. We dispose of this worldview too quickly, however, merely by noting the injustice. Rather, there was a *metaphysical* mistake at its heart, namely that of confusing the essence of the *kind* with the essence of the *role*. In other words, there is no such thing as a *monarchical essence*, or a *feudal* essence, a papal or episcopal essence, or a knightly essence in the sense of belonging to the *bearer* of any such role. What has the essence is the *role itself*: the monarchical role is essentially defined in terms of its essential constituents – being a head of state, practising one-person rule, of a noble lineage, ceremonially installed, and so on (the essence of the monarchical role being an interesting metaphysico-political question in its own right). The same for any other role, be it political, social, religious or economic. The *monarch*, however, does not have the monarchical essence. The monarch's essence is the same as yours, mine, and that of the serf – that of a human being, a rational animal. The monarchical essence belongs to the role, not the person occupying the role. We can reasonably suspect that the socio-political excesses of the hierarchy, as seen in Pope and Richardson, were encouraged by a confused and illegitimate

metaphysical transfer of essentialist thinking about an ontological hierarchy to the concept of a socio-political one. This does not, though, rule out socio-political hierarchies. All it means is that whether any such hierarchy is justified, and whether and to what extent it is fixed, will be a matter for debate *outside* metaphysics – debate in ethics, political philosophy, theology, economics, and the like.

A final observation to make before moving on to more positive ideas concerns what might be considered an excess as well, but of a kind more understandable and excusable. This is the extravagance involved in applying the metaphysical hierarchy to empirical science, particularly biology. So, for example, we have Charles Bonnet, the eighteenth-century naturalist, producing a hierarchy in which humans are the sublunary summit (as per the traditional scale), sea anemones are at the bottom of the ladder of the living, with tube worms[31] above moths, eels above water snakes, and gall insects[31] above tapeworms. Descending the ladder, we find Bonnet placing stones above salts, salts above metals, earth above water, water above air, and air above fire (the 'four elements' still in the picture).[32] It is easy for us to scoff at these pseudo-gradations, but given the state of physical and biological knowledge at the time one could no doubt have found a fair bit of good sense in Bonnet's distinctions. To that extent, what come across as yet more excrescences of the metaphysical hierarchy could more generously be considered legitimate scientific hypotheses, respectable for their time if now found lacking in empirical support (for reasons all too familiar to Aristotle himself, as we will see).

4. Can we do better?

If we are to recover the hierarchy as something at least worth considering by the contemporary metaphysical mind, we need to get back to basics as well as entering some methodological caveats. By getting back to basics I mean, first, putting aside the moral and political excesses of the hierarchy as either wrong or at least not justified by distinctively

metaphysical truths. They are, in my view, a distraction from the proper understanding of the hierarchy as a metaphysical structure. Secondly, we should attenuate the connections between the hierarchy and the metaphysical speculations of neo-Platonism, so admirably detailed by Lovejoy.[33] To think of the hierarchy as an 'emanation' of the 'superabundance' or 'infinite fecundity' of 'The Absolute' might well be translatable in terms more easily grasped by those not initiated into the profundities of neo-Platonist metaphysics, in which there may well be important truths embedded. Nevertheless to build that into the recovery plan for a slimmer – albeit to the modern mind still overly elaborate – structure would not, I submit, serve the cause of appreciating what is plausible about it. Thirdly, we should not, in explicating the hierarchy, *assume* the existence of God or any other immaterial agents. Nor, at the other extreme, should its explication be treated simultaneously as a *proof* of their existence. Methodologically, our approach should be to take on the content of the basic hierarchy as handed down by its previous adherents and to show what the structure would look like, and how it would be justified on metaphysical grounds, *were* there to be, as elements in it, God and other immaterial agents. By not assuming the existence of God (and the rest), then, I mean that God's existence should not be regarded as necessary for the hierarchy to be *coherent*. God would have to exist in order for the hierarchy itself to exist, at least in its traditional form; but that would be a different question. Correspondingly, although it would be misplaced to treat an argument for the coherence of the hierarchy – for its plausibility *as* a structure – as an argument for the existence of God at least with deductive or even strong inductive force, one might think of the hierarchy as *suggestive* of the existence of God. I will say (perhaps disappointingly) little about this at the end of the discussion.

In order to restore a hierarchy that is more plausible in its own terms, we need to get back to the spirit of Aristotelian-Thomistic metaphysics. Here is where the core of the hierarchy is to be found. This is not, I want to stress, an exercise in exegesis. The basic

materials of the hierarchy are indeed to be found in Aristotle and Aquinas.[34] To make progress, however, we should be concerned far less with exegetical niceties and much more with the substance of the central ideas that can give us a hierarchy of more than historical curiosity. In this spirit, we should first focus on *essential powers* – powers that are *of the essence* of their bearers. These would be powers that entail into the very *definition* of a thing, such as rationality (for humans) or sentience (for animals), or they could be powers that 'flow' from the essence whilst not being a constituent part of it, such as the ability to laugh (humans) or the ability to bend in the wind (most plants). A power (or other *property* in the strict Scholastic sense of 'proprium') that flows[35] from the essence is necessary to a kind of entity given the kind to which it belongs. Nevertheless, damage to a member of the kind, such as disease or the absence of parts, can result in loss of the power or a frustration of its manifestation. Normal functioning for the individual according to its kind, then, is required for all of its powers to be present and exercisable.[36] We should focus on essential powers because the hierarchy is supposed to be a necessary one as opposed to a mere potentially temporary arrangement of things. That is, the hierarchy is supposed to be necessary *given the existence* of its members. Their own existence may be contingent, of course, but their place in the hierarchy would be necessary as long as all the members existed. It would not, by contrast, make for a hierarchy of more than ephemeral interest if the *very same* members could be arranged differently, which would be possible were the structure based on merely contingent powers.

Next, the hierarchy needs to be *highly generic*. What counts as highly generic is, admittedly, somewhat vague and also interest-dependent, but there is nothing subjective about the salient joints at which the hierarchy is carved. We have already seen that any attempt to rank *all* species (at whatever level) will lead to excesses and absurdities of the kind we (albeit understandably) found in Bonnet. At the other extreme, it would be wilful

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blindness to refuse to rank *anything* on the spurious Aristotelian-Thomistic ground that the hierarchy has always been about ranking *substances*, and since every member is a substance they are all on a metaphysical par. This kind of monism is quite obviously too much of a flattening to be faithful to the joints of reality. Perhaps we might make one cleavage only – between the living and the non-living? Yet if we make that – as we should – why not go further? Can we not find anything of fundamental metaphysical interest and importance separating kinds of living things? Might we not be able to separate levels of non-living things as well? As we will see, although significant generic rankings among the living are plausible, they are less so in the case of the non-living – with, perhaps one exception.

Recall Lovejoy's dissection of the Chain into the principles of Plenitude, Continuity, and Gradation. By far the most attention is given by him to Plenitude,[37] with roughly equal attention to Continuity and Gradation after that. Whether or not this bias is historically accurate, on my view we need a reorientation, making the Principle of Gradation the centrepiece of the hierarchy. Here is a more recent statement of the principle: 'In material and living bodies we find an ascending order of perfections in which the higher beings have their own perfections as well as those of the lower level of being.'[38] Needless to say, by 'perfections' the author does not mean that which makes a thing perfect, since no material or living body is or can be perfect, at least on the Aristotelian-Thomistic view of reality. He means, rather, essential elements as well as the properties that flow from them: those features or characteristics whereby a thing is of the essential kind to which it belongs. To put it tautologically, if we want a restoration of the hierarchy we need to focus on what is *hierarchical* about it, not on the other – albeit interesting – ancillary features.

Does this mean we should cast aside Plenitude and Continuity? Perhaps in the way they were so often understood, as represented by Lovejoy, we need to retire them from the conceptual field. Given Continuity's dependence on Plenitude, as shown earlier, it is really

the latter that has arguably caused enough neo-Platonist intellectual chaos over the centuries to bring about the downfall of the hierarchy. Yet perhaps we can, one day, perform an intellectual makeover on both principles so as to render them fit for a restored hierarchy based on Gradation. Consider these Scholastic formulations of Plenitude, whose author remarks explicitly on Lovejoy's 'amazing misunderstanding of the principle of plenitude':[39]

(P1) 'By the free choice of the Creator the universe of being contains all essential levels of perfections and of natures'. (P2) 'The superior one is represented by many inferior beings.'[40]

The interpretation of both (P1) and (P2) is open for debate, but suppose we read them as variants of the following idea: it is necessary, for the representation of the Creator's creative act as both free and good, that there be a sufficient diversity of created essences of varying levels of perfection.

This version of the Principle of Plenitude, obviously weaker that the neo-Platonist version, encompasses two key thoughts of Aquinas. First, God's free creative act communicates His goodness to creatures. Their existence thereby represents His goodness, but this representation would not be adequate if there were only one kind of creature on its own. Hence the very nature of God's creative act, as defined by its objective, logically requires that many diverse kinds of creature be produced.[41] Secondly, although the divine creation participates in and represents the goodness of the Creator, still God could have created things superior to those He did create.[42] In other words, adequate representation (and glorification) of the Creator does not entail the existence of a best possible universe, assuming even that the concept of a best possible universe were coherent. And this is what we should expect given the unbridgeable gap between the infinitude of God and the finitude of any possible creation (another key theme of the hierarchy through the ages).

What version of the Principle of Continuity might be worth consideration? Note that because Continuity is entailed by Plenitude in their strong formulations set out earlier, if we

relinquish the latter then the former loses its most important justification. If we moved, as Lovejoy would have us, towards a dynamic understanding of Continuity, we would likely find the beginning of justification in terms of the need for transitional forms in evolution. Even here, however, the principle would have to be weakened from one involving a maximally strong modal claim about logically possible intermediates to one proposing the existence of those intermediaries needed biologically to explain actual evolutionary transitions. Without Plenitude, however, the logical claim about a static gapless hierarchy looks unmotivated.

Consider, then, these alternative formulations of a weaker Principle of Continuity: (C1) 'The order of the universe displays a gradual scale of perfections from end to end through all essentially different intermediate steps'; (C2) 'Every superior nature in its least perfection of operation borders on the highest perfection of operation of the nature ranking next below it in the scale of being.'[43] We can plausibly read (C1) and (C2) as variants of the following thesis: the universe displays a hierarchy of overlapping essences at some metaphysically significant generic level. Again, this idea is embedded in Thomistic thinking, as developed from Aristotle's own thought about the powers of the soul.[44]

Both Plenitude and Continuity in their Scholastic forms play roles in the formulation of the hierarchy I will give. The role of Plenitude is implicit and will merely be gestured at towards the end. That of Continuity is explicitly built into the hierarchy by virtue of its Aristotelian-Thomistic form. Both are worthy of further exploration, but the emphasis must be on Gradation as the keystone of the hierarchy. Consider even that in the case of Continuity in particular, it is not mere overlap that matters but *graded* overlap, as both (C1) and (C2) make clear. Maybe the three principles handed down by Lovejoy's reconstruction ought to be reduced to two, with a single Principle of Continuous Gradation accompanied by the Principle of Plenitude. That said, I think we should regard the phenomenon of *overlap* as

playing metaphysical second fiddle to that of *superiority*, since it is the latter that makes the hierarchy a *hierarchy*.

5. Defining superiority

Before proceeding to a rigorous definition of metaphysical superiority, now is the time to present the hierarchy in its full Aristotelian-Thomistic form:

[INSERT FIGURE 3.1 HERE]

Here are a few comments on the structure. (i) The generic beings and kinds of being on display are standard for the Scholastic conception, albeit put together in a complete way not usually seen. (ii) With regard to the horizontal lines, prime matter is separated from all the rest due its not being a substance. It has no independent existence, requiring complementation by substantial form in order for a material substance to exist. God and angels are separated from the rest because they are immaterial. God is separate from the rest for obvious reasons, including that He is not a species, a genus, or a member of any species or genus. (iii) With regard to the left-hand side, prime matter as pure potency *receives* the material forms above it, as already indicated. In the opposite direction, God as pure actuality *creates* all that is below. (iv) Moving further to the right, everything from God to plants is enclosed in a curly bracket because all of these are *living* beings. Within these, humans, animals and plants are enclosed in a smaller bracket because they are the *organic* living beings, that is, they rely on material constituents and conditions for their lives. (v) Further along, as God is pure actuality and prime matter is pure potency, so in between there is a denomination for each grade of being according to its *specific* difference – what separates it from everything else in the hierarchy. These are the usual Scholastic denominations, but note that by calling angels pure minds I do not mean that God is *not* a pure mind; rather, angels are the only *created* pure

minds. (vi) On the right-hand side, the specific differences are explicitly laid out, thereby demonstrating the *overlap* between adjacent members of the hierarchy – the kind of *continuity* that is central to the Aristotelian-Thomistic conception.

To elaborate, we should note that prime matter overlaps bodies because bodies *really* contain prime matter. Angels and humans overlap because they both have minds; the same for God and angels. That said, overlap in the hierarchy is no more a transitive relation than anywhere else in metaphysics. God and angels overlap humans since all have minds, but neither God nor angels overlap bodies or prime matter even though humans do (on the standard Thomistic view).[45] (vii) God and angels are grouped together as minds without bodies although in no way whatsoever belonging to any common species or genus, since God is in neither. In a more tentative way, I have explained the difference between them, as far as having a mind goes, in terms of the *kind* of mind. Although neither God nor angels have *reason* – they do not *ratiocinate* – they both have *intellects*. God's intellect is wholly active, not in the same way as a human's active intellect, which engages in reasoning and abstraction, but in the way of an omniscient being. The intellect of angels is, I venture to suggest, either partly or purely *passive* and *non-discursive*. Angels know only what is *imparted to them* by God and humans.[46] I will say more about this later.

We now need a concept of metaphysical superiority that will explain the gradation at the centre of this classic Scholastic hierarchy of being. Talking now about *metaphysical species* and their members, we want to rigorise this informal idea: (members of)[47] species S1 is (are) superior to (members of) species S2 just in case S1 can do what S2 can do *and more*. (Recall principle 210 above: "In material and living bodies we find an ascending order of perfections in which the higher beings have their own perfections as well as those of the lower level of being.") Further, we need to explicate 'can do' in terms of *essential powers*, as implied earlier, otherwise we would not be talking about species *qua species*. (One species of

bird might be *contingently* superior to another species of bird when it comes to nest building – imagine that the nest-building superiority is not due to the birds' intrinsic natures but rather to the vagaries of available environmental nest material – but this is not the sort of superiority we should have in our sights.)

Again, as suggested earlier, the powers we are concerned with must be highly generic, not merely essential. There might be, say, two highly similar species of fungus one of which is more toxic to grapes than the other. This does not make for the *metaphysical* superiority of one fungus species over the other even if the difference is essential. Nor is there such superiority from the mere fact of having an *extra* highly specific power – say, one fungus being toxic to grapes and apples and the other only to grapes. One problem is that such precise and minimal differences between species are rare – perhaps found only in cryptic species that are easily confused as conspecific – which means there will be no complete ordering available among the species, as no doubt Bonnet will have concluded at some point in his career.[48] A related problem is that if S1 has a power making it putatively superior to S2 and S2 has a different power making it putatively superior to S1, neither will have *absolute* superiority over the other. It is easy to suppose this to be the case throughout nature if we focus on powers that are less than highly generic. How, though, do we know whether a complete ordering in terms of absolute superiority is even possible? That depends on whether there is a suitably generic level at which absolute superiority can be identified. The Aristotelian-Thomistic hierarchy sketched above shows just what that level is. In other words, the right generic level and the possibility of a ranking in terms of absolute superiority come as a package: if we can identify one, we can identify the other. Our hierarchy, then, will be at the level of the most generic powers of the essences of the most generic metaphysical species of things consistent with a complete ranking by absolute superiority.

Further, the definition of superiority in terms of which the hierarchy is explained will need to account for certain data, or better certain non-negotiable ideas likely to be had by its adherents. (1) Plants are superior to *mere* bodies, that is to say inorganic bodies. Plants are not 'just another' kind of body. To some reductionists, of course, plants and most if not all other living things are just more kinds of body, with those trees incapable of being explained in wholly physico-chemical terms. I doubt that any supporter of the traditional hierarchy is a reductionist of this sort, nor is this essay addressed to such reductionists. (2) A second idea that should be explicable in terms of the definition of superiority is that angels – immaterial finite minds – are superior to human beings. They are not just another kind of human (which would be obvious to any Scholastic philosopher), nor could humans ever become angels and vice versa. Needless to say, it had better not turn out that humans are superior to angels.[49] (3) A datum you do not need to be a Scholastic philosopher to accept is that bats are not superior to mammals. Bats *are just* another kind of mammal, so to say that they are superior to mammals cannot possibly be correct.[50] (4) I do not think we should say that rocks are superior to electrons or vice versa. Our definition of superiority should not entail otherwise. (5) Nor should it entail that, say, bats are superior to dolphins or vice versa, these both being no more than kinds of mammal, even though bats have specific powers that dolphins do not have, and conversely.

Here, then, is a rigorous formulation of the idea of metaphysical superiority:

Species S1 is superior to species S2 $=_{def}$:

(I)

(I.i) The set of S2's generic powers is a proper subset P of S1's generic powers; *and*

(I.ii) S1's generic powers minus P are not wholly explained by any of the powers in P.

OR

(II)

(II.i) A proper subset of S2's generic powers is a proper subset P of S1's generic powers; *and*

(II.ii) S1's generic powers minus P are not wholly explained by or identical to any of S2's generic powers *or* any powers of some species S3 to which S1 is superior according to (1).

The main idea behind this definition is to capture the earlier-mentioned intuition that absolute metaphysical superiority involves being able to do what something else can do *and more*. Correlative with this, however, is the need not only to rule out intuitive cases of *non*-superiority but also to account for the different kinds of relationship we see on the classical hierarchy. In particular, we need to show how superiority holds between the rational, sentient, vegetative and inorganic on the one hand, as well as between the incorporeal (God and angels) and all the rest on the other. The best way of unpacking this is to go through some examples; the reader can then work through others for himself.

Let us begin with clause (I): how does the hierarchy measure up? Three examples show how it works. (1) The powers of a body are a proper subset of the powers of a plant. A plant is not a *mere* body but it is a species of body nonetheless, subject to the laws of physics and chemistry. Since it is not a mere body, it has further powers (those proper to *living* things) beyond those of a mere body – the *vegetative* powers[51] – so the set of generic powers belonging to *inorganic* bodies is a proper subset of those belonging to plants (I.i). Next, on my non-reductionist assumption about biology the vegetative powers are *not* wholly explained by any of the inorganic bodily (corporeal) powers. That is precisely the non-reductionist point: not that reductionists mistakenly think plants are inorganic, of course, but that what is *nominally* organic about plants is (for the reductionist) *nothing but* a repertoire of inorganic powers, wholly explicable by the laws of physics and chemistry. This is what the non-reductionist denies, and this denial is built into the classical hierarchy. To be sure,

vegetative powers are *partly* explained by bodily ones – physics and chemistry (even inorganic chemistry) enter into vegetative processes. But no non-reductionist would say otherwise. As far as the hierarchy goes, however, clause (I.ii) is still satisfied: the vegetative powers are not wholly explained by any of the mere corporeal powers; there is more to the essence of the vegetative than the merely bodily.

By contrast, bodies are not superior to plants on the definition. (I) is not satisfied since the set of vegetative powers is not a proper subset of the set of corporeal powers. By (II), we can find a proper subset P of plants powers that is a proper subset of the corporeal powers – being space-occupying, for example; so (I.i) is satisfied. Nevertheless, the corporeal powers minus P – being time-occupying, having shape, and so on – are identical to generic vegetative powers, since plants too are time-occupying, have shape, and so on. Hence (II.i) is not satisfied.

(2) Applying the same reasoning to animals and plants, we see that the set of vegetative powers is a proper subset of the generic powers of animals, since the latter also have sentience (consciousness of some kind, no matter how rudimentary).[52] However, those sentient powers are not wholly explained by the vegetative powers of animals – even though all animals have vegetative powers as part of their essence and those vegetative powers enter essentially into the distinctively animal powers (no perception without nutrition, for example). The non-reductionist *assumption*, again, is that these higher sentient powers cannot be wholly explained in terms of any of the powers possessed by *mere* vegetative beings, i.e. by plants. Again, (I) is satisfied.

By contrast, plants do *not* turn out to be superior to animals: (I) does not apply since the set of generic animal powers is not a subset of the generic powers of plants. Still, might plants be superior to animals according to the second disjunct (II) of the definition? Various proper subsets of generic animal powers are indeed proper subsets of generic vegetative

powers: the nutritive powers, for instance, or the reproductive powers, or the union of both sets; so (II.i) is satisfied. Whichever P we choose, however, it turns out that the vegetative powers minus P are either wholly explained by or identical to some of the generic animal powers. In this case, they are all identical to generic animal powers, precisely *because* animals also have the generic vegetative powers. So (II.i) is not satisfied. Hence plants are not superior to animals according to (II) either.

One might object that since *photosynthesis*, for example, is a vegetative power but not an animal power, there must be some vegetative power not belonging to P, for any P we choose, that is not explained by or identical to any animal power. So why aren't plants superior to animals after all? The fact that some animals can photosynthesise (some kinds of bacteria, for example) is irrelevant. What matters is that photosynthesis is not a *generic* vegetative power. Rather it is a kind of *nutritive* power, and it is the generic nutritive power of plants that will either be part of P or identical to an animal power that is not part of P (if we chose, say, only reproductive powers, or reproductive and locomotive powers, as the members of P). Photosynthesis does not, therefore, make plants metaphysically superior to animals.

(3) The set of generic animal powers is a proper subset of human generic powers: humans are a species of animal. So (I.i) is satisfied. However, humans also have *rational* powers[53] that cannot be wholly explained in terms of the sentient powers. So (I.ii) is satisfied. Hence, by (I), humans are superior to *mere* animals although they are a species of animal: the human powers minus the animal powers are not wholly explained by any of the animal powers. Once again, this is a non-reductionist *presupposition* for the purpose of defining the metaphysical hierarchy.

Animals, by contrast – mere or non-rational animals – are not superior to humans. (I) is not satisfied since the set of human powers is not a subset of the set of animal powers. By

(II.i), a proper subset of human powers is a proper subset P of animal powers: one could, for example, choose the reproductive powers, or sentient powers, or the union of both. Whichever P one chooses, however, the remaining animal powers will be identical to human powers – again, taken at the most generic level. So if sentience is the only power excluded from P, then since it still exists in both animals and humans, animals will not come out superior to humans according to (II.ii). The same for any other animal power excluded from P.

What we should *not* want is a definition yielding the result that bats are superior to mammals. Intuitively, bats are just one among the mammals; indeed, every mammal, however fascinating in itself, is just one among the mammals, except when considering humans and their special rational and intellectual powers. We should not say that at the generic metaphysical level. Where the joints of nature are saliently carved, we will find bats standing to all the other mammals as humans to all the other mammals (or to all the other animals, for that matter). Again, whereas bats, intuitively, are *just another* kind of mammal, we should not – as non-reductionists – think of plants as *just another* kind of body.

Fortunately, (I) does preserve this distinction. In order to show this, though, we do need to descend to more specific powers, because now we are considering bats as against other *mammals*; so we need to consider the generic powers of mammals *qua* mammals, along with the powers had by specific *kinds* of mammal. We cannot avoid getting into the biological weeds; nor should any Scholastic metaphysician be afraid to do so. The generic bat powers minus the generic mammalian powers are, quite simply, the *power of flight* and all the powers that depend on it (perhaps certain powers of limb movement, for example). But the power of flight in bats presupposes and *is wholly explained by* the generic powers of mammals.[54] Note that the full account of bat wing homology appeals to more than *just* mammals – for instance tetrapod reptiles and the forelimb structure of birds – but this is due

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to the descent of mammals, on the standard account, from non-mammalian ancestors. The complete explanation of bat flight in terms of bats being mammals includes, then, whatever it is about mammals that explains their generic limb structure. The most specific part of the explanation will be in terms of *mammalian* limb structure and the adaptations undergone by bats so as to result in the power of flight. The more general part of the explanation will be in terms of whatever adaptations mammals themselves, as a metaphysical species, have in common with certain non-mammals. The whole explanation of bat flight, then, will still be in terms of the fact that bats are mammals. So bats do not turn out, on (I), to be superior to mammals. What about (II)? We can easily find a proper subset P of mammalian powers that is a proper subset of bat powers – say the powers that depend on having hair, or the power of lactation in the female, or the union of these – but it will remain the case that the bat powers minus P are identical to or (in the case of flight, as per above) wholly explained by the generic mammalian powers.

Note that my use of the phrase 'wholly explain' is not meant to exclude the explanatory role of selection pressures in the emergence of a characteristic, which applies across the board. Rather, I am focusing on species relationships only: qua variation on a type, the bat wing structure is wholly explained by its being a mammal, not by any species relationship with, say, flying insects – where the similarity is a matter, it is thought, of convergent evolution.

We certainly do not want mammals to turn out superior to bats (not merely counterintuitive but absurd). On (I) this is impossible since the set of generic bat powers (which, of course, includes flight) is *not* a subset of the mammalian powers. On (II.i), a proper subset of bat powers – pick for instance the set containing lactation and the powers that depend on having hair – is a proper subset P of the mammalian powers. (II.ii) fails, however, because the mammalian powers minus P are wholly explained by or identical with

the generic bat powers. For example, the power to send oxygen-rich blood around the body is identical in all mammals. Hence, and fortunately, the definition does not entail that mammals are superior to bats.

Now we want to capture the slightly more complicated relationship between disembodied substances – God and the angels – as well as between both of these and the embodied substances. For God is not a species of angel and vice versa, and neither are species of anything below them on the hierarchy, nor is anything below them a species of God or angel; in particular, angels are not a species of human nor are humans a species of angel. It might be replied that not everything is a species of something below it in the hierarchy as diagrammed earlier. Humans are a species of animal but animals are not a species of plant. Nor are humans a species of plant even though plants are a species of body.[55] And nothing is a species of prime matter, even though prime matter is a component of all material substances. So why should God and the angels pose a problem? For one thing, God is not in a species or genus, is not even a singleton species, and has no overlap with bodies in terms of powers. As utterly distinct from His creation, yet with humans made in His image, how can we specify His superiority in a way that comes out clear and plausible? Angels, too, are not bodies and have no bodily powers, yet they share important powers with humans whilst being quite distinct species from humans (each angel being its own singleton species). Humans have powers distinct from angels and vice versa – yet the classical hierarchy has angels above humans, not the reverse.

How, given all of this, are we to account for the superiority relations? Again, the intuition we want to capture is that where two beings or kinds of being share certain powers yet are in a superiority relation, we should have (i) an explanation of why the unshared powers are unshared and, more importantly, (ii) an explanation of the superiority generated by some of those unshared powers such that asymmetry is preserved.

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Before looking further at angels and humans, consider the more quotidian example of bats and dolphins. Bats and dolphins are species of mammal. We have no intuition that one is metaphysically superior to the other. Still, each has powers the other doesn't have, so maybe we can call that a kind of limited or local superiority across a particular dimension (e.g. locomotion, whether by air or sea), but we do not want to say that bats are metaphysically superior to dolphins or vice versa. They are just two kinds of mammal. Take bats to be our S1 and dolphins our S2. Clause (I) of our definition clearly does not apply since the generic powers of neither S1 nor S2 are a proper subset of the other's. We move to clause (II). By (II.i), there is a proper subset of dolphin powers that is a proper subset P of bat powers – these being the shared mammalian powers (gestation, respiration via lungs, etc.). The *unshared* bat powers are those of flight (and the unshared dolphin powers are those of swimming). Looking at clause (II.ii), the bat powers minus P – in other words the powers of flight (and the powers that depend on it), *are* explained by the generic mammalian powers of dolphins. Note: I am *not* asserting that the power of flight in bats is explained by the fact that *dolphins* have certain powers. That would be an absurd claim. Rather, I am asserting that it is explained by the *powers that dolphins possess* – certain generic mammalian powers – that are *also* possessed by bats, therefore not lifting bats as a species above dolphins in the metaphysical hierarchy.

Since, as explained above, the whole explanation of bat flight is in terms of the fact that bats are mammals, their lack of superiority to dolphins consists in the fact that bat flight is wholly explained by mammalian powers possessed, inter alia, by dolphins. Again, to put it more casually, the special bat powers do not place bats above dolphins in the metaphysical hierarchy because those powers are adequately explained by something that dolphins are, namely mammals. In this case, bats too are mammals, but it is the comparison to *dolphins* –

with the focus on what dolphins are – that explains the lack of superiority to them in particular on the part of bats.

It might be objected that I am cherry picking favourable examples, so let us consider a more challenging case in order to show the robustness of the definition and to highlight the underlying metaphysical principles. Consider bats and insects. Our definition should not yield the result that bats are metaphysically superior to insects or vice versa, no matter how much such a thought would have appealed to many eighteenth- and even nineteenth-century naturalists. Neither bats nor insects are a metaphysical species of the other, let alone biological. More generally, chordates (to which metaphysical species/biological phylum bats belong) are not a metaphysical species of arthropods (to which metaphysical species/biological phylum insects belong) and conversely.

We should be able to see immediately that clause (I) is not satisfied. What about clause (II)? By (II.i), a proper subset of insects' generic powers is a proper subset P of bats' generic powers (I will run the argument in this direction but I leave the other direction to the reader). These generic powers include the generic powers of all organisms – reproduction, homeostasis, and so on – plus those of the animals – sentience and locomotion – and also those powers which allow chordates and arthropods to be within the same tree of life, part of a unified taxonomy involving specific morphologies in the broadest sense, such as body plans and organ types. In evolutionary terms, this will be governed by the putative last common ancestor of the two phyla – perhaps an annelid worm-like animal, as proposed in 1875 by Anton Dohrn.[56]

Speaking in more abstract metaphysical terms, we can focus for example on *segmentation* as common to both phyla: arthropods and chordates all have segmented body plans giving rise to certain bodily powers unique to segmented organisms, such as certain kinds of independent movement, organ regeneration, and bodily growth. But the phyla

diverge significantly, of course – as anyone who has seen a bat and a fly will testify. One key divergent feature is dorso-ventral inversion – roughly speaking, opposite orientations of the nerve cord, heart and blood flow. The chordate orientation – to which all the distinctively mammalian powers ultimately owe their existence via difference in body plan between chordates and arthropods – is not part of the P shared by chordates and arthropods. But it *is* explained wholly by the powers due to the species relation chordates bear to arthropods, namely being a common species of segmented organism (whatever the specific details of any last common ancestor or descent with modification). In other words, the inverted orientation of chordates is explained by the powers they owe to being a kind of segmented organism, which arthropods are as well. The inversion is possible *because* of the segmentation, whatever the historical details. Hence the definition is satisfied and, since chordates are not metaphysically superior to arthropods, neither are bats superior to insects, or vice versa.

It is, of course, impossible to examine every possible challenge to the definition derived from the incredible diversity found in the tree of life. It is difficult to rule out all possible counterexamples. Perhaps we will have to indulge in some chisholming[57] of the definition in order to arrive at the bulletproof status, not (too) divergent from intuition, that metaphysicians should be bold enough to seek. Or perhaps the chisholming will reveal unfixable flaws in the attempt to give metaphysical superiority a precise criterion. I submit, however, that such cases as the ones I have just discussed reveal more general principles that should help us when confronting alleged counterexamples.

One is that biological non-reductionism should be handled with care. It is one thing to assume, plausibly, that sentience cannot be wholly explained in terms of non-sentient features of organisms: awareness, no matter how primitive, looks on its face to be of a different metaphysical order from even the most complex entities and processes that are wholly without awareness. The same goes for trying to explain rationality in terms of awareness, no

matter how complex the latter may be: the abstractness of rational thought again seems to be of a different order from consciousness on its own. By contrast, taking a non-reductionist approach to, say, mammalian echolocation, or insect flight, seems unmotivated and somewhat bizarre. We should therefore *expect* that when comparing even quite disparate species, such as bats and insects, or whales and worms, or horses and dogs, or even bacteria and fungi, we should be able to trace a path – whether historical (phylogenetic) or conceptual (morphological engineering, *including* genetic processes) – whereby what is distinctive of one species is ultimately explained in terms of what it has in common with the comparator species.

Secondly, and related to this thought, if the tree of life is really a single tree – more abstractly, if biological taxonomy is *unified* – then we should not expect that global unity to be *swamped* by local disunities. In other words, if there *is* a metaphysical hierarchy, with the inevitable breaks or leaps in the chain, this should be understood as limited in scope compared to the unity and gradualness found in between the breaks. Otherwise the very enterprise of biological explanation will look hopeless. So we should look for, and expect to find, plausible explanations of species characteristics in terms of commonalities with other species, just as biology postulates – and did postulate both before and after Darwin. Hence the appeal to homologies, common selection pressures, shared genes, common morphological constraints, and so on. Our definition of metaphysical superiority should, as Quine might have put it, minimally mutilate all of this explanatory work.

We are finally in a position to consider the much thornier relation of angels to humans. It should be clear that (I) is not satisfied since the powers of a human are not a proper subset of the powers of an angel: humans have rationality and they have bodily powers, but these do not belong to immaterial minds. (Recall: angels do not reason, they *receive* knowledge.) We need, then, to look at part (II) of the definition. On (II.i), there is a

proper subset of the powers of a human that is a proper subset of the powers of an angel, namely *intellect* and *will*. Now consider clause (II.ii). The angelic powers minus P are the incorporeality of angels and the special, essentially non-discursive nature of their intellects.[58] But these are *not* explained by or identical to any generic human powers. So the first half of (II.ii) is satisfied. What about the second half? Again, the angelic powers minus P – incorporeality and non-discursivity – are not explained by or identical to any species below angels in the hierarchy according to (I). We know this because we know there are no species below angels whose powers are a subset of the angelic powers: that all such species are *bodies* is enough to prove that. Further, suppose there were a hypothetical non-angelic species above humans, such that angels failed to be superior to it according to (I). Such a species would still, ex hypothesi, be superior to humans, which does not entail that angels were therefore inferior to humans. For the purposes of the second half of (II.ii), what is relevant would be a case where a species *inferior* to humans according to (I)[59] somehow wholly explained the angelic powers minus the powers angels shared with humans. But there is no such species. Moreover, suppose there were a species intermediate between angels and humans, such that: (i) angels *were* superior to it according to (I); (ii) but the angelic powers minus the powers angels shared with humans were wholly explained by the powers of that hypothetical species. Assuming one could even make sense of such a species standing in those hierarchical relations, by the transitivity of superiority, given that this intermediate species was ex hypothesi superior to humans, angels would still be superior to humans according to (II). I should add that there are independent reasons for doubting the very possibility of a species intermediate between humans and angels, making the above speculations somewhat tangential (Oderberg 2013).

To elaborate a little, on the classic understanding of angels each angel belongs to its own singleton species.[60] No angelic species is superior to itself, so that cannot explain the

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angelic powers they do not share with humans. Even if they all belong to a *genus* – the angelic genus, of which each individual angel is a singleton species – that will not explain the powers they do not share with humans as opposed to merely *restating* the fact of their being angels. The truth is that what explains those unshared powers is the direct creation of angels in their entirety by God, who says fiat to produce incorporeal intellectual substances.

To speak casually again, nothing about this special creation brings angels down to the same metaphysical level as humans, in the way that bats and dolphins are just kinds of mammals on the same level. This is so even though humans themselves have specially created immaterial souls. For it is having *those* souls that raises them above everything else in creation *apart* from the incorporeal angelic substances.

Our definition also clarifies the superiority of angels over the species below humans. We have seen that angels are not superior to them according to (I), so they must be according to (II). I submit we take a very simple explanatory route here: angels share no generic powers with animals, plants, or inorganic bodies[61]. Consider any of them: since the null set is standardly taken to be a proper subset of every non-empty set, (II.i) is trivially satisfied. (II.ii) is not *trivially* satisfied, but it is *evidently* satisfied nonetheless – as brief reflection on what has already been said should demonstrate.

A worry about asymmetry immediately arises, however. For why don't humans turn out to be superior to angels on this definition, contrary to the putative facts of the hierarchy? This result does not follow, due to the difference between the intellects of humans and angels. A proper subset P of angelic powers is a proper subset of human powers – once again, intellect and will. Further, human generic powers minus P – the animal powers along with the specifically *discursive* feature of human rationality – are not wholly explained by or identical to any of the angelic powers. They *are*, however, wholly explained by or identical to the powers of some species to which humans are superior according to (I), namely *animals*.

Tautologically, the human animal powers themselves are identical, generically, to the powers that all animals share as sentient (aware, not necessarily *feeling*) organic bodies. Nevertheless, it might be objected, human rationality is not identical to or wholly explained by any of these powers (otherwise humans would not be superior to animals) since humans have immaterial intellects (like angels) – so how can being an animal explain this at all?

The answer is that we must be careful about what 'this' refers to. We should distinguish between the intellect itself – the capacity for understanding by means of abstraction and the possession of concepts – and its specifically *discursive* nature in humans, which requires the combination and division of the concepts delivered by the intellect and their formation into judgments and inferences. In a broad sense, the intellect encompasses all of these activities – precisely because, when we think of the intellect, we think of the *human* intellect (and possibly the intellect in other animals, if they have it). More narrowly, however, the intellect is a power of understanding not essentially connected to any discursive activity. That is why we can truly say that both God and angels have intellects. The reason that humans have *discursive* intellects – what we call *rationality*, or the power *to reason* – is that, unlike God and the angels, humans are conscious, living *bodies*. Having a body essentially limits what a human can know at any one time, or over time, both qualitatively and quantitatively. It entails having sensory organs with dedicated and finite channels of information of specific kinds. There can be no instantaneous connections between concepts and judgments, as is possible for the immaterial angelic mind. Humans have to interpret the information they get, combine information from different channels or sources (including any innate knowledge), and arrive at further judgments. It is corporeality that makes all of this necessary, so although the human intellect as such is not wholly explained by having a body,[62] it is the discursive nature of that intellect – the power of *ratiocination* possessed by humans – that is wholly explained by humans being bodily creatures. And this is compatible

with humans – like angels – having immaterial intellects. For this reason, (II.ii) of the definition is not satisfied and humans are not superior to angels.

We can also explain, on my definition, why God is superior to a rock. We know that clause (I) does not apply because the powers of a rock are not a subset of the divine powers. We turn, then, to (II): what powers of a rock one might think one does not a proper subset of God's powers? The answer, of course, is that there *are* no such powers. But this is to say that P is the *null set*, and the null set is a proper subset of every non-empty set, including the set of divine powers. But the set of divine powers minus P, which just is the set of divine powers, is in no way explained by or identical to any of the generic powers of a rock or any powers of a species to which God is superior by (I). So, by (II), God is quite evidently superior to a rock. To show that a rock is not superior to God, we note again that the null set is a proper subset of the divine powers that is also a proper subset of the rock's powers, satisfying (I.i). But by (II.ii), the rock's powers minus the null set – that is, the rock's powers – are wholly explained by the divine powers: after all, God created rocks so how could it be otherwise? Note that all we are talking about are the generic bodily powers, which on the classical conception are a direct part of the divine creation. On this conception, rocks are no more superior to water or to electrons than bats are to dolphins. Whatever the explanatory relations between, say, bat flight and mammalian morphology, or between rocks and electrons (rocks are made up of electrons among other particles), it remains that qua bodies, or qua animals, the classical conception sees these archetypes, so to speak, as objects of direct divine creation.[63]

What about God's superiority to man and angels? As to the former, again we must consider part (II). Here, we should say that P consists of the intellect and will, since God also has an intellect and will.[64] However, we see when applying (II.ii) that none of the divine powers minus P – pick any of the 'omni' powers you like[65] – are wholly explained by or identical to any of the human powers or those of any species to which God is superior

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according to (I). Again, with God and angels we see that P consists of will and intellect but also the incorporeal powers. Yet none of the divine powers minus P are explained by or identical to any of the angelic powers or any powers of a species to which God is superior according to (I).

As for asymmetry, are humans superior to God? Again, we refer to (II). A proper subset P of God's powers is a proper subset of human powers, namely intellect and will (II.i).[66] The human powers minus P – the rational and animal powers and (roughly) the powers they entail[67] – are not identical to any of the divine powers. Nevertheless, any human who is an entire special object of divine creation[68] – like the angels – have all of his powers wholly explained by the divine powers in a direct way.[69] Those – nearly all of us – who are not entire special objects of divine creation[69] will have our powers minus P indirectly explained by the divine creative powers or we can think of them as identical to or wholly explained by the powers of animals, to which humans are superior according to (I) – as explained earlier. However we interpret the explanation – and the versions just given are not, I submit, competing explanations – humans do not turn out superior to God.

Perhaps angels turn out to be superior to God on the definition? Fortunately, this is not so either. Again, on (II.i) the proper subset P consists of intellect, will, and the incorporeal powers. On (II.ii), the angelic powers minus P – we can include the receptivity of the angelic intellect to divine communication[70] – are wholly explained by the divine powers, since each individual angel is directly created by God. Each angel is given all of its powers immediately by God as a unique creation – a singleton species - rather than as a member of a created species containing multiple instances. Rocks, by contrast, have their generic bodily powers wholly explained by divine creation of the bodily species containing multiple instances. In between, humans have some of their powers wholly explained by the species to which they belong (animal, body) and others wholly explained by direct divine creation

(intellect and will as parts of the created human soul). It is this intermediate status that ensures that humans are superior to animals and bodies (also plants, given the vegetative powers), are not superior to God.

For anyone suspicious that my definition of metaphysical superiority threatens to conflate the creator and the creature, enough has been said, I submit, to dispel that understandable concern.

6. Conclusion

Although there is still plenty that could and should be said about the hierarchy of being in a modern context, I hope I have done enough to show that the classic Aristotelian-Thomistic hierarchy can, with suitable assumptions taken on and metaphysical prejudices put aside, be defended as coherent in its own right and largely in accord with common sense, given the many assumptions. It may well be that further sub-hierarchies exist and can be embedded within the general hierarchy; many, however, that were recognised until the nineteenth century are rightly rejected for the various reasons given earlier.

Let me emphasise a few points before bringing this discussion to an end. First, nothing presented here is meant to be incompatible with thinking of the hierarchy more loosely, and with some neo-Platonic colouring, in terms of concepts such as Godlikeness, an increase in power or nobility as one ascends the hierarchy, or the retreat from matter. Secondly, the hierarchy I present does not exclude *local* cyclicality – the food chain, for example.[71] Thirdly, the hierarchy does not exclude local *reverse* superiority: the notorious idea that cockroaches would, unlike us, survive a nuclear holocaust, or the thought that tortoises and redwoods put our lifespans to shame, only highlight the fact that the metaphysical hierarchy is not about one-dimensional phenomena such as survival or longevity. Connected to this is the more general fourth point that the hierarchy is not about a

being's mere flourishing in its niche, how it manages as against its competitors for resources, and the like.

Finally, I repeat that nothing I have presented here constitutes an argument for the existence of God – or of angels or anything else, for that matter. The hierarchy can, nevertheless, be viewed as what might be called a 'suggestive schema'. Consider the analogy of coming across a large jigsaw puzzle consisting of thousands or tens of thousands of pieces – and yet missing one single piece. The entire picture, in other words, is complete – but for that single, missing piece. You know what the piece *should* look like; you can even reconstruct it. You just do not know whether it exists anywhere. Still, it would be reasonable to have confidence that it must be *somewhere* – perhaps misplaced or forgotten, or even deemed unnecessary given the virtual completeness of the whole. Yet the belief that it must exist would hardly be the height of irrationality.[72]

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[1] From now on I will omit the qualifier 'Western', on the implicit understanding that I am confining my discussion to this domain. The idea of a chain or hierarchy of being is not

wholly absent from non-Western traditions of thought, though it is far less prominent; see Khomiakov (2005): 989-90 for the briefest of summaries.

[2] Lovejoy (1936).

[3] See, for example: Bynum (1975); Mahoney (1987); Wilson (1980), (1987).

[4] Lovejoy (1936): 60, quoting Alexander Pope, *Essay on Man* (1733): First Epistle, lines 237-41, Pattison (ed.) (1881): 35.

[5] Lovejoy (1936): 47.

[6] Ibid: 47, quoting T.H. Green (1836-1882) who himself, like probably the majority of philosophers since his time, thought such a question unanswerable'. Lovejoy notes the startling contrast between the attitude of Green and those who have come after him with that of thinkers from Plato to the late eighteenth century.

[7] Ibid: 47.

[8] Ibid: 47.

[9] Ibid: 73, 116, 177, inter alia.

[10] Ibid: 59.

[11] Ibid: 59.

[12] Ibid: 52.

[13] Wilson (1980): 260.

[14] Lovejoy (1936): 58.

[15] Ibid: 58.

[16] Lovejoy (1936) chs IX and X.

[17] See Lovejoy (1936) for accounts of the views of these minds Lamarck) and other Evolutionists – in particular Leibniz (ch. V).

[18] Lovejoy (1936): ch. X.

[19] Ibid: 325-6.

[20] Wilson (1980): 256.

[21] Lovejoy (1902): 462, quoted also in Wilson (1980): 257.

[22] More as a general religious tendency rather than any particular denomination. For within the multitude of Protestant denominations, one could find anything from the rigidly hierarchical (Lutheran, Anglican) to the virtually communistic (Levellers, Anabaptists).

[23] For some discussion, see Burtt (1932), especially pp.84-5, 89-90, 175-6, 300-3.

[24] See Peacock (1999): 66 for a modern statement of the principle.

[25] Perhaps best encapsulated in the oft-quoted remark of Stephen Hawing from a 1995 interview (whose original I have not been able to check for veracity): 'the human race is just a chemical scum on a moderate size planet, orbiting round a very average star in the outer suburb of one among a billion galaxies' (quoted by, inter alia, Raymond Tallis in *Philosophy Now* 89 (2012), article entitled 'You Chemical Scum, You').

[26] Lovejoy (1936): 200.

[27] Ibid: 203-4.

[28] Pope, *Essay*: Fourth Epistle, lines 49-51, Pattison (ed.) (1881): 60.

[29] Richardson (1914/1740): 230.

[30] Of many species within the phylum *Annelida* and in other taxa.

[31] Species within the family *Cynipidae*.

[32] Archibald (2014): 8, reproducing a figure from Bonnet's *Traité d'Insectologie* (1745). See the page following the end (p.xxxii) of the Preface to Part 1 of the *Traité* at https://archive.org/details/traitdinsectolog00bonn/page/n41/mode/2up [last accessed 23/04/20].

[33] Lovejoy (1936) *passim*, especially chapter II.

[34] See, for example: Aristotle, *De Anima*, 414a29-415a13, Ross (1931); Aquinas, *Commentary on the De Anima* Book 2, Lecture 5, (1994): 90-96; Aquinas, *Summa Contra*

Gentiles III.22.7, (1956a): 86-7. For Aquinas's account of the hierarchy in the *Sentences*, the *Summa Theologica* and other writings, see Mahoney (1982): 169-72.

[35] A felicitous term of art going back to Locke.

[36] For more on the difference between constituents of essence and powers that flow from the essence, see Oderberg (2011).

[37] As a glance at the Index demonstrates.

[38] Wuellner (1956): 52, principle 210.

[39] Ibid: 54. Perhaps Fr Wuellner is being a little unfair, since it may be the neo-Platonists and their disciples who misunderstood people like Proclus, whilst Lovejoy understood them only too well.

[40] Ibid: 52, principles 216 and 217.

[41] *Summa Theologica* I.47.1 resp.; Aquinas (1921): 257. 'For He brought things into being in order that His goodness might be communicated to creatures, and be represented by them; and because His goodness could not be adequately represented by one creature alone, He produced many and diverse creatures, that what was wanting to one in the representation of the divine goodness might be supplied by another. For goodness, which in God is simple and uniform, in creatures is manifold and divided; and hence the whole universe together participates [in] the divine goodness more perfectly, and represents it better than any single creature whatever.'

(Produxit enim res in esse propter suam bonitatem communicandam creaturis, et per eas repraesentandam. Et quia per unam creaturam sufficienter repraesentari non potest, produxit multas creaturas et diversas, ut quod deest uni ad repraesentandam divinam bonitatem, suppleatur ex alia, nam bonitas quae in Deo est simpliciter et uniformiter, in creaturis est multipliciter et divisim. Unde perfectius participat divinam bonitatem, et repraesentat eam, totum universum, quam alia quaecumque creatura.)

[42] Summa Theologica I.25.6 resp.; Aquinas (1920): 355. '*I answer that*, The goodness of anything is twofold; one, which is of the essence of it – thus, for instance, to be rational pertains to the essence of man. As regards this good, God cannot make a thing better than it is itself; although He can make another thing better than it; even as He cannot make the number four greater than it is; because if it were greater it would no longer be four, but another number. ... Another kind of goodness is that which is over and above the essence; thus, the good of a man is to be virtuous or wise. As regards this kind of goodness, God can make better the things He has made. Absolutely speaking, however, God can make something else better than each thing made by Him.'

(Respondeo dicendum quod bonitas alicuius rei est duplex. Una quidem, quae est de essentia rei; sicut esse rationale est de essentia hominis. Et quantum ad hoc bonum, Deus non potest facere aliquam rem meliorem quam ipsa sit, licet possit facere aliquam aliam ea meliorem. Sicut etiam non potest facere quaternarium maiorem, quia, si esset maior, iam non esset quaternarius, sed alius numerus. ... Alia bonitas est, quae est extra essentiam rei; sicut bonum hominis est esse virtuosum vel sapientem. Et secundum tale bonum, potest Deus res a se factas facere meliores. Simpliciter autem loquendo, qualibet re a se facta potest Deus facere aliam meliorem.)

[43] Wuellner (1956): 52, principle 212 and 214.

[44] *Summa Theologica* I.78.1, Aquinas (1922b): 75-9; *Summa Contra Gentiles* II.95, Aquinas (1956b): 323-5; *Summa Contra Gentiles* II.68, Aquinas (1956b): 203-7. (Note Aquinas indulging a little, in the third location, in some Aristotelian-style biology, albeit this is hardly central to his overall metaphysical view of the hierarchy.)

[45] *Summa Theologica* I.51.1, Aquinas (1922a): 17-19.

[46] Along, perhaps, with what they actively know *ab initio* by their very natures. See further Aquinas, *Summa Theologica* I.58, Aquinas (1922a): 80-94.

[47] I will omit further talk of species *members*, leaving it understood.

[48] Not that I have checked.

[49] Even though angels can *assume* human form, which is not the same as *having* a human body. See further *Summa Theologica* I.51, Aquinas (1922a): 17-25.

[50] In Oderberg (2007): 251 I said the following: '*F*-type capacities are superior to *G*-type capacities just in case the former entail the latter but not vice versa.' This was a very loose way of putting it. Strictly, it cannot be correct since bat-type capacities entail mammalian capacities (because bats are mammals) but not vice versa (not all mammals are bats); yet it is absurd to say that bats are superior to mammals. One might think of defending the one-way entailment view by replying that not all bat-type capacities entail mammalian capacities (e.g. one does not have to be a mammal in order to be able to bite). At the right level of specificity, however, we can see that the reply is specious: the way in which *bats* bite – with their specific teeth and jaw structure, etc. – entails having mammalian capacities. In any case, consider that angelic capacities are superior to human capacities although the former do *not* entail the latter. So the one-way entailment approach I put forward in *Real Essentialism* was meant only as a loose approximation to a more rigorous formulation such as that proposed here.

[51] For more on the vegetative powers, see Oderberg (2020): 85-91.

[52] On the sentient powers, see Oderberg (2020): 91-6.

[53] On which see Oderberg (2020): 101-110.

[54] For a standard explanation of bat wing homologies, see Ridley (2004): 56-7. A look at the Porphyrian Tree will show why this is the case; see Oderberg (2007): 93-105.

[56] Dohrn (1875); for more recent speculation, see Gerhart (2000).

[57] https://www.philosophicallexicon.com.

[58] Intellect itself might be common to both angels and humans, but the *non-discursive* character of the angelic intellect is not; I interpret this as a *second-order* power of angels. Similarly, the discursive character of the human intellect – that is, rationality – is a second-order power of humans. It is a feature of their specific kind of intellect and is unshared with angels.

[59] But not according to (II), which would make this half of the definition of superiority circular!

[60] *Summa Theologica* I.50.4, Aquinas (1922a):13-14.

[61] Doesn't my diagram of the hierarchy group angels, humans, animals and plants as *living*? Yes, but in the case of angels and the rest I take this to be an *analogical* grouping, not a literal sharing of powers. Angels do not literally grow, develop, self-maintain their internal processes, and so on.

[62] Though it partly is, inasmuch as the human intellect is specially created to inform *matter*, i.e. to be the form of a body – unlike the specially created angelic intellect.

[63] Note in passing: there is no space to demonstrate that the superiority to prime matter of all species and entities above it also conforms to the definition. I leave this as an exercise for the reader, with the hint that the powers of prime matter are no more than passive receptivity to form and passive receptivity to spatio-temporal dimensionality. (Feel free to email me your solution and I will give my response.)

[64] I do not see an incompatibility between man's being made *in the image* of God (implying a non-literal comparison between one and the other) and man's having some of the powers – intellectual and volitional – God has, albeit not *in the way* God has them.

[65] Including the *second-order* powers of the powers belonging to P – the wholly unlimited character of the divine intellect and the totally unconstrained freedom of the divine will, for example.

[66] We are, to reiterate, not made in the image of God if this much is not true.

[67] More precisely: the powers they entail that do not also entail the powers in P.

[68] The first human, so most defenders of the hierarchy would believe.

[69] Even though our souls are (including our intellects).

[70] This is an aspect of the specific non-discursivity of the angelic intellect, which is passive in nature. God also has a non-discursive intellect but it is active in nature. (I have shown this on the diagram.) So we can truly say that God and the angels have intellects, but as between them, and between either of them and humans, the specific intellectual powers differ markedly.

[71] I promised the rapper Zuby I would mention his remarkable observation on social media: 'What if humans are actually farmed by plants? They feed us oxygen until we get big, die and become fertilizer for them' (tweet by @ZubyMusic on 2 April, 2020). There is more smartness in those words than I have read in many philosophical texts. I have not verified whether Zuby is the primary source, but I doubt it was a professional philosopher.

[72] An earlier version of this paper was presented at the Humane Philosophy seminar, Oxford, in February 2020. I am grateful to the participants for the many comments received there. I would also like to thank two anonymous readers for the editors of this volume, who made many suggestions that have led to significant improvements.