

Godlike Instruments: Notes toward the Regeneration of Science

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Introduction: Nature without Naturalism

Reinhard Hütter's magisterial *Bound for Beatitude* will do much to confirm its author's standing as a leader of the new Thomist school whose emergence is one of the most interesting and encouraging developments in recent Catholic theology. The book represents—among other things—a signal contribution to the revival of an authentically Thomist account of man's constitutive Godwardness. As Hütter so ably shows, this account is based primarily on the transcendence of the intellectual soul, whose thirst for truth cannot be slaked by anything less than the divine essence, but it also honors the soul's connatural union with the body, which underscores man's status as a wayfarer journeying to God from, through, and with the material creation. For Hütter's Aquinas, man's Godwardness is an *essentially* world-mediated immediacy to the Creator: an ontological ordination toward God whose nature requires a historical activation beginning in the arcane counsel of providence and reaching us through the economy that reveals and fulfills the providential counsel in space and time.

Re-reading Thomas with Hütter, then, we discover that Aquinas does full justice to man's worldliness—his belonging squarely to the visible world—without immuring him in any purely this-worldly immanence. Even more, we discover that the Angelic Doctor does this justice *because* he refuses to confine man within the world. Hütter's Thomism offers us a salutary reminder that man's Godwardness, while presupposing his worldliness, also demands and founds it in turn.

Hütter recovers Thomas's anthropology by exhibiting (*inter alia*) the inex-

tricable unity of ecstatic Godwardness and self-perfective finalism that constitutes the figure of man. But, Hütter also shows, this interweaving represents a perfection realized in analogically diversified modes by the whole universe of beings. Every creature is ordered to a proper completion, which in turn coincides with an assimilation to God appropriate to its nature and characteristic natural capacities. This insight is the starting-point of the present meditation, which is devoted to continuing the retrieval of nature without naturalism undertaken in *Bound for Beatitude*.

In what follows, I will be arguing that bodily substances achieve their Godward assimilation by serving as teleological instruments of God's providential governance. Bodily substances, I contend, are Godlike instruments the Creator uses to direct them to himself and to the natural ends perfecting their assimilation to him.¹

This thesis represents an intentional challenge to the ontology of scientific naturalism (a term I will define presently). But it also calls into question the assumption that science stands or falls with a *methodologically naturalist* abstention from all consideration of teleology. This assumption deserves contestation. For if the visible world is chiefly a network of nature-bearing bodily substances, and if these are end-seekers, methodological naturalism (as just characterized) is both extra- and anti-scientific: the former because it is not required by the object of scientific investigation; the latter because it obscures this object from the view of science itself.

Anyone who challenges the supposed necessity of methodological naturalism will be expected to reassure his readers that he is not "against" the scientific enterprise as such—that he is not calling *science* itself into question, but is merely challenging the *scientistic* mythos propagated by ideologues in the name of science. This expectation presupposes the existence of some bright, clear, immovable boundary neatly separating science and scientism both in reality and in the minds of scientists. Unfortunately, the boundary is much more fluid, discontinuous, and obscure than all that. For so long as science abstracts from nature's end-seeking (and its instrumental role in God's providence), but has no intra-scientific way of correcting for the abstraction, it is structurally tempted to reify the result-

¹ My main focus, then, is on corporeal substances. Each of these is endowed with a respective "nature" (*physis*): an innate principle of motion and rest belonging to its bearer *per se* and to the extent that the bearer is itself a *per se* unity (see Aristotle, *Physica* 2.1.192b20–23). Nature, so understood, is an analogical perfection. It exists in heterogeneous forms that organize themselves into a coherent network through common convergence on a single end. Already for Aristotle, this end is co-participation in divine actuality, which God liberally communicates as the common good of the universe (see *Metaphysica* 12.10.1075a11–25).

ing *abstracta*—and then to inflate them into an ontology that absorbs every other feature of reality into a totalizing naturalism. This propensity to reifying abstraction is both a cause and an effect of the attempt to make the world safe for science by making it look empty of God.

In challenging the reification of the *abstracta*, I am not rejecting the *abstracta* themselves or denying their capacity to reveal real features of the natural world. Rather, I am suggesting that it would be better for science—and so more scientific—to disclose these features without pretending that they exist outside of a teleological cosmos. Of course, science cannot ever really succeed in ignoring the actual cosmos or its finalistic order. The moment it did so, it would forfeit its capacity for all those astonishing discoveries that, properly understood, constitute evidence for, rather than against, universal teleology. As Conor Cunningham put it in a private communication to me, “here again, when you push through the natural sciences—especially physics, but all of them (chemistry can be very sexy)—you enter the most marvellous of worlds, one that simply does not correspond to the straw ideologies.”

The attempt to abstract cleanly and permanently from all natural finalism is not just bad metaphysics, but also bad science. This abstractive project prevents science from correctly interpreting its own findings while leaving it vulnerable to self-conflation with naturalist ontology. In order to obviate these deficits, science must re-learn to make explicit and systematic its still mostly tacit and unwanted reliance on natural end-seeking. Only thus can it achieve its full potential and become all it is meant to be in God’s providential plan.

The re-orientation I am recommending would of course be difficult and dramatic. It would, in fact, require nothing less than the death of science to its current form. But this death, like that of the grain of wheat in the Gospel, would be a fruitful one. It would be the path to a resurrection enabling current science, along with everything true, good, and beautiful already proper to it, to rise into a new synthesis of the sort C. S. Lewis describes in *The Abolition of Man*:

Is it, then, possible to imagine a new Natural Philosophy, continually conscious that the “natural object” produced by analysis and abstraction is not reality but only a view, and always correcting the abstraction? I hardly know what I am asking for. I hear rumors that Goethe’s approach to nature deserves fuller consideration—that even Dr. Steiner may have seen something that orthodox researchers have missed. The regenerate science I have in mind would not do even to minerals and vegetables what modern science threatens to do to

man himself. When it explained it would not explain away. When it spoke of the parts it would remember the whole. While studying the *It* it would not lose what Martin Buber calls the *Thou*-situation. The analogy between the *Tao* of Man and the instincts of an animal species would mean for it new light cast on the unknown thing, Instinct, by the only known reality of conscience and not a reduction of conscience to the category of Instinct. Its followers would not be free with the words *only* and *merely*. In a word, it would conquer Nature without being at the same time conquered by her and buy knowledge at a lower cost than that of life.²

The ideal of regenerate science Lewis presents in this passage is not an incitement to utopianism, but an invitation to relinquish it. It is a call to abandon the utopian fever dream of technological domination. As Lewis himself shows, this dream is at least as bad for us as it is for our fellow creatures. For to the extent that technological domination neutralizes what he calls the *Tao*, it also neutralizes man's ordination to conformity with the *Tao*, which is the very thing that makes man human. Technological domination puts its wielders on the road to becoming the "conditioners" of Lewis's thought experiment. These are the post-human men who, having stepped out of the *Tao*, have ceased to be human in any recognizable sense.³

Now, to the extent that science is prone to ontological naturalism, it is also prone to technological dominationism.⁴ These interwoven temptations place the scientific guild before a stark choice it has neither the right nor the luxury to ignore: Either science submits to an ongoing Lewisian regeneration, with all dramatic conversion that it would entail—or science leaves itself defenseless against a naturalist ontology that, by pretending to drain the universe of every trace of the *Tao*, conspires in the technological

² C. S. Lewis, *The Abolition of Man* (New York: Harper Collins, 2009), loc. 78–79, Harper Collins e-book.

³ See Lewis, *Abolition of Man*, loc. 63–64.

⁴ I readily grant that most scientists seek contemplative understanding of the natural world for its own sake. So long as they abstract their contemplation from natural finalism, however, they are prone to representing the contemplated as a non-finalistic object. This representation is already a piece of scientific naturalist ontology. It also underwrites technological dominationism, since a non-finalistic object is one that almost by definition is unprotestingly available for human purposes. Hence my thesis: Even a scientist seeking pure contemplation for its own sake will do so both naturalistically and technologically—if, and to the extent that, he approaches the contemplated as a mere non-finalistic object. (Whether a given scientist actually does so in any particular case of course depends on more than just his explicit theoretical commitments.)

abolition of man. In what follows, I try to show that the embrace of the former option would not amount to the suicide of science, but would mean a life-giving metamorphosis into the glory destined for it.

Naturalism and Atheism

If, as Lewis suggests in *The Abolition of Man*, the true science of nature is still aborning, scientific naturalism (even when repackaged as a “purely methodological” option) distracts us from *scientia*’s still unfinished state with a delusive image of completion. Science, the naturalist at least tacitly holds, has already grasped the secret of mastering nature, and so has broken through to its definitive, even eschatological, horizon. In principle and on the level of method, it is already at the end—even if in fact and on the level of results it is always re-living the breakthrough it has achieved once and for all *in nuce*.

The scientific naturalist’s eschatological mythos is underwritten by a corresponding ontology resting on at least two interrelated claims. The first claim is that the domain investigated by science is all there is. The second is that whatever cutting-edge physics reveals to be “fundamental” is the really real. Modern physics, here, replaces metaphysics as the science of being as being.⁵ Only this is a replacement that also drastically changes what the beingness of being consists in.

If the two claims I just described were true, the really real could not consist in actuality, much less in the “to be,” or *ipsum esse*, that Thomas Aquinas calls “the actuality of all acts.”⁶ No, the *ontōs on* would necessarily consist in physical entities (taking “physical” and “entity” in the broadest sense), or in so-called “natural laws” (or law-like patterns), or in some combination of the two. But how could physical entities, or laws, or their combination be the really real? Indeed, how could such things exist at all without sharing in the actuality of *esse*, outside of which there is nothing but sheer non-entity?⁷

⁵ For a decisive critique of the “myth of the base,” see Conor Cunningham’s forthcoming *True Reduction: A Theology for Science After “Naturalness.”* By means of a sophisticated engagement with contemporary physics, Cunningham shows in precise, intra-scientific detail how abandonment of the aforesaid myth can help the discipline both fruitfully overcome its current theoretical crises (which seem to herald a new paradigm shift) and find its place within a web of knowing no longer dominated by fantasies of a purely bottom-up reductionism.

⁶ Thomas Aquinas, *De potentia*, q. 7, a. 2, ad 9: “What I call *esse* [is] the actuality of all acts” (“Hoc quod dico *esse* [est] actualitas omnium actuum”). Unless otherwise stated, all translations are my own.

⁷ Every object-like candidate for the naturalist really real is itself a determinate

The scientific naturalist assumes a metaphysics that replaces the actuality of being (which is analogically realized in all things) with supposedly basal objects (which are taken as univocal templates of the really real). This metaphysics seems to commit a gross category error that renders it untenable to the point of self-contradiction.⁸ But both the naturalist's metaphysics and its untenability, I want to suggest, are bound up with his attempted elimination of any ontological space for a God whose being exceeds the all-too-narrow confines of the naturalist *ontōs on*.⁹ Whatever the naturalist's intentions, his naturalism amounts to an ideological bid to establish an atheistic worldview through a drastic redesign of the nature of being itself.

A Most Liberal Giver

At this stage of the argument, the scientific naturalist might retort that the effective elimination of an extra-mundane Creator is the necessary price to be paid for protecting the rational coherence of things on which the possibility of science depends. "Does not the availability of the universe for science," he might object, "hang on its ability to constitute a perfectly self-contained system impervious to invasion by an arbitrary supernatural agent?"

But why assume, I ask in reply, that a Creator would have to be an arbitrary busybody from beyond the skies? Why postulate some inevitable competition or rivalry between the Creator and the creaturely causes he himself has brought into being *ex nihilo*? Is it not unreasonable to suppose that a Creator who ungrudgingly gives his creatures existence

entity. As such, it raises the same inevitable question as all the others: Why should this thing be the really real rather than anything else? Why, indeed, should there be something (finite) rather than nothing (finite) at all? To suppress this question is to suppress the wonderment that gives rise to every cognitive enterprise, including that of modern science itself.

- ⁸ Inasmuch as a hypothetical basal object is finite, it cannot be self-existent. But if it is not self-existent, it must participate in the actuality of *ipsum esse*. By the same token, to deny that it does so is to commit oneself to the proposition that it is both finite and self-existent at the same time and in the same respect. It is this proposition I am rejecting as self-contradictory.
- ⁹ Someone unduly impressed by scientific naturalism but unwilling to discard all belief in God might attempt to salvage the notion of divinity by placing it "beyond being"—by installing it, that is, in splendid isolation above the realm of what the scientific naturalist would regard as the really real. The trouble is that such a God would be transcendent without being immanent. By the same logic, he would be excluded from any discernible involvement in the world of beings. But is not such a *Deus otiosus* perfectly indistinguishable from pure non-entity?

would begrudge them causality? Would such an envious refusal to bestow causation not “contradict God’s goodness, whose tendency is to share itself” by making things “similar to [him], not only by being, but also by acting as real causal agents”?¹⁰

Imagine that an English professor, after having accurately recounted the story of *Emma* without any mention of Jane Austen or her authorial intentions, were to cite his performance as proof that the novel’s internal inner completeness eliminated any need to ascribe it to an author, especially one so crudely anthropomorphic as “Jane Austen.” It is evident that our imaginary professor would have point-missingly failed to grasp that, far from reducing Jane Austen to an *auctrix otiosa*, the inner completeness of *Emma*’s plot manifests her total causal responsibility for the entire work down to the smallest detail. But just as Austen is the source of her characters and of everything they do within the secondary world of Highbury, God is the source of creatures and of everything they do within the primary world of the cosmos.¹¹ If Emma, Harriet, Frank Churchill, and the rest do not act *in spite of* Austen’s authorship, but *thanks to it*, why should God’s creatures not act thanks to his? Why should God be any less

¹⁰ Aquinas, *De potentia*, q. 3, a. 7, corp.: “Repugnat etiam divinae bonitati, quae sui communicativa est; ex quo factum est quod res Deo similes fierent non solum in esse, sed etiam in agere.”

¹¹ If an otherwise educated person who had unaccountably never heard of Jane Austen were given a copy of *Emma* from which both the title of the book and the author’s name had been carefully removed, he would have little trouble discovering that he holds a work of fiction in his hands. Attention to the difference between narrative voice and narrated plot would suffice for this discovery. It might seem, then, that the comparison I am drawing between *Emma* and the universe question-beggingly smuggles the evidence of narrative voice, i.e., of the story-teller’s authorship, from the former into the latter. I do not concede, however, that I am guilty of such a *petitio principii*.

First of all, the universe *does* display something analogous to a distinction between plot and narrative, inasmuch as its natural history is indeed just that: a narratable *history*, rather than an accidental series of brute facts. True, it requires an intelligent being such as man to see the story as a story, and so to narrate it as such, but I take this very requirement to be evidence that the distinction between plot and narrative is implicitly, yet objectively present *in potentia* in the structure of the universe itself. Second, even quite apart from this first point, there remains a crucially important logical distinction between the English professor’s recounting the plot of *Emma*—his detailing how its action unfolds from an initial, plot-immanent event—and his explaining why the plot exists in the first place. For both of these reasons, the internal completeness of a plot-like, universal natural history would not *ipso facto* count as evidence against the existence of a narrating author. If anything, it would serve as evidence for such an author’s existence.

generous than the human author whose inventiveness and skill derive from participation in his?¹²

“Do not be deceived, beloved brethren: Every good gift . . . comes down from the Father of lights” (Jas 1:16–17), who, unaffected as he is by even the slightest “shadow of turning” (Jas 1:17), “gives to all without reservation and without blame” (Jas 1:5). Now, if, for Aquinas (and the tradition he represents), one of the goods God bestows with such unrepentant liberality is causality, the scientific naturalist faces an uncomfortable choice. Either he must show why even this sort of divine Giver would unexpectedly turn out to be an arbitrary supernatural busybody after all—or else, failing that, he would have to prove *on other grounds* that “everything showing up [*apparet*] in the world can be completely effected [*compleri*] by other principles, supposing that there be no God.”¹³ But how, I ask, would

¹² Physicist Stephen M. Barr deploys a similar analogy to illustrate a related point concerning the difference between the temporal beginning of the universe and its supra-temporal metaphysical origin: “A traditional analogy compares God, the Author of the universe, to the human author of a book or a play. One can distinguish the *beginning* of the book, in the sense of its opening words or sentences, from the *origin* of the book. The entire book, not just the beginning, has its origin in the author’s imagination. Every word of the text is part of the text by virtue of the author’s decision that it should be. In the same way, the whole universe and all its parts are equally created by God. . . . The events in a book have a certain sequence that constitutes the ‘timeline’ of the book’s plot. Within the plot of the book some events are causes of later events. Something that happens on page thirty causes something else to happen on page fifty. But the *author* causes the *book* at a different level altogether. On one level, Polonius dies because Hamlet stabs him, but, on another level, Hamlet stabs Polonius and Polonius dies because that is what Shakespeare wrote. The author causes every part of the book equally. Moreover, while events in the book, including its ‘beginning,’ have some definite location in the plot’s timeline, the *creation* of the book has no such location: the author conceiving of the book’s plot in his mind is not an event that takes place on a certain page in the book’s plot. The author is external to his work, and his act of creation is not an episode within it” (*Modern Physics and Ancient Faith* [South Bend, IN: University of Notre Dame Press, 2003], 262).

¹³ Thomas Aquinas, *Summa theologiae* [ST] I, q. 2, a. 3, obj. 2: “Omnia quae apparent in mundo, possunt compleri per alia principia, suppositio quod Deus non sit.” It is instructive to consider the use that Thomas’s imagined objector makes of the verb “reduce” a little later in this same text. He admits *two* possible *termini* of reduction: on the one side, reason and will, whose sole locus shifts *ex hypothesi* to the human being; on the other side, nature, since “the things that are natural are reduced to the principle that is nature” (“Ea quae sunt naturalia, reducuntur in principium quod est natura”). The modern scientific naturalist, by contrast, is less generous than his medieval predecessor, in that he is eager to narrow the gap between reason and nature, if not to eliminate it altogether. To make matters

the scientific naturalist go about substantiating this claim in a non-question-begging manner, especially if, as noted in the previous section, his own metaphysics is untenable to the point of self-contradiction?

The naturalist tries to eat his cake (he denies the actuality of being natural things exist by sharing in) and have it too (he nonetheless prides himself on defending naturalness against supernatural invasion). But what if doing justice to nature requires eschewing naturalism rather than embracing it? What if Thomas (among many others) is right in thinking that natural causes depend for their being and operation on the First Cause?

One might of course object that creaturehood is ontologically enslaving. But this objection is based on a gratuitous assumption. Since God creates everything out of pure, needless generosity, creaturely dependence converts with reception of existence and causality. Dependence is a constitutive good. Even more, it is a divine gift, which God gives, not in order to enslave things, but in order to liberate them for dynamic participation in, and likeness to, himself:

It is evident . . . that even if a natural thing produces its proper effect, it is not superfluous for God to produce it, because the natural thing does not produce [this effect] except by the divine virtue. Nor is it superfluous, even if God can produce all effects by himself, that they be produced by some other causes. For this is not on account of the insufficiency of the divine virtue, but on account of the immensity of God's goodness, thanks to which he wished to communicate his likeness to things, not simply to the extent of giving them to be, but also to the extent of giving them to be causes of other things. For it is in these two ways that all creatures commonly attain to Godlikeness. It is also by this means that the beauty of order appears in created things.¹⁴

worse, he typically assumes that nature itself is a dead "mechanism" devoid of any inner principle even remotely analogous to *ratio*. One of the best-known recent dissenters from this view is Thomas Nagel, who nevertheless resembles Aquinas's objector in one crucial respect. While arguing that the presence of mind in nature demands a richer, post-reductionist science, Nagel rules out any transcendent divine cause (of which he incidentally has a rather crude conception) as a principle for explaining the Whole. See Nagel's much-discussed *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (Oxford: Oxford University Press, 2012).

¹⁴ Thomas Aquinas, *Summa contra gentiles* [SCG] III, ch. 70: "Patet etiam quod, etsi res naturalis producat proprium effectum, non est superfluum quod Deus illum producat: quia res naturalis non producit ipsum nisi virtute divina. Neque est

An Irrelevant Hypothesis?

At this point, the scientific naturalist might counterattack by asserting the irrelevance of knowing the Creator to the proper work of science. There is admittedly something plausible about this assertion. Given that the Creator is not a body (or any sort of creature at all), his exclusion from the purview of natural science would be legitimate *to the extent that* science's *exclusive* theme was the universe of bodies *taken as objects of a certain empirico-mathematical method*. Unfortunately for the naturalist, however, it is not at all clear that science is obliged to pay exclusive thematic attention to whatever it can represent as an object of this sort. The naturalist's insistence to the contrary looks much more like a gratuitous postulate than an actual requirement of either nature or natural science.

To the extent that empirico-mathematical study sets aside natural finalism, as I was saying earlier, its data are one-sided *abstracta*. In order, therefore, to understand properly what these *abstracta* reveal and how they do so, science needs to re-embed them in the concrete actuality of the really existing world. But if science needs to return to the actual world in order to interpret its abstract data, why should it not also need to acknowledge the Creator in order to be present to the actual world as it really is? Why should science not, like man himself, achieve its worldward perfection in an upward flight of Godward ecstasy?¹⁵

superfluum, si Deus per seipsum potest omnes effectus naturales producere, quod per quasdam alias causas producantur. Non enim hoc est ex insufficientia divinae virtutis, sed ex immensitate bonitatis ipsius, per quam suam similitudinem rebus communicare voluit non solum quantum ad hoc quod essent, sed etiam quantum ad hoc quod aliorum causae essent: his enim duobus modis creaturae communiter omnes divinam similitudinem consequuntur, ut supra ostensum est. Per hoc etiam decor ordinis in rebus creatis apparet."

- ¹⁵ In reality, science never succeeds in escaping the actual world. It is always at least implicitly returning the *abstracta* to their natural origin. By the same token, it is also always at least implicitly returning both to the Creator. To be sure, this hidden anaphora is just that: hidden. It is certainly not acknowledged as such by the scientific guild. Nevertheless, it is structurally implicit in the guild's actual practice and accounts for all its successes—however few of its members understand or welcome this fact.

The structural implication I am talking about seems to call for an act of explicitation. Where, then, does the responsibility for this act lie—with science or with religion? My answer is: "both." Science, too, I would argue, bears a specific responsibility for explicitly acknowledging God. This thesis, let me stress, has nothing to do with a sacralization of science. On the contrary, one of the thesis's implications is that science comes into its own by acknowledging its creaturely status as the non-divine activity of a non-divine being. The point is simply that this self-knowledge on the part of science requires its recognition of its positive,

The scientific naturalist might attempt to parry this suggestion by claiming that science should content itself with exploring the being and order of the universe on its own immanent terms. The problem with this rebuttal is that the *Urphänomen* of being-and-order awakens a wonderment that structurally imposes the question of metaphysical origin: What is the source of being-and-order itself?¹⁶ The same wonderment that awakens the desire to understand nature on its own terms awakens the desire to know nature's Cause and Origin as well. How, then, can we suppress the latter desire without injuring the former? Indeed, are we even talking about two desires, rather than two expressions of one and the same desire?

The naturalist might attempt to obviate this question by re-proposing the ontology I critiqued in the "naturalism and atheism" section above. He might insist that "being" is nothing over and above the supposedly fundamental entities disclosed by cutting-edge physics; that "order" is nothing over and above the law-like patterns discernible in these entities' behavior; and, finally, that both being-so-reduced and order-so-reduced are basic, underived brute facts. Alternatively, the naturalist might postulate an infinity of "universes" that, by reason of their very infinity, axiomatically guarantee the actualization of all possibilities (including those of being and order themselves) without the intervention of any divine cause. The trouble with these two strategies, and others like them, is that the universe (together with the endless multitude of its supposed *Doppelgänger*s) structurally resists the pure self-enclosure the naturalist is striving for. This is not because the universe lacks immanent completeness, but because its completeness consists in participating a perfection—*ipsum esse*—that originates from an extra-universal source:

[Natural] causes share in one effect, namely, *esse*, although they all severally have their proper effects in which they are distinguished. Heat, in fact, makes something *to be* hot, and the builder makes the house *to be*. They agree, therefore, in respect to the fact of causing *esse*, but they differ in that fire causes fire and a builder causes a house. Consequently, there must needs be some cause higher than

intrinsic, creaturely relation to God. For a decisive exposition and defense of this thesis, see Michael Hanby's *No God, No Science?* (Chichester, England: Wiley Blackwell, 2013).

¹⁶ To ask this question is not to deny that being and order are immanent in the system of natural things, but to suggest that this very immanence—like the internal completeness of the universe itself—ineluctably raises the question of metaphysical origin.

all the others, a cause by whose power all things cause *esse* and of which *esse* is the proper effect. And this cause is God. Now, since the proper effect of every cause whatever proceeds from it according to the likeness of its nature, it must be the case that the very thing that is *esse* be God's substance or nature. And it is on this account that the *Book on Causes* says that an intelligence does not give *esse* except insofar as it is divine, and that the first effect is *esse*, and nothing at all was created before it was.¹⁷

The Fifth Way

How, then, does the primordial phenomenon of being-and-order reveal a divine Creator as its source? The famous "fifth way" that Aquinas sketches in the *Summa theologiae* can be read as furnishing an answer to just this question. Here is how the *quinta via* runs as I translate it:

The fifth way is based on the governance of the universe. For we see that some entities that lack cognition, namely, natural bodies, operate for the sake of an end. This is apparent from the fact that they always, or very frequently, operate in the same manner so as to attain what is best. This makes it evident that it is not by chance, but by intention that they arrive at the end. But entities lacking cognition do not tend to the end unless they are directed by something having cognition and intelligence, as the arrow [is directed] by the archer. There is therefore something intelligent, by which all natural things are ordered to the end, and this we call "God."¹⁸

¹⁷ Aquinas, *De potentia*, q. 7, a. 2, corp.: "Omnes autem causae creatae communicant in uno effectu qui est esse, licet singulae proprios effectus habeant, in quibus distinguuntur. Calor enim facit calidum esse, et aedificator facit domum esse. Conveniunt ergo in hoc quod causant esse, sed differunt in hoc quod ignis causat ignem, et aedificator causat domum. Oportet ergo esse aliquam causam superiorem omnibus cuius virtute omnia causent esse, et eius esse sit proprius effectus. Et haec causa est Deus. Proprius autem effectus cuiuslibet causae procedit ab ipsa secundum similitudinem suae naturae. Oportet ergo quod hoc quod est esse, sit substantia vel natura Dei. Et propter hoc dicitur in Lib. de causis, quod intelligentia non dat esse nisi in quantum est divina, et quod primus effectus est esse, et non est ante ipsum creatum aliquid."

¹⁸ Aquinas, *ST I*, q. 2, a. 3, corp.: "Quinta via sumitur ex gubernatione rerum. Videmus enim quod aliqua quae cognitione carent, scilicet corpora naturalia, operantur propter finem, quod apparet ex hoc quod semper aut frequentius eodem modo operantur, ut consequantur id quod est optimum; unde patet quod non a casu, sed ex intentione perveniunt ad finem. Ea autem quae non habent cognitionem, non tendunt in finem nisi directa ab aliquo cognoscente et intelligente, sicut sagitta a

It is “apparent,” Thomas writes, that at least some “natural bodies . . . always, or very frequently, operate in the same manner.” Typically, they do so by moving toward definite termini. These termini, moreover, are not merely arbitrary stopping points, but ends that fittingly fulfill unrealized potential expressed in the motions tending toward them. It is this fitting fulfillment Thomas has in mind when he observes that the reliably regular operations he speaks of aim at “attain[ing] *what is best*.”

A contemporary reader (like the scientific naturalist) might object that Aquinas is merely postulating final causality without sufficient argument. This objection rests on a misunderstanding. We are not dealing with a postulation of what only some believe, but with a restatement of what all men know—with a bringing-to-awareness of a primordial phenomenon that everyone, including the scientist, necessarily takes for granted. As Leon Kass has pointed out, even Darwin assumed the existence of teleological patterns in the natural world.¹⁹ What Darwin disputed was not the teleological phenomenon, but the inference to an extra-mundane intelligence supposedly required to explain it. Darwin’s thesis, in other words, was that, for scientific purposes (at least), the teleological phenomenon was adequately derivable from an undesigned interplay of chance and necessity—in the form of natural selection (necessity) culling random variations (chance).

Thomas’s very attempt to craft a demonstration of God’s existence based on the phenomenon of natural teleology suffices to prove his awareness that this phenomenon, while primordial in intra-worldly terms, is not simply self-explanatory in an absolute sense. One reason the phenomenon cannot be absolutely self-explanatory—at least not on Thomas’s Aristotelian principles—is that it is bound up with motion. Indeed, it coincides materially with (end-oriented) motion itself; the fifth way recapitulates the first way *ex motu*. But “all things that are mobile and capable of failing are necessarily reduced to some first principle that is immobile and necessary *per se*.”²⁰ To deny this necessity, Thomas thinks, is to commit oneself to the

sagittante. Ergo est aliquid intelligens, a quo omnes res naturales ordinantur ad finem, et hoc dicimus Deum.”

¹⁹ Leon Kass, *Towards a More Natural Science: Biology and Human Affairs* (New York: Free Press, 1985), 258–64.

²⁰ Aquinas, *ST I*, q. 2, a. 3, ad 2: “Oportet autem omnia mobilia et deficere possibilia reduci in aliquod primum principium immobile et per se necessarium.” Thomas’s use of the verb “reduce” is significant. It suggests that the interesting question is not whether science should reduce phenomena to principles, but which principles it should reduce them to and by what methods it should do so. This is not to say that Thomas would rule out any matterward reductionism. Even on Aristotelian and

claim that the potential, as such, is either self-actualizing or self-existent. To advance such a claim, however, is to assert that the potential as such is equivalent to the actual as such—and thus to run afoul of the principle of non-contradiction.

What cause, then, is adequate to account for the teleological phenomenon? If we attend to the content of the phenomenon itself—if we consider end-oriented operation on its own terms and according to its own manifest idea—we notice that it involves a reliable and intelligible nexus between motions and ends. But a reliable, intelligible nexus between motions and ends cannot itself be, or consist in, a chance conjunction. A chance conjunction, after all, is simply not the sort of thing capable of showing up “always, or very frequently . . . in the same manner.” Even Darwin understood that adaptation, looked at as a survival-promoting relation between the organism and its environment, is not itself a chance conjunction, but a teleological fit—even though this fit, in his view, has a non-teleological pre-history based on the undesigned interplay of chance and necessity.

But if the intelligible, reliable nexus displayed in the teleological phenomenon is not a chance conjunction, is it the outworking of what Thomas elsewhere calls the “necessity of matter”?²¹ Is it, in other words, the result of a deterministic pressure exerted by a given material on the shape and direction of motion? Here, too, the answer must be negative. If, in fact, the material is to exert deterministic pressure in any causally relevant way (what I will label *determination1*, the determination by which material determines an effect), it must itself already have a determinate

Thomistic premises, both material potency and inanimate being serve as a kind of foundation for actuality and living nature, respectively. Nevertheless, this foundation is not absolutely free-standing or self-explanatory, and matterward reduction will end up wrongly eliminativist if it forgets that. Natural bodies, after all, hold together by nature (in the Aristotelian sense), while nature, in its turn, is primarily and architectonically form—even though the form in question is one naturally and essentially incarnate in some proportionate bodily matter (whose properties are thus appropriate objects of natural scientific investigation).

²¹ *Necessitas materiae* (Thomas Aquinas, *De principiis naturae*, ch. 4). Thomas’s (brief) discussion of the necessity of matter in this text is based on Aristotle’s account of the relationship between necessity and the end in *Physica* 2.8. The Aristotelian account, in its turn, recalls Socrates’s argument in *Phaedo* 99a4–b6 for the distinction between that which is a cause in the proper sense and that without which the cause in the proper sense cannot cause. The former is an end, the latter a necessary material condition of its achievement. (This distinction seems to go hand in hand with a view of the agent as an entity both capable of grasping ends and embodied in manifold ways that condition, constrain, and occasion its pursuit of them.)

form (what I will call determination₂, the determination by which the material itself is determined to be causally relevant). The repeated impact of Michelangelo's hammer on his chisel, for example, plays a role in determining₁ the shape of the statue, but only on the condition that it itself has a determinate₂ quantitative-qualitative form that Michelangelo's apprentice (to use another example) might approximate but can never replicate perfectly. Taken by itself, neither the hammer nor the chisel can give itself this determination₂, which can come only from an agent—Michelangelo—initiating work that, while taking account of the necessity of matter, is not itself originated by this necessity.

One could, of course, reply that every individual instance of the *necessitas materiae* gets its precise shape or determinate₂ form from a previous one. But even if this were true, it would still leave unexplained the ontological relationship between deterministic₁ pressure and the formal determination₂ it requires to be effective. In order to account for this ontology, we must assign the necessity of matter to the order of potency.²² The *necessitas materiae*, we must say, is something like potential work-energy harnessed for (and/or as) functionally ordered equipment. But if the necessity of matter is potential, it must owe its concrete efficacy and causal relevance to a distinct principle belonging to the order of actuality. To deny this is to commit oneself, once again, to the proposition that the potential, as such, is either self-actualizing or self-existent, and so to embrace yet another contradictory identification of potency as such with actuality as such.²³

²² To be sure, the necessity of matter, when looked at concretely in context, is an (instrumental) efficient cause that imposes determination₁. Taken precisely, however, it is merely in potency to this efficiency. It is only when an agent harnesses the *necessitas materiae*, and so actualizes the potential in question, that both the material and the necessity do any real determining₁ work.

Even then, however, the determining₁ work they do does not originate in them, but in the agent. Michelangelo's hammer blows do achieve real work, but only insofar as he produces and directs them with his consummate skill. This is not to deny, of course, the indispensability of the material. It is simply to insist that the indispensability of the material presupposes agential end-seeking in its turn. If the material is indispensable, it is as (potential) equipment for a task, equipment whose concrete constraining power is a hypothetically necessary condition of the achievement of the task itself.

²³ The scientific naturalist might object here that my account of the *necessitas materiae* holds, if at all, only for the realm of art, but not for the realm of nature. The trouble with this rebuttal is that the analogy between art and nature is the basis of all scientific study of the natural world. To deny this analogy is to undermine science, even science of a mechanistic stripe—if, at least, talk of art-like "mechanisms" is to have any meaning at all. But we logically back ourselves into just such

The teleological phenomenon, then, cannot be adequately described on its own terms either as a chance conjunction or as an outworking of material necessity. Can we supply the missing adequacy by describing the phenomenon as an undesigned *interplay* of the two, that is, as a non-teleological concurrence of chance conjunction and the *necessitas materiae*? There are many mutually supporting reasons why we cannot. One of them—and it should suffice to make my point—is that the necessity of matter cannot transmogrify a chance conjunction into a reliable, regular nexus. The necessity of matter lacks such transmogrifying power because, taken precisely, it has only a merely potential share in constituting anything like a reliable, regular nexus. The decisive, actualizing principle of the nexus must lie elsewhere—a conclusion we cannot deny without committing ourselves, once again, to a self-contradictory identification of the potential as such with the actual as such.

In order to locate this principle, we need to look to the end. For insofar as the end requires definite means for its attainment, it, too, imposes a corresponding kind of necessity. It is this “necessity of the end”²⁴ that determines² the *necessitas materiae* to the concrete actuality and efficacy it needs to be equipment for teleological agency. Or, put more precisely, the necessity of the end determines² *the agent* to provide the requisite determination² of material necessity. Far from deterministically¹ compelling the agent to move, however, the necessity of the end elicits the agent’s motion by embodying an attractive good to behold and fall in love with.²⁵ The necessity the end imposes on the agent is no “absolute” (i.e., deterministic¹) constraint, but a “conditional” one grounded in the goodness it

a denial when we isolate the *necessitas materiae* from the context of end-seeking agency in which alone it acquires the kind of determination² it needs to do its own sort of determining¹ work. This is no trivial consequence, since, if we try to think it through to the end, it forces us to treat material necessity as a hypostatized agency able to determine² itself in the requisite manner. But to treat material necessity in this way is to run afoul, once again, of the principle of non-contradiction. (Nor does recourse to an infinite series resolve the problem. If determination² is a prior ontological condition of the actual pertinence and efficacy of the *necessitas materiae*, the infinite series merely postpones the decisive question: What is the source of the determining² actuality itself, taken both as an ontological fact and perfection? Whence the distinction between determination¹ and determination²?)

²⁴ *Necessitas finis* (Aquinas, *De principiis naturae*, ch. 4).

²⁵ This, in fact, is one important reason why nature (in the Aristotelian sense) comes to light primarily in the end, why it is “manifestly a cause, and a cause of the type for the sake of which” (Aristotle, *Physica* 2.8.199b31–33).

presents for loving assent.²⁶

Granted, then, that the teleological phenomenon cannot be adequately *described* as consisting in chance, material necessity, or the interplay of the two, can it nonetheless be adequately *caused* by any or all of these? If the teleological phenomenon, as described on its own terms, contains more than chance, material necessity, and the interplay of the two; if this “more” explains chance and material necessity, but not vice versa;²⁷ if, finally, nothing comes from nothing without an adequate cause, the answer must be negative. For, given these three premises, neither chance, nor necessity, nor the interplay of the two can be the first cause, or the prime origin, of the teleological phenomenon and its described contents—provided, at least, that the principle “*ex nihilo nihil fit sine causa adaequata*” remains in force.

The adequate cause of the teleological phenomenon, then, cannot be ontologically inferior to the end, which, as the foregoing implies, is itself an adequate (proximate) cause of end-seeking. For, given what has been said so far, natural movers do not merely happen to arrive at “what’s best” from the viewpoint of an external observer. No, “*what’s best*” is *itself the point of their motion so far as they themselves are concerned*. They move for the sake of the end—for the sake of the good—and they do so primarily in virtue of their own stake and interest in that very good. Natural bodies are not rational agents, to be sure, but they are analogous to rational agents in that they, too, move out of something like desire for the ends they move toward. I will be showing the connection between desire for the end and love of the Beautiful below.²⁸

²⁶ See Aquinas, *De principiis naturae*, ch. 4: “Conditional necessity . . . proceeds from the causes posterior in generation, namely the form and the end. We say, for example, that it is necessary for a conception to occur if a human being ought to be begotten. And this is a conditional necessity, inasmuch as it is not necessary in any absolute sense for this woman to conceive, but only conditionally, namely, if a human being ought to be begotten. And this necessity is called the necessity of the end” (“*Necessitas . . . conditionalis procedit a causis posterioribus in generatione, scilicet a forma et fine: sicut dicimus quod necessarium est esse conceptionem, si debeat generari homo; et ista est conditionalis, quia hanc mulierem concipere non est necessarium simpliciter, sed sub conditione, si debeat generari homo. Et haec dicitur necessitas finis*”).

²⁷ Taken both by itself and in conjunction with material necessity, chance is simply the unintended intersection of otherwise independent lines of agential end-seeking. For its part, material necessity, taken both by itself and in conjunction with chance, derives its concrete causal relevance and power from the necessity of the end, rather than *vice versa*.

²⁸ At this point, the scientific naturalist might pose the following objection: “Even if

there were natural end-seekers as you describe them, any knowledge of their existence and activity as such would be pre- and extra-scientific, since it would have to occur in the medium of our self-experience in the lifeworld. But this self-experience, while it may be a heuristic starting-point for science, is not itself science, which consists in causal explanation of phenomena. We must therefore bracket the question of natural agential end-seeking, so as to focus instead on what manifestly lends itself to causal explanation without recourse to the life-world or self-experience in it: the law-like interactions of parts outside of parts.”

Now, this objection might tell against the scientific fruitfulness of final causes if the wholes we encounter in the lifeworld were nothing but sense data organized into intelligible patterns by the brain (or by transcendental subjectivity). For, in that case, lifeworld experience could tell us nothing about what underlies and generates the raw sense data this experience is supposedly based on. But why assume that all we know about the physical world is sense data organized by the brain (or by transcendental subjectivity)? Why not make the more natural assumption of a teleological fit between sensible-intelligible nature, on the one hand, and our entire psycho-physical apparatus, on the other? On this assumption, the brain (if not transcendental subjectivity) might still play some role in organizing experience, but it would do so as an organic instrument of a whole oriented to being, meaning, and truth.

To be sure, we cannot demonstrate the just-mentioned fit from a position outside of it. But we do not have to: Every attempt to deny it entails a performative self-contradiction, inasmuch as every such attempt is necessarily based on the very thing it attempts to deny. On the positive side, we can also deploy an account of change in terms of act and potency, form and matter—an account that *is* susceptible of rigorous demonstration—to show that natural bodies are what they appear to be: *per se* hylemorphic units that exist as, and make themselves known by, enmattered substantial form.

But if, *pace* our objector, the wholes we encounter in the lifeworld *are* the underlying reality in its self-manifestation, then what is first in itself—the irreducible, substantial whole—is also, *mediate* and *implicite*, first for us as well. By the same token, science is not obliged to use appearing natural wholes only as starting-points and objects of experimental inquiry, but may and should also take them as sources, paradigms, and ends of scientific research itself.

Of course, the naturalist might insist once more that what looks a natural whole is simply a heuristic placeholder for the underlying material behind the sense data. But what is his proof? It cannot consist merely in the observation (whose truth nobody denies) that modification of a thing's material produces a corresponding modification in its appearance or behavior. The connection between the modification of the material and the modification of the appearance or behavior does not suffice to demonstrate that the latter is nothing but (an epiphenomenal byproduct of) the latter. Being pertinent to the whole as material is not the same, conceptually speaking, as being the really real behind the whole.

The (still unmet) burden of proof, then, lies squarely on the shoulders of those who would dismiss lifeworld experience as a subjective impression produced by law-like interactions among entities otherwise accessible only through mathe-

Thomas's intermediate conclusion, then, is that natural bodies arrive at their respective ends "by intention" (*ex intentione*), which is to say, by a striving that is like a response to, and a desire for, the good these ends represent. The scientific naturalist will of course object here that the ascription of "intention" to non-rational bodies is a gross example of illicit anthropomorphism. I make two observations in response.²⁹

First, Thomas's claim that natural bodies arrive at their ends *ex intentione* is not a postulate, but the conclusion of an implicit argument—the very argument, in fact, that this section of the essay has been dedicated to explicating and interpreting. Second, Thomas is fully aware of the same *aporia* the scientific naturalist sees: How can natural bodies lacking reason, or indeed any cognitive capacity at all, act "by intention" of the end? Aquinas does not disagree with the scientific naturalist because he overlooks this obvious question, but because he resolves it differently. For, while admitting that only intelligent agents can *recognize ends as ends*, he does not infer that non-intelligent entities are not end-seekers. The inference he draws is rather that they are genuine end-seekers—but that their end-seeking is reducible, somehow, to end-direction by an intelligent agent. "Entities lacking cognition," Aquinas writes, "do not tend to the end unless they are directed by something having cognition and intelligence."

In order to illustrate this claim, Thomas introduces the example of the archer and the arrow: It is the archer, he says, who directs the arrow, not the arrow that directs itself. At first sight, it looks as though Aquinas were asserting that natural bodies are merely impelled toward their ends by an external governing intelligence. This impression is not entirely false: The arrow is indeed impelled by the archer. Nevertheless, if it were *merely* impelled by the archer, without acquiring a determinate directionality from him, it would not continue to fly on its own toward the target. Even

matical modelling. By the same token, we may confidently welcome lifeworld experience as the ordinary human being already implicitly takes it to be: a faithful apprehension—with sense and intellect at once—of natural bodies in motion that are *per se* units and agential end-seekers.

²⁹ A sufficient response would require showing (among other things) that there is a distinction between the final cause as an external reference-point and the final cause as an immanent perfection; that, in tending toward the former, the agent achieves the latter; that the final cause, taken as an immanent perfection, coincides with the (complete) actualization of potencies given with the agent's nature; that the tendency to this actualization—in other words, end-seeking—need not be chosen or even conscious, but may be nothing more (and nothing less) than a non-chosen, non-conscious structure or activity; and so forth. These claims, and others like them, would require a thorough justification that, alas, is out of the question in what is already a long enough essay.

an act as seemingly violent as shooting an arrow from one place actualizes its (or its material's) potency to be in another place—and the resulting actualization, far from being external to the arrow (or its material), expresses its nature (or that of its material). If this is true of an artificial inanimate body like an arrow, how much truer will it be of natural bodies, especially living ones, which are endowed with a capacity to move themselves on their own?

Thomas's point, then, is not simply that natural bodies show signs of being directed by a superintending intelligence. It is that they also show signs of participating in that intelligence's directive action. If non-cognitive, non-rational bodies act as an intelligent agent would act without themselves being intelligent, his argument goes, they must both be directed by, *and participate in*, an intelligent cause capable of accounting for this astonishing effect. Hence the conclusion of the fifth way: "There is therefore something intelligent by which all natural things are ordered to the end."

Non-cognitive agents, Thomas is saying, participate in an intelligent agency that directs them to their respective ends. This participation begins with their coming-into-existence and enters into the ratio of the act-potency mixture they come into existence as. But if their teleological ordination and their being are simultaneous and imply each other, the two goods must also come from the same source together. Consequently, the intelligent agent responsible for the former must also be responsible for the latter, so that the giver of finalistic motion is also the giver of being, and *vice versa*. But then Giver we are dealing with is not simply an extra-mundane designer or a supra-cosmic craftsman. He is these things in being something even greater: the Creator *ex nihilo* whom we may therefore confidently "call God" in the full sense of the term.³⁰

³⁰ The first and second of the five ways in *ST* I, q. 2, a. 3, conclude to an Unmoved Mover (first way) who is also an Uneffected Efficient Cause (second way). The third way makes clear that this Mover and Efficient Cause is the necessarily existing source of the entire mixed actuality of what is not he. In the fourth way, we learn that he himself is the fullness of actuality and of all the perfections it enfolds. This perfection includes—so we learn in the fifth way—the plenitude of intelligent agency. From this extreme end of the series of the five ways, we can reverse the sequence and say that the supreme Intelligent Agent (fifth way) bestows participation in his own perfection (fourth way), giving actual being (third way) via efficient causation (second way) and non-interactive but transitive motion (first way). In a certain sense, the being-in-motion of creatures is the *telos* of this reversed sequence—at least insofar as we contemplate it, not simply as motion, but as end-directed motion. For in this respect, it represents a participation in the directive activity of God's agent intelligence, even as this activity, in its turn,

The Unmoved Mover

“Since nature acts for the sake of a determinate end by the direction of a superior agent, what happens by nature must also be reduced to God as to its first cause.”³¹ These lines nicely capture the point of the fifth way: The Creator reveals himself most fully as such (at least in the natural order) by directing all things toward their proper ends, the common end of the universe, and himself. But if, in providentially guiding “every [created] agent whatever,” the Creator also uses it as an “*instrument* of the divine power,”³² we suddenly find ourselves confronting a new question: Does Thomas’s “reduction” of creaturely agents to instruments in the divine hands commit him to portraying God as the sort of supernatural busybody we said he denied the Creator to be?

The scientific naturalist will certainly think so. “Look,” he will triumphantly ask, “has the Angelic Doctor not effectively recanted his own assertion of God’s non-invasive, non-competitive liberality? Has he not in fact replaced the good God who ungrudgingly gives causal initiative with a sinister divine puppeteer? Are we not dealing with a violent, arbitrary manipulator whom we must reject as imperfect, or even evil, on account of his apparent unwillingness or inability (or both) to give being, interiority, and causality to his works?”

Nemo scandalizetur! For Thomas, the God of the fifth way is also the God of the first. He is the Unmoved Mover, who non-interactively moves the creature by giving it both to move itself and to participate in his very act of imparting motion to it.

Aristotle himself already implies as much in affirming that the Unmoved Mover “*kinei hōs erōmenon*,” that is, moves (transitively) *as loved*.³³ The intention of this brief passage is not to deny God’s efficient

represents the concrete culmination of his work as Creator in the natural order.

³¹ Aquinas, *ST* I, q. 2, a. 3, ad 2: “Cum natura propter determinatum finem operetur ex directione alicuius superioris agentis, necesse est ea quae a natura fiunt, etiam in Deum reducere, sicut in primam causam.”

³² Aquinas, *De potentia*, q. 3, a. 7, corp.: “Sic ergo Deus est causa omnis actionis, prout quodlibet agens est instrumentum divinae virtutis operantis.”

³³ Aristotle, *Metaphysica*, 12.7.1072b3. In the next line (1072b4), Aristotle adds that “by something moved, however, [he] moves all things.” This reference to the *primum mobile* raises a number of exegetical questions that it is best to leave aside here. John G. Brungardt draws on the work of Charles de Koninck in his unpublished 2016 dissertation (“The *Primum Mobile* in the Thomistic Aristotelianism of Charles de Koninck: On Natural Philosophy as Architectonic”) to argue for the perennial validity of the notion of the *primum mobile*, whose function he says Aristotle merely misassigned to the outermost celestial sphere.

causality, but to forestall a misunderstanding of how he exercises it. The Aristotelian First Mover is indeed the First Efficient Cause of being, but his efficiency does not work by physical, or quasi-physical, interaction with the cosmos or any member of it.³⁴ Put positively, the First Efficient Cause of things' being exercises a purely non-interactive efficiency—as befits the transcendent “source” (*archê*) from whom, Aristotle says, “the universe and nature hang down.”³⁵

Even for Aristotle, I contend, the deity is the undiminished giver of all non-divine being. He, the Pure Act, is the origin of the entire actuality-mixed-with-potency characteristic of every substance that is not itself the *Actus Purus*. It is not that there is no beginning for Aristotle, then. It is that the beginning he affirms is an ever-flowing ontological source that reigns above us: here, now, always.³⁶

³⁴ Aristotle highlights God's transcendence of both the cosmos and intra-cosmic entity, along with the freedom from interactivity this transcendence entails, in *Metaphysica* 12.7.1073a3–13.

³⁵ Aristotle, *Metaphysica* 12.7.1072b13–14.

³⁶ As everyone knows, Aristotle denied that the world had a temporal beginning or will have a temporal end. This denial, it is often supposed, entails the world's self-existence apart from God. No such entailment obtains: The question of the world's temporal duration is logically separable from the question of its ontological origin. To be sure, if the world lacked a temporal beginning or end, its existence would have a certain necessity (understood as an immunity to failure). Even so, this necessity would not characterize the world's existence on account of the world itself, but on account of the divine causality the world depends on. Such, at any rate, seems to me to be the opinion of Aristotle. The necessity of the world, for him, is an implicate of God's primal efficiency, just as God's primal efficiency is an implicate of the perfection of Pure Act.

Let me stress that this account implies no “impersonal” view of God's *ad extra* causation. How could it, when God's causing *ad extra* expresses his unique unity of being and knowing? (If, moreover the participle *erômenon* can be read in the middle voice, and so has a reflexive connotation, it may suggest that God causes by delighting in his pure actuality and, in that delight, diffusing it as the loved common good of the universe.)

By the same token, the necessity Aristotle ascribes to God's *ad extra* causation is not some impersonal force. It is God's own total self-possession as the Beautiful: “But since there is a mover that is itself immobile, being in actuality, it cannot be otherwise in any way at all. . . . It must therefore be by necessity, and insofar as [it is] by necessity, [it is] beautifully, and thus it is a source. For the necessary [occurs] in the following ways: by violence, inasmuch as it is contrary to the impulse; that without which the good cannot be; that which cannot be otherwise, but is *simpliciter*” (*Metaphysica* 12.7.1072b7–13).

Does Aristotle mean that God's necessary being equips him to be a source or that his being a source is necessary? Assuming he intends to embrace the latter

I said just now that non-divine substance is an act–potency mixture. This mixture structures and unites three elements: (1) the substance’s completion in first act, (2) its self-perfective motion, and (3) the perfection in *actus secundus* this motion tends toward. Although Aristotle’s “he moves as loved” explicitly mentions only the third element, it implies the other two. Even more, it expresses God’s causation of the *entire* threefold complex in light of the just-mentioned third element: the non-divine substance’s being-in-motion toward its perfection in second act—a movement whose external reference point is God, but whose benefit accrues entirely to the moving thing itself.³⁷

But if Aristotle is thus describing God’s efficient causation, *what* is he describing it *as*? He “moves as loved” suggests the answer: He is describing divine efficiency as God’s impartation of an erotic participation in divinity. The point is just that the expression “he moves as loved” formulates this participation in terms of its intended fruit: the participator’s movement toward self-perfection. It is by this self-perfective motion, I argue, that the participator fruitfully recapitulates in second act the Godwardness always already constituting it in *actus primus*.³⁸

Aristotle offers us a way to understand how physical motion recapitulates ontological participation in the following passage from *De anima* 2.4, which contains clear echoes of Diotima’s remarks on begetting in Plato’s *Symposium*:

option, we can say that his error, if there be one, lies in not recognizing that God’s *ad extra* causation, being *rationally distinct* from the divine essence (while also substantially identical with it), is not a necessary requirement of God’s being God. Once this clarifying distinction is admitted, however, Aristotle’s teaching about the “eternity of the world” appears compatible in principle with the doctrine of creation out of nothing, *at least insofar as both involve a radical dependence of finite substances on God that is not the result of any transition from potency to act.*

³⁷ Aristotle explicitly distinguishes between the perfection of the beneficiary and the beneficiary’s external reference-point in *De anima* 2.4.415b20–21.

³⁸ Aristotle’s teaching on this score clearly rules out any gap of space or time between the divine causation and the genesis of its effect. The absence of such a gap ensures that, within the terms of its limited existence, the effect is always already complete in first act and always already on its way toward *actus secundus*. Completion in first act entails (*inter alia*) empowerment to move toward *actus secundus*, and the entailment is so immediate as to ensure that the motion has always already begun. The beginning of motion that is in question has one foot in nature and another in the possessor of the nature, which thus finds itself already moving prior to any individual act or choice on its part.

The most natural of works for living things—as many as are complete and not defective or come to be by chance—is to make another like oneself (which an animal does with an animal and a plant with a plant). Their aim in this is to partake of the divine and eternal insofar as they are able. For all things have an appetite for [the divine and eternal], and for its sake they do whatever they do by nature (note that for the sake of which is twofold: for the external goal and for the beneficiary). Since, then, they cannot continuously commune with the divine and eternal, because nothing corruptible can perdure as one and the same in number, they commune (to greater or lesser degrees) in *this* manner, which is within the individual's capacity for participation. And so they do perdure—though not as the same self, but as another like it, nor as one in number, but as one in species.³⁹

In this text, begetting serves as a richly illustrative analogue of *all* erotic aspiration to participate in the divine and eternal. For Aristotle, this aspiration begins in first act, pre-defines its structure, and orders it to completion in *actus secundus*. Participation (first act) has an erotic structure, and this structure, in its turn, always already unfolds into a natural motion ordered to recapitulating it in second act. Erotic participation immemorially expresses itself “downward” in motion (toward second act), just as erotic motion immemorially recapitulates participation “from below.”

Now, Aristotle's account of the participation–motion complex recalls a teaching we already find in the passage of Plato's *Symposium* where Socrates cites Diotima to the effect that *eros* is a desire to beget in beauty.⁴⁰ When, in fact, we read the sentence “[he] moves as loved” in its immediate context, we find that it expresses a similar view: the view that God causes things to be and gives them to move *by revealing himself to them as the lovable Form of Beauty*.⁴¹ My contention is that the effect's participation in God in first act and its Godward motion toward/in *actus secundus* are distinct but inseparable expressions of one and the same love of the Beautiful.⁴²

³⁹ Aristotle, *De anima* 2.4.415a26–415b7. For the Platonic passage Aristotle is echoing, see *Symposium*, 207c–208b.

⁴⁰ *Tokos en kalō* (Plato, *Symposium* 206b).

⁴¹ Aristotle uses both adjectival and adverbial forms of the word *kalōs* in *Metaphysics* 12.7 to characterize the divine and its mode of causality. See, for example, 12.7.1072a24–1072b4, where he connects God's pure actuality, his beauty, and his lovability—all in the context of explaining that he “moves as loved.”

⁴² As both Plato and Aristotle already saw, falling in love with the Beautiful is not an

We can formulate the matter like this. The moved effect's dependence on the First Mover and First Efficient Cause converts with its erotically responsive participation in his beauty (which is the secret of his motive efficiency). Already in first act, then, the moved effect finds itself having been given to respond to the prior irradiation of the Beautiful; such is the *a priori* (erotic) form of its participated, and participating, existence. In the same timeless center, though, the moved effect has also already begun to appropriate, without completely exhausting, the response it was immemorially given to make in first act (and the appropriation, too, is a gift). It is in this non-exhaustive appropriation, this ontological already-but-not-yet, that motion springs to life on the way to recapitulating the participation it flows from, abides in, and returns to.

God's self-revelation as the Beautiful constitutes and shapes things' being and motion in the invisible, *a priori*, metaphysical order. It also simultaneously prolongs this constituting and shaping action through the *a posteriori* mediation of the physical world. There is thus never a moment when non-divine things are moved "from above" without being involved in the process "from below." They are always "in on the act." To be sure, God does not show things an immediate glimpse of his beauty, but disguises it in a form they can relate to and be in love with: that of their own natural ends.⁴³ The attraction of these ends is like a sacramental mediation through which the Beautiful stirs things to their depths, calls them out of themselves, and, in so doing, puts them in their own hands as movers at the juncture of ontology and history.⁴⁴

anthropological peculiarity, but a universal good, a perfection realized in analogically diverse guises from the natural inclination of inanimate bodies to the intellectual thirst of rational and intellectual beings. This is not to say, of course, that non-rational things can recognize the divine beauty as such. On the contrary, it is to insist that they do not have to: All they need to do is have natural inclinations toward their own ends, which objectively represent specific modes of beautiful God-likeness.

⁴³ This is true even for human beings. Our final end, looked at as our immanent perfection, and to the extent that it is revealable in this world, is an assimilation to God, regardless of whether we recognize this fact or not. At the same time, our final end commands every other end, as the ultimate commands the penultimate, and enfolds it in its encompassing teleological suasion. Long before we entertain any explicit love for God, we are drawn to the divine beauty as reflected in our final end. The final end, in its turn, appears to us in ever-new ways through the mediation of the penultimate ends that participate in it and enact our relationship to it.

⁴⁴ In its erotic character, motion mediates between history and ontology in a way that enables the former to serve as medium, enactment, and touchstone of the latter.

What is true of the Aristotelian First Mover and First Efficient Cause is true *a fortiori* of the Thomistic Creator, who is more intimately present to his creatures than they are to themselves.⁴⁵ When the Creator moves things, he is not meddling with them, but conserving them in the proper work bound up with their nature.⁴⁶ At the same time, he is taking them into his counsel, enabling them to share, to the extent they are able, both in his knowledge of his purposes and in his accomplishment of them. The insight that God moves creatures by making them privy to his intentions arguably underlies Thomas's account of natural law, whose culminating form is the rational creature's conscious participation in the law and legislation of the all-provident Creator:

Since law is a rule and measure, it can be in something in two ways: in one way, as in the one ruling and measuring; in another way, as in the one ruled and measured, because to the extent that something partakes of rule or measure, it is ruled and measured in a corresponding manner. It evidently follows that, since all things subject

⁴⁵ See Aquinas, *ST I*, q. 8, a. 1, corp.: "But since God is being itself by his very essence, created being must be his proper effect, as to ignite is the proper effect of fire. But this is an effect that God causes in things, not only when they first begin to be, but also so long as they are conserved in being, just as light is caused in the air by the sun so long as the air remains illumined. So long, therefore, as a thing has its being, God must be present to in the mode in which it has this being. But to be is what is most intimate to each thing, and it is more deeply in the thing than anything else, since it is formal with respect to everything else therein, as is evident from what was said above. Consequently, God must be in all things, and this in the most intimate manner" ("Cum autem Deus sit ipsum esse per suam essentiam, oportet quod esse creatum sit proprius effectus eius; sicut ignire est proprius effectus ignis. Hunc autem effectum causat Deus in rebus, non solum quando primo esse incipiunt, sed quandiu in esse conservantur; sicut lumen causatur in aere a sole quandiu aer illuminatus manet. Quandiu igitur res habet esse, tandiu oportet quod Deus adsit ei, secundum modum quo esse habet. Esse autem est illud quod est magis intimum cuilibet, et quod profundius omnibus inest, cum sit formale respectu omnium quae in re sunt, ut ex supra dictis patet. Unde oportet quod Deus sit in omnibus rebus, et intime").

⁴⁶ "But," the scientific naturalist might object, "is God not entirely responsible for all created nature? How, then, can you suggest that he nonetheless treats it as a sort of template for conserving the work appropriate to it?" There is no difficulty, I reply, because the creative paradigm by which God conceives the creature's existence also secures its otherness as a hypothetically necessary presupposition of this very conception (insofar as the conception postulates a created *terminus ad quem*). God's fidelity to the creature-as-template is thus wholly enfolded within his fidelity to its creative paradigm, even as his fidelity to its creative paradigm is wholly enfolded within his fidelity to himself.

to divine providence are ruled and measured by the eternal law . . . all things participate in some way the eternal law, inasmuch, that is, as by its impression they have inclinations to their proper acts and ends. Now, among the other entities the rational creature is subject to divine providence in a more excellent way, inasmuch as it becomes a partaker of providence by providing for itself and others. It follows that in it itself there is a participation of the eternal reason by which it has a natural inclination to its due act and end. And such a participation of the eternal law in the rational creature is called the natural law. Whence the psalmist, after having said “sacrifice the sacrifice of righteousness,” adds, as if in the voice of those asking “what are the works of righteousness?”; “who shows us good things?” To which question he answers by saying “the light of thy face, o Lord, has been sealed upon us,” as if the light of the natural reason, by which we discern what is good and evil, which pertains to the natural law, were nothing other than an impression of the divine light in us. Whence it is evident that the natural law is nothing other than a participation of the eternal law in the rational creature.⁴⁷

At this point, we are ready to answer the objection posed by our imagined scientific naturalist at the beginning of the present section. To be an instrument in God’s hands, we can now say, is not to be a slave of some arbitrary tyrant, but a friend of a most generous Ruler. Indeed, it is to be a

⁴⁷ Aquinas, *ST*-II, q. 91, a. 2, corp.: “Respondeo dicendum quod, sicut supra dictum est, lex, cum sit regula et mensura, dupliciter potest esse in aliquo, uno modo, sicut in regulante et mensurante; alio modo, sicut in regulato et mensurato, quia in quantum participat aliquid de regula vel mensura, sic regulatur vel mensuratur. Unde cum omnia quae divinae providentiae subduntur, a lege aeterna reguntur et mensurentur, ut ex dictis patet; manifestum est quod omnia participant aliquo modo legem aeternam, in quantum scilicet ex impressione eius habent inclinationes in proprios actus et fines. Inter cetera autem rationalis creatura excellentiori quodam modo divinae providentiae subiacet, in quantum et ipsa fit providentiae particeps, sibi ipsi et aliis providens. Unde et in ipsa participatur ratio aeterna, per quam habet naturalem inclinationem ad debitum actum et finem. Et talis participatio legis aeternae in rationali creatura lex naturalis dicitur. Unde cum Psalmista dixisset, sacrificate sacrificium iustitiae, quasi quibusdam quaerentibus quae sunt iustitiae opera, subiungit, multi dicunt, quis ostendit nobis bona? Cui quaestioni respondens, dicit, signatum est super nos lumen vultus tui, domine, quasi lumen rationis naturalis, quo discernimus quid sit bonum et malum, quod pertinet ad naturalem legem, nihil aliud sit quam impressio divini luminis in nobis. Unde patet quod lex naturalis nihil aliud est quam participatio legis aeternae in rationali creatura.”

viceroys, a plenipotentiary representative of a benevolent King who asserts his full, fontal possession of all power, not by jealously hoarding its riches, but by liberally imparting them, in analogically diversified grades and measures, to the entire community of his creatures. This is the same King who in the last days reveals his own undiminished glory by voluntarily emptying himself to the form of a free and rational instrument (whose liberty is to obey from the heart his own sovereignly liberating will in the personal, dialogical difference between Father and Son):

The property of an instrument is to be moved by the principal agent, albeit in an analogically diverse mode determined by the respective property of its nature. For an inanimate instrument, such as an axe or a saw, is moved by the craftsman by means of a mere bodily motion. An instrument animated by a sensitive soul, on the other hand, is moved by means of a sense-appetite, as a horse is moved by a rider. Differently still, an instrument animated by a rational soul is moved by its own will, as the servant is moved by the command of the master to perform a task. . . . In this way, then, the human nature in Christ was the instrument of divinity in such wise as to be moved by its own will.⁴⁸

⁴⁸ Aquinas, *ST* III, q. 18, a. 1, ad 2: “Ad secundum dicendum quod proprium est instrumenti quod moveatur a principali agente, diversimode tamen, secundum proprietatem naturae ipsius. Nam instrumentum inanimatum, sicut securis aut serra, movetur ab artifice per motum solum corporalem. Instrumentum vero animatum anima sensibili movetur per appetitum sensitivum, sicut equus a sessore. Instrumentum vero animatum anima rationali movetur per voluntatem eius, sicut per imperium domini movetur servus ad aliquid agendum, qui quidem servus est sicut instrumentum animatum, ut philosophus dicit, in I Politic. Sic ergo natura humana in Christo fuit instrumentum divinitatis ut moveretur per propriam voluntatem.”

As Thomas explains in *De potentia*, q. 1, the term *potentia*, when applied to God, does not refer to an unrealized potential, or even to a logical possibility, but to the superabundance of pure act, whose property is to “diffuse its own likeness.” For “it befits who God is to be the pure and primal act. By the same token, it befits who he is to act most of all, and to diffuse his own likeness to others. Which is why active power befits him most of all. For a power is called ‘active’ insofar as it is a principle of action” (Aquinas, *De potentia*, q. 1, a. 1, corp.: “Deo autem convenit esse actum purum et primum; unde ipsi convenit maxime agere, et suam similitudinem in alias diffundere, et ideo ei maxime convenit potentia activa; nam potentia activa dicitur secundum quod est principium actionis”).

It follows that true power—original, archetypal *potentia*—is substantially identical with generative fruitfulness, and so with undiminished, self-communicative goodness; it is the ability, always already realized, to produce something

The Gift of Giving

Even after the foregoing work of clarification has been done, there remains a certain unease. Why should Thomas insist on calling creatures God's "instruments" in the first place? Is the scientific naturalist right, after all, in claiming that God withholds the being and causality bodily things need to be wholly natural, full-fledged co-actors in the visible world?

A first answer to this question is that emphasis on creaturely instrumentality counters the reduction of (the idea of) God to a mere tool for attaining intra-worldly goals. Needless to say, a merely instrumental God would be a sitting duck for the scientific naturalist, who claims that intra-mundane phenomena are so completely reducible to intra-mundane principles as to obviate any need for an extra-mundane Creator.⁴⁹ The God-as-tool neither is, nor does, nor means anything that the universe, or nature, or evolution, or history, or progress, or any other such supposedly immanent absolute, would be, or do, or mean already. No one, I think, has made this point better than John Henry Newman:

Nothing is easier than to use the word [God], and mean nothing by it. The heathens used to say, "God wills," when they meant "Fate"; "God provides," when they meant "Chance"; "God acts," when they meant "Instinct" or "Sense"; and "God is everywhere," when they meant "the Soul of Nature." The Almighty is something infinitely different from a principle, or a centre of action, or a quality, or a generalization of phenomena. If, then, by the word, you do but mean a Being who keeps the world in order, who acts in it, but only in the

genuinely new. It is the ability, then, to bring forth another that, *precisely as other*, manifests the fontal plenitude of the producer. How? By existing, of course, but also by having and exercising generous, self-communicative power in turn.

Now, God's creative act *ad extra* offers a partial, contingent display of his fontal plenitude; its full, indefectible revelation lies in the Father's begetting the Son *in divinis*: "The power of generating and the power of creating are one and the same power, if we consider the thing the power is. Nevertheless, they differ by reason of their diverse relations to diverse acts" (Aquinas, *De potentia*, q. 2, a. 6, corp.: "Sic ergo potentia generandi et creandi est una et eadem potentia, si consideretur id quod est potentia; differunt tamen secundum diversos respectus ad actus diversos").

At the same time, this diversity of acts enables an analogy-founding order between them: Creation presupposes generation (though not *vice versa*), even as it marks the first step toward its communication *ad extra* through the Incarnation—whose exaltation of its human "instrument" is the source, pattern, and end of God's unstinting communication of productive power to secondary causes in creation.

⁴⁹ See Aquinas, *ST I*, q. 2, a. 3, obj. 2.

way of general Providence, who acts towards us but only through what are called laws of Nature, who is more certain not to act at all than to act independent of those laws, who is known and approached indeed, but only through the medium of those laws; such a God it is not difficult for any one to conceive, not difficult for any one to endure. If, I say, as you would revolutionize society, so you would revolutionize heaven, if you have changed the divine sovereignty into a sort of constitutional monarchy, in which the Throne has honour and ceremonial enough, but cannot issue the most ordinary command except through legal forms and precedents, and with the counter-signature of a minister, then belief in a God is no more than an acknowledgment of existing, sensible powers and phenomena, which none but an idiot can deny. If the Supreme Being is powerful or skilful, just so far forth as the telescope shows power, and the microscope shows skill, if His moral law is to be ascertained simply by the physical processes of the animal frame, or His will gathered from the immediate issues of human affairs, if His Essence is just as high and deep and broad and long as the universe, and no more; if this be the fact, then will I confess that there is no specific science about God, that theology is but a name, and a protest in its behalf an hypocrisy. Then is He but coincident with the laws of the universe; then is He but a function, or correlative, or subjective reflection and mental impression, of each phenomenon of the material or moral world, as it flits before us. Then, pious as it is to think of Him, while the pageant of experiment or abstract reasoning passes by, still, such piety is nothing more than a poetry of thought or an ornament of language, and has not even an infinitesimal influence upon philosophy or science, of which it is rather the parasitical production.⁵⁰

Even granting, however, that God is not an instrument in the hands of creatures, why must creatures be instruments in the hands of God? This re-formulation of the question calls for a second answer: The category of “instrumental causality” is tailor-made for causes that, like non-divine ones, communicate perfections which do not originate with them, but flow down through them from some superior agent. Nevertheless, this second answer, like the first one, still seems to leave room for doubt. For if creatures are after all just *instruments* of their Maker’s transcendent will, how can they truly be beneficiaries of his unenvious impartation of being and causality?

⁵⁰ John Henry Newman, *The Idea of a University*, discourse II, no. 7, newmanreader.org/works/idea/discourse2.html.

This objection would be unanswerable if the term “instrument” necessarily referred to an empty, fungible convenience lacking any proper, intrinsic sourcehood. Fortunately, God’s instruments are not mere conveniences in this objectionable sense. To be God’s instrument is not to be the first source, that is true, but it is to be, in one analogically diversified grade or another, a sourced co-source. In using his instruments, God works their proper work as a participation in his,⁵¹ giving them to produce in their own order *the entire effect* he originates in his own:

It is . . . evident that the same effect is not attributed to the natural cause and to the divine virtue as if it were produced partly by God and partly by the natural agent. Rather, the whole [is produced] by both in different ways, just as the same effect is attributed as a whole to the instrument and is also attributed as a whole to the principal agent.⁵²

⁵¹ See Aquinas, *De potentia*, q. 3, a. 7, corp.: “God, then, is the cause of every action insofar as every agent whatever is an instrument of his operant virtue. So if we consider the acting suppositis, every particular agent whatsoever is immediate to its effect, whereas, if we consider the virtue by which the action occurs, the virtue of the higher cause will be more immediate to the effect than the virtue of the lower one. This is because the lower virtue is not conjoined to its effect except by the virtue of the higher, which is why the *Book on Causes* says that the virtue of the prime cause acts on the caused and enters more vehemently into it. It is thus that the divine virtue has to be present to every agent thing. . . . For God is the cause of every action whatsoever insofar as he gives the virtue of acting, and insofar as he conserves it, and insofar as he applies it to the action, and insofar as it is by his virtue that every other virtue acts. And if we add to all this that God is his virtue, and that he is within everything whatsoever, not as a part of its essence, but as keeping the thing in *esse*, it will follow that he operates immediately in every operant thing whatsoever, without exclusion of the operation of will and nature” (“Sic ergo Deus est causa omnis actionis, prout quodlibet agens est instrumentum divinae virtutis operantis. Sic ergo si consideremus supposita agentia, quodlibet agens particulare est immediatum ad suum effectum. Si autem consideremus virtutem qua fit actio, sic virtus superioris causae erit immediatior effectui quam virtus inferioris; nam virtus inferior non coniungitur effectui nisi per virtutem superioris; unde dicitur in Lib. de Caus., quod virtus causae primae prius agit in causatum, et vehementius ingreditur in ipsum. Sic ergo oportet virtutem divinam adesse cuilibet rei agentis. . . . Sic ergo Deus est causa actionis cuiuslibet in quantum dat virtutem agendi, et in quantum conservat eam, et in quantum applicat actioni, et in quantum eius virtute omnis alia virtus agit. Et cum coniunxerimus his, quod Deus sit sua virtus, et quod sit intra rem quamlibet non sicut pars essentiae, sed sicut tenens rem in esse, sequetur quod ipse in quolibet operante immediate opereatur, non exclusa operatione voluntatis et naturae”).

⁵² Aquinas, *SCG* III, ch. 70: “Patet . . . quod non sic idem effectus causae naturali et

But if God, holding nothing back from his creature, gives it to share even in his divine causality, why does Thomas deny that a “created power can create anything, either by its own virtue or *as the instrument of another*”?⁵³ Does this abrupt “No!” not entail, after all, an ungenerous restriction of the scope of the creaturely instrument’s participation in its Creator’s activity? Such, at least, is the objection our indefatigable naturalist might offer at this point in the discussion. What, then, shall we say in response?

The first thing to be noted is Thomas’s conviction that God does *not* begrudge his creatures the giving of being. To be sure, Aquinas holds that *ipsum esse* is the Creator’s “proper effect,”⁵⁴ which the creature can give

divinae virtuti attribuitur quasi partim a Deo, et partim a naturali agente fiat, sed totus ab utroque secundum alium modum: sicut idem effectus totus attribuitur instrumento, et principali agenti etiam totus.”

⁵³ Aquinas, *De potentia*, q. 3, a. 4, corp.: “Relinquitur ergo quod nulla potentia creaturae potest aliquid creare neque propria virtute, neque sicut alterius instrumentum.”

⁵⁴ *Esse* is the perfection of actuality outside of which there is precisely nothing: “Nothing can be added to *esse*, however, which would be external to it, since nothing is external to it apart from non-being, which cannot be either form or matter. Whence it follows that *esse* is not determined by another as potency is by act, but as act is by potency” (Aquinas, *De potentia*, q. 7, a. 2, ad 9: “Nihil autem potest addi ad *esse* quod sit extraneum ab ipso, cum ab eo nihil sit extraneum nisi non-ens, quod non potest *esse* nec forma nec materia. Unde non sic determinatur *esse* per aliud sicut potentia per actum, sed magis sicut actus per potentiam”).

Nevertheless, while “complete and simple,” created *esse* is also “non-subsistent” (see Aquinas, *De potentia*, q. 1, a. 1, corp.: “*Esse* significat aliquid completum et simplex sed non subsistens”). Now, if the *esse* we see in things is unable to subsist on its own, it must derive from a source other than itself. If, on the other hand, *esse* is ontologically prior to everything else, the source it flows from cannot be either a part or a whole of the *universitas rerum*. No, the *esse* we see in things must flow directly from an extra-mundane source, which, by reason of this immediacy, it must represent and express. Put another way, created *esse* “cannot be understood except as drawn forth from the divine *esse*, just as a proper effect cannot be understood except as drawn forth from its proper cause” (Aquinas, *De potentia*, q. 3 a. 5, ad 1: “*esse*, quod rebus creatis inest, non potest intelligi nisi ut deductum ab *esse* divino; sicut nec proprius effectus potest intelligi nisi ut deductus a causa propria”).

An implication of this teaching is that nothing other than God has being, or even a claim to being, independently of the divine act of bestowing *esse ex nihilo*. Even *what* things are has its sole source in God (as Aristotle himself glimpsed), since “from the very fact that *esse* is attributed to the quiddity, not just the *esse*, but the quiddity itself is said to be created. This is because before [the quiddity] has *esse*, it is nothing, except perhaps in the intellect of the Creator, where it is not a creature, but a creative essence” (Aquinas, *De potentia*, q. 3 a. 5, ad 2: “Ex hoc ipso quod quidditati *esse* attribuitur, non solum *esse*, sed ipsa quidditas creari dicitur: quia antequam *esse* habeat, nihil est, nisi forte in intellectu creantis, ubi non est

only by virtue of the creative First Cause. Nevertheless, he also holds that the creature, like a steward of God's proper effect, plays a real instrumental role in communicating it. This, at any rate, seems to be the clear implication of passages like following:

Any other cause that gives *esse* has this [giving], not by its own virtue, but [only] insofar as the virtue and operation of the first cause are immanent in it. The same thing is true of an instrument, which effects the action it instrumentally serves, not by the virtue of its own nature, but by the virtue of the one moving it.⁵⁵

Why, then, does Thomas insist that the creature cannot be even an instrumental agent of the creative act? His intention, I think, is not to deny that the creature really gives being, but to deny that it gives being as God does. God alone gives being *ex nihilo*, and the creature (ongoingly) receives both being and the giving of being thanks to the unique divine donation. It is only on this condition that the creature can play its proper role in unfolding horizontally the vertical communication of *esse* by which the Giver ceaselessly founds, enfolds, and pervades the being, acting, and causing of his creatures *ab initio*.⁵⁶

To be sure, God retains full possession of creating as his proper act. He does so, however, in order to diffuse its reception as the common good

creatura, sed creatrix essentia").

⁵⁵ Aquinas, *De potentia*, q. 3, a. 4, corp.: "Quaecumque alia causa dat esse, hoc habet in quantum est in ea virtus et operatio primae causae, et non per propriam virtutem; sicut et instrumentum efficit actionem instrumentalem non per virtutem propriae naturae, sed per virtutem moventis; sicut calor naturalis per avirtutem animae generat carnem vivam, per virtutem autem propriae naturae solummodo calefacit et dissolvit."

If Thomas is correct, then *all* creaturely causation is nothing but a received share in the activity in which God gives the creature to be. If, in fact, *esse* is the actuality of all acts, including that of the forms; if, further, the proper effect of the creature, as such, is always some finite form; and if, finally, Aristotle's four causes represent irreducibly distinct, yet intelligibly coordinated modes of producing form (one of which is simply to *be* the form produced)—if, I say, these three premises are true, then all creaturely causality is, or is reducible to, participation in the communication of *esse*.

⁵⁶ While horizontally uniting the members of the universal community with one another, this participation vertically unites them collectively and singly to God. It is as if something analogous to friendship—both among things and with God—determined *a priori* the form of the universe. Far from existing, suffering, acting, or causing in isolation, finite entities do each and all of these things in a network of friendly communion they both presuppose and help co-constitute in turn.

of the universe and to constitute this reception as a valid likeness of his induplicable creativity. The likeness he grants, moreover, is no poor copy or pale second best, but a new way of being a co-source as original in its own domain as God is in his. By thoughtfully removing from the creature's shoulders the impossible burden of replicating him, the Creator frees for it true greatness, which is not to repeat the creative act, but to receive the act's fruit as its own exercised existence (the *actus essendi*)—and so to give birth, Theo-tokos like, to the fruit from below.

Fruitful Communion

When, then, does the creature's instrumental participation in the Creator's giving of being begin? The initial form of this participation, I want to suggest in answer, occurs within the original constitution of the creature itself. God, so my thesis runs, first *uses the creature as a self-receptive instrument of its own passive creation*. For if God is to create out of nothing, his creative action necessarily terminates, *ex hypothesi*, in a passive creation, which—again *ex hypothesi*—is necessarily inherent in a created supposit that substands it. This substanding is primarily the fruit of God's creative action, but it is secondarily the creature's proper good as well: It is (to re-state my thesis) the self-receptive instrumentality by which the creature shares in divine creativity without replicating it, competing with it, or adding to it from the outside.

According to Aquinas, passive creation is “nothing other in terms of reality than a certain relation to God accompanied by a newness of being.”⁵⁷ One striking feature of his account of this *relatio* is his affirmation that it is a kind of accident really distinct from, and inherent in, the creature as its underlying subject. His argument for this thesis can be summed up as follows: If passive creation is the correlate of the creative act

⁵⁷ Aquinas, *De potentia*, q. 3, a. 3, corp.: “Creatio nihil est aliud realiter quam relatio quaedam ad Deum cum novitate essendi.” As Thomas makes clear in this and many other texts (such as *ST I*, q. 13, a. 7), creatures are really related to God, while God is not really related to creatures. It is my contention that this fundamental asymmetry not only entails the creature's dependence on the creative act, but also enables the creature to participate in this act precisely by means of its self-reception from the Creator. This is why it is helpful to think of the relations in question—the real one of the creature and the rational one of God—as two ontologically distinct, but spatio-temporally inseparable dimensions of a single creative communication of being. Cunningham has nicely captured this dual unity by describing (in private conversation) Thomas as affirming what is in effect a “mixed relation” between Creator and creature that bears a striking structural similarity to the hypostatic union (see forthcoming *True Reduction*).

on the side of the creature⁵⁸; if, furthermore, *passiva creatio* is never merely in process, but is always already complete⁵⁹; if, finally, it is not the created thing *per se*, but a con-created condition of the created thing,⁶⁰ then it must be an accident-like relation underlain by the creature as its supposit.⁶¹ It is only if passive creation is an accident-like relation, Thomas is saying, that the creature can owe itself totally to its Creator—and so find itself already posited as the real term of a Godwardness whose *ratio*, lying primarily in

⁵⁸ See Aquinas, *De potentia*, q. 3, a. 3, corp.: “Now, the creature, as its very name implies, is referred to the Creator. But the creature depends on the Creator, and not *vice versa*. . . . And therefore we must say that creation can be taken actively and passively. If it be taken actively, it designates God’s action, which is his essence, with a relation to the creature. This relation is not real, but is purely rational. But if creation be taken passively, then, since creation . . . is not a mutation, it cannot be said to be anything in the genus of passion, but is in the genus of relation” (“Creatura autem secundum nomen refertur ad Creatorem. Dependet autem creatura a Creatore, et non e converso. . . . Et ideo dicendum est, quod creatio potest sumi active et passive. Si sumatur active, sic designat Dei actionem, quae est eius essentia, cum relatione ad creaturam; quae non est realis relatio, sed secundum rationem tantum. Si autem passive accipitur, cum creatio . . . proprie loquendo non sit mutatio, non potest dici quod sit aliquid in genere passionis, sed est in genere relationis”).

⁵⁹ See Aquinas, *De potentia*, q. 3, a. 3, corp.: “But, as was already said, creation cannot be understood as a being moved, which is prior to the term of the motion, but is understood as already completed in being” (“Creatio autem, sicut dictum est, non potest accipi ut moveri, quod est ante terminum motus, sed accipitur ut in facto esse”).

⁶⁰ See Aquinas, *De potentia*, q. 3, a. 3, ad 2: “The aforesaid relation is not some created thing, but a con-created one, just as it is not a being properly speaking, but inheres in one” (“Relatio praedicta non est quoddam creatum, sed concreatum, sicut nec est ens proprie loquendo, sed inhaerens”).

⁶¹ See Aquinas, *De potentia*, q. 3, a. 3, ad 3: “That relation is an accident, and, considered in its being as inhering in a subject, it is posterior to the created thing, just as an accident is posterior in both idea and nature to its subject” (“Illa relatio accidens est, et secundum esse suum considerata, prout inhaeret subiecto, posterius est quam res creata; sicut accidens subiecto, intellectu et natura, posterius est”).

To be sure, we are dealing with a unique case, inasmuch as the relation in question “is not the sort of accident that is caused by the principles of the subject” (ibid.: “quamvis non sit tale accidens quod causetur ex principiis subiecti”). Even more, if we consider the relation as an immediate effect of prior divine action, it in some sense precedes the subject it inheres in: “If, however, the aforesaid relation be considered according to its *ratio*, inasmuch as it comes to be by the action of an agent, it is in some way prior to its subject, just as the divine action itself is its proximate cause” (ibid.: “Si vero consideretur secundum suam rationem, prout ex actione agentis innascitur praedicta relatio, sic est quodammodo prior subiecto, sicut ipsa divina actio, est eius causa proxima”).

God himself, the creature can never identify with or exhaust.⁶²

Thomas's account of passive creation implies that the creature serves as a kind of *presupposition* of its reception of being and the relation following on this reception.⁶³ Thomas is of course fully aware that God is the one who first gives the creature both to receive being and to have the consequent relation. Nevertheless, Thomas holds, this prior donation is not a forensic imputation: In giving his creature to receive being and be related to him in turn, God also gives the creature to be the real subject of both the receiving and the relating. Nor is there ever a time when the creature's "subjectivity," always already turned Godward by God himself, has not immemorally converted with its own subsistence in itself.⁶⁴

I thus come to my thesis: In substanding the being it has received from God, the creature serves as an instrumental cause of its own passive creation. To be sure, passive creation is not caused by the principles of the created subject. Because, however, it cannot occur unless it inheres in the creature, it relies on the creature as a hypothetically necessary condition of its own reality and efficacy.⁶⁵ It is this reliance—so my thesis posits—that establishes the creature as a kind of instrumental cause of its own being

⁶² Unless the creature underlay the relation of passive creation from the beginning, there would be a time when it was still only partly created. Creation would be a motion, and something of the creature would preexist the motion's completion. The creature would not owe its existence entirely to God. A similar consequence follows if we suppose that the creature is its relation of passive creation. For, on this supposition, the creature coincides so completely with its Godwardness as to become indistinguishable from God's own self-knowledge as the term of Godwardness. In this way, too, the creature would no longer owe its existence entirely to the divine initiative, since it would in effect be God by nature.

⁶³ This implication looks counterintuitive only so long as we forget that, "in giving *esse*, God simultaneously produces what receives *esse*, which is why he has no need [to create] out of any preexisting thing." (Aquinas, *De potentia*, q. 3, a. 1, ad 17: "Deus simul dans esse, producit id quod esse recipit: et sic non oportet quod agat ex aliquo praeexistenti").

⁶⁴ The same relation of passive creation that inheres accident-like in the creature's substance is also simultaneous and coterminous with its substance. This fact secures for creaturely being a kind of conversion between subsistence and relativity that is analogous to, though not identical with, the subsistent relationality of the divine persons.

⁶⁵ The creature's role as presupposition is a logical requirement of active creation, whose idea demands a certain type of creaturely *terminus ad quem* to make sense: a receptive bearer distinct from its received *actus essendi* and its passive creation. The necessity attaching to this requirement is purely conditional or hypothetical, in that it is entirely consequent upon active creation and the logic of its utterly gratuitous liberality.

created (whose effect includes that very establishment).

Obviously, the creature's exercise of instrumental causality in *passiva creatio* is not an action properly speaking. If anything, it is an *inaction*: not a doing but a being that, so to say, has the force of a doing. Put another way, it is a sufficing that has the value or effect of a causal exercise without requiring any additional activity beyond having come into existence at God's command. Just as God *is* his creative act, so the creature *substands* passive creation, while its sufficient doing-by-being is an analogue of the simplicity of the One whose creating is substantially identical with his being.

By the mere fact of coming into being at the Creator's behest, the creature communes with him, and in this communion it "does" (*inactively*) what it could never have done alone: *underlie* the gift of being thanks to which it exists.⁶⁶ But this communion with God at the level of first act, I now want to argue, is already the beginning of a similar communion in second act. Although the creature's initial self-reception is not yet an operation or an exercise of causality—it is still *inactive* in the sense described above—it contains the natural beginning of both. Even more, it provides both with an exemplar to follow while orienting them toward their proper end. It is here that we discover the first root of the connection between agency and end-seeking in the creature.⁶⁷

The connection is an inseparable one. Agency *is* end-seeking—understood as an aspiration to recapitulate the beginning in non-identical repetition.⁶⁸ We can say that the purpose of this recapitulation is to appro-

⁶⁶ God, the Pure Act and the Infinite Good, wills to be the common good he shares with creatures—not in order to gain anything from them, but in order to lavish on them the gift of co-participation. To be sure, this co-participation is both received and receptive: It is a (received) response, and obedience before it is an initiative and responsibility. But creatures enact this responsive obedience precisely by bearing fruit with God. Meister Eckhart captures the essential idea with admirable concision: "The fruitfulness of the gift," he says, "is the only gratitude for the gift" (cited from a vernacular sermon on Luke 10:38, listed as "sermon 2" in Meister Eckhart, *Werke*, vol. 1, ed. Niklaus Largier, trans. Josef Quint [Stuttgart: Deutscher Klassiker Verlag, 1993], 24).

⁶⁷ The creature's inactive self-reception is the root, paradigm, and beginning of the *entire* quadriform causality Aristotle ascribes to material substance. In the present section, I focus only on the relation between two of these four causes: the agent and the end.

⁶⁸ The non-interactive character of the creative act ensures the creature an absolute beginning in clean distinction from, and fruitful communion with, its Maker. The creature, for its part, does not merely suffer this absolute beginning, but has always begun to appropriate it; the creature's possession of an inner source of being and

priate the beginning more fully, but only so long as we add that the verb “appropriate” cannot mean “possess to the exclusion of God.” Just as the beginning includes a communion with God, the recapitulation of this beginning includes a communion with him both in its unfolding and in its completed fruit.

An implication of what I have just said is that the creature is open from the root of its being to a fruitful self-excess it both receives from God and achieves in communion with him. It is radically ready to let itself be guided and, in being guided, to be surprised. Its orientation to its end is an empowerment to play a role in an unfolding drama—not an entitlement to be spared the drama’s surprises, challenges, and risks. It is through this drama that God finishes doing in the historical order what he has already begun to do in the metaphysical, namely, to give his creature a share in the fullness of being by drawing it out of nothing toward the Beautiful.⁶⁹

We thus return to the insight we already glimpsed through Aristotle’s contemplation of the Prime Mover: The creature’s end-seeking agency is best understood as a fruitful recapitulation in second act of its self-reception from God in *actus primus*. The recapitulation at stake is obediential, since its inner shape is defined by loving assent to the divine intention that presides over the creature’s genesis and directs it to its end.⁷⁰ This obedience, however, is constitutive and liberating rather than destructive and alienating, because freedom and obedience, whose analogues occur on

operation—of a nature—shows as much. Nevertheless, because God is the one who first gives the beginning, the creature’s appropriation of this gift is never exhaustive. In appropriating the gift, the creature is exceeded by it; thanks to this excess, it is already on the way to unfolding the implications of the gift in ever-new ways. Seen in this light, end-seeking is the creature’s non-identical, forward-moving re-petition of its own primordial constitutive act.

⁶⁹ *Pace* the scientific naturalist, it is the marvelous interplay between natural ends and contingently colored contexts that constitutes the intelligible order of the universe. As Thomas argues in *SCG* III, ch. 74, God fittingly integrates chance and fortune into his providential plan so as to give the finite, embodied agent an appropriate context for manifesting its perfection as such. Within this context, the agent has an opportunity to know the goodness of being one of many in a world not of its making and not totally under its own control—and so to be given material for displaying the beauty of its telic completion in ever-new ways. (We glimpse a physical expression of this metaphysical truth in the contextual sensitivity of living beings, which have the power to respond with astonishing plasticity to unforeseen circumstances in creative fidelity to their respective natural ends.)

⁷⁰ I am speaking about what the creature always finds itself doing by nature—not about how it might modify nature’s operation by reason of the individual coloring it gives to the operation.

every level of the *scala naturae*, are not dialectically opposed antagonists, but mutually implicating goods. It is as if the whole cosmos had been created for the sake of the Hour when Jesus, praying in agony to his Father, achieved the supreme freedom of the rational will through its supremely fruitful self-surrender into the hands of his Paternal Begetter. It was in this Hour that the creature's desire to beget in beauty became, at long last, fully transparent to fruit of the Father's beautiful begetting.

Godlike Instruments

Now, even granting that creatures are most agents in their own right when they are most instruments of God, whose use of them grounds their intrinsic dignity as agential end-seekers, it still remains to ask what God uses creatures *for*. What is the fruit he uses them to commune with him in producing? Aquinas suggests an answer to this question when he affirms that "the ultimate end of things [is] to become like God"⁷¹ so that "each thing tends to Godlikeness *as to its own end*."⁷² If Aquinas is right, the fruit in question is nothing other than creatures's assimilation to himself—an assimilation that grounds, finds expression in, and depends on their own immanent self-perfection.⁷³

Thomas's term for becoming Godlike—*assimilari Deo*—has a dynamic connotation. It suggests a *Godwardness*, an upward correspondence to the Creator, a referentiality of the entire creaturely analogue to its divine archetype.⁷⁴ What, then, about the creature's instrumental self-recep-

⁷¹ Aquinas, *SCG* III, ch. 19: "Ultimus finis rerum [est] Deo assimilari."

⁷² Aquinas, *SCG* III, ch. 25: "Unumquodque tendit in divinam similitudinem sicut in proprium finem."

⁷³ Inasmuch as the creature's self-reception from God belongs to first act, its subsistence expresses a double ontological love: Loving God, the creature loves itself as his likeness; loving itself as God's likeness, it loves itself as a non-divine subject that is both the fruit and the supposit of its receptive dependency on the Creator. In this complex, the Godward love is the prior ontological source of the selfward, while the selfward love is an obediential implication of the Godward. In order to complete its likeness to God, moreover, the creature also must also imitate his gesture of communicating his proper good as *bonum commune* of the universe. The creature thus loves its proper good as a *bonum commune* for its fellows. In naturally loving God above all things, it loves both itself in light of God and its "neighbor" as itself for God's sake.

⁷⁴ This correspondence is analogous to form, while the creature's proper subsistence and perfection play the role of the proximate material this form is expressed in. These realities thus stand to God-likeness as a living body stands to soul—incarnating it, quasi-sacramentally expressing it, and even serving as a kind of ontological support for it.

tion spoken of in the previous section? Does it, too, enter into dynamic Godwardness? Does it manifest some perfection in the Creator? I want to suggest that it does, insofar as it plays a role in manifesting God's *ad extra* causation as the archetypal form of what I am going to call "contemplative self-use."

This thesis implicitly challenges the widespread assumption that use is always necessarily degrading to the used.⁷⁵ Fortunately, the degrading use of things or people is not the only possible variety of use. It is not even the ontologically normative and paradigmatic one. Degrading use presupposes right use, and there is no right use without care for the nature of what is used and respect for its intrinsic goodness.

Now, such care implies responsiveness, just as responsiveness, in its turn, implies contemplative receptivity. Right use is contemplative in being pragmatic.⁷⁶ This is not to deny that right use is ordered to results, but only to insist that results are not merely benefits to the user. They are that, of course, but they are also primarily disclosures, are manifestations of natural potencies and teleologies in new and appropriate ways. (We are dealing with a way of participating in divine governance that both shares in its authority and is responsible to its intentions.)

To be sure, if I ask a friend why he is hammering a nail into the wall, he will likely answer me by citing the satisfaction of some practical need such as "to keep this board from falling out," "to put up a picture-frame," or the like. Nevertheless, while such need-satisfaction does represent a *telos*, the *telos* in question is what we might call a "material end," or the end considered as matter. But the material end is for incarnating a form; it is the apt matter of which we might call the "formal end." In my friend's case, the formal end—the end that makes the need-satisfaction he cites both choice-worthy and intelligible—is the activity of maintaining a home fit for human habitation (and, beyond that, the activity of living well as a

⁷⁵ I acknowledge that a great deal of actual use seems to warrant this assumption. One would have to be blind not to see how the ubiquitous *libido dominandi* constantly suggests ever-new ways of treating both people and things as *mere* means whose goodness (if there is any) is entirely relative to the desires of the user. Ironically enough, this sort of use is at least as degrading to the user as it is to the used. It enmeshes him in a master–slave dialectic while distorting him into the morally misshapen form of the habitual degrader.

⁷⁶ For an already classic account of the contemplative character of right use, see Matthew B. Crawford, *Shop Class as Soulcraft: An Inquiry into the Value of Work* (New York: Penguin, 2009). See also D. C. Schindler, "Work as Contemplation: On the Platonic Notion of *Technē*," *Communio* 42 (Winter, 2015): 594–617.

human being).⁷⁷ The point I wish to stress is that this activity—like every formal end—is primarily disclosive. Its primary perfection is to reveal both human nature and the world’s potential to become the dwelling place of human nature so revealed.

Let me be clear, before moving on, that even the results of need-satisfying activity are not merely excuses for disclosive activity. They are its fruits, looked at materially. In this capacity, they represent a *sine qua non* of the good of disclosure and a test of its authenticity. Imagine a carpenter who claimed to be interested only in disclosing the beauty of wood, but not in making anything out of it. We would have good reason to wonder aloud whether he had in fact ever disclosed the beauty of wood except in his imagination. Of course, he might protest that he had indeed disclosed the beauty of wood, but was simply unconcerned about utility. “I’ve made some lovely chairs,” he might say, “and that’s enough. It’s a matter of indifference to me whether they’re useful or not.” Even after having heard this protestation, we would have reason to doubt whether he had in fact disclosed the beauty of the wood, at least in the manner expected of a good carpenter. A lovely chair, after all, would have to bring out the beauty of the wood *in chair form*, and a chair that does not work would therefore be a failure even on aesthetic grounds, at least insofar as we are dealing with the aesthetics of carpentry.⁷⁸

With that, I return to the main thread. While use-as-disclosure is productive (it draws otherwise latent potential into actuality), I want to say, it also begins in contemplation (it is rooted in a receptive vision

⁷⁷ Although use is conditioned (conditioning1) by the necessity of matter, this very conditioning is itself conditioned (conditioning2) in another way by the necessity of the (formal) end. It is the vision of the (formal) end that puts conditioning1 in our hands as a constraint that unleashes inventiveness—rather than as a compulsion that forces behavior. Contemplation of the (formal) end, in other words, ensures that need-satisfaction is not an absolute in itself, but an opportunity and material for living well as human beings. To be sure, needs can sometimes compel their own satisfaction, as when hunger drives prisoners in the Gulag to struggle ruthlessly for scraps of food. Nevertheless, even in such extreme cases, we remain embodied rational beings able in principle to understand need-satisfaction as necessary condition of being, rather than as its end and meaning.

⁷⁸ As this latter example suggests, the results of need-satisfying activity are not just a *sine qua non* of the good of disclosure and a test of its authenticity. They also partake of this good. Even more, they enter into it themselves. For one thing, they help give it the constraints and contexts it needs to be specific and pragmatic enough to count as a real disclosure, rather than a merely imagined or asserted one. Here we have yet another example of the way in which the necessity of matter is rooted in, and serves, the self-diffusiveness of the good.

of natural potency) and renders the contemplated visible to the gaze of others (it displays natural potency in new and appropriate ways). In its very productivity, then, use is both receptively and disclosively contemplative: This is the truth that, as Martin Heidegger glimpsed, remains latent within the technological conflation of knowing and making, nature and art.⁷⁹ The regeneration of science requires retrieving this truth in a new synthesis more responsive to the given natures of things.⁸⁰ More on this point in the conclusion.

Granting that use is a practice of contemplative disclosure, what does it disclose? A partial answer is that it discloses the *thinghood* of natural entities. By “thinghood” I mean, in the present context, the quality the word “thing” typically evokes in common parlance: an it-like “thereness,” a reliable availability that can appear so obvious and so able to be taken for granted as to require no further explanation. It is partly because thinghood in this sense can seem so anonymously indifferent to all comers that we are quick, at least within the horizon of everyday speech, to assume that it is an imperfection incompatible with intrinsic dignity or goodness. Things, we are tempted to think, are essentially neutral conveniences that can only be exploited, never contemplated, because they offer nothing to receive or disclose beyond the bare brute fact of “thereness” itself.

I propose a contrasting interpretation of thinghood that turns the just-cited view on its head. Yes, thinghood connotes a reliably available “thereness.” Yes, to be a thing in this sense is to be available for all comers, like the sun that rises equally on the just and the unjust alike. Far from betraying a deficit, however, such availability manifests a perfection. It displays the dignity of an intrinsically good creature that, in one simple gesture, both

⁷⁹ This is one of the principal theses of Heidegger’s essay *Die Frage nach der Technik*. For a decisive diagnosis of the conflation of making and knowing in technology, see chapter 3 of Hanby’s *No God, No Science?*, especially 107–49.

⁸⁰ In order to be pragmatic, use must rely on natural potencies and their constitutive character. To be sure, use innovates on the expression of these potencies, but, in so doing, it must also conserve their natural form and virtue, lest it saw off the branch it is seated on. Use innovates conservatively. To innovate conservatively, however, is not just to intervene or modify; it is also to show forth something seen. It is to enact a disclosure that unites production and revelation. Such disclosure is as contemplative as it is “poietic,” both because it begins with a beheld good and because it ends with the manifestation of this good *ad extra*. Far from being a degradingly utilitarian affair that must be corrected, supplemented, or replaced by contemplation, use itself already embodies a form of contemplation. This is not to deny that contemplation can and should also exist apart from use, but only to insist that use, when rightly understood and practiced, both presupposes contemplation and enacts a species of contemplative receptivity itself.

self-assuredly takes its place among its fellow beings and selflessly places itself at their disposal. The association of “thereness” with neutral brute facticity is a misinterpretation, even a willful distortion, of what is in fact a kind of ontological love.⁸¹ It is an attempt to re-conceive the vulnerability of what is lovingly given over into the world as a pretext for abuse rather than as a summons to care.

Human use, then, contemplatively discloses thinghood as an intrinsic good that is also an at-least-incipient *bonum commune*.⁸² But man’s use of creatures (“art”) is itself analogous to a self-use on their part (“nature”).⁸³ Creatures first use themselves in serving as instruments of their own passive creation, and they prolong this self-use in moving (themselves) toward their respective ends under providence.⁸⁴ It is as if they contem-

⁸¹ “Thereness” is not a neutral, brutally factual bare minimum. In natural entities, at least, it is an inner implication (and condition) of enmattered form. For, if the form is to be true to its nature and task, it has to be poured out upon matter. Indeed, it has to exist in the state of having been outpoured. It has to be an actuality, yes, but one always already “made over” to an underlying subject that is not simply itself. There is never a moment, then, when the form is anything but the completion (in first act) of a body, the unconditional reality of a corporeal thing fully present in the world. By the same token, the body’s worldly “thereness”—vehicled through the accident of dimensive quantity—is not alien to the perfection of enmattered form, but is its quasi-sacramental symbol, a display and prolongation of its indissoluble mixture of actuality and outpouring. And this mixture, I contend, is a kind of ontological love.

⁸² The intimate connection between thinghood and common goodness is developed in D. C. Schindler, *The Politics of the Real: The Church between Liberalism and Integralism* (Steubenville, OH: New Polity, 2021). The connection is also implicit in Hannah Arendt’s treatment of thinghood in *The Human Condition*.

⁸³ The tool, it is important to see, is also a *thing*: a definite entity reliably available for work within the human world. The thinghood of tools would of course be unintelligible without the functions to which they are ordered, but their very relation to their respective functions founds a thing-like permanence. This, I want to suggest, is because the function, the work to be performed, is a disclosure of natural thinghood—the power to achieve such a disclosure being embodied, and kept ready for action, in the very design and shape of the tool. The primal thinghood of natural bodies, as it is potentially disclosed in use, is thus reflected from the opposite side—and so made present in a new way—in the artificial thinghood of the tool. This “artificiality,” it is important to add, does not connote violence or factitiousness, but an imitative recapitulation of nature and the mode of its operation.

⁸⁴ To be sure, only living bodies move themselves in the strict sense; only they are properly both users and the equipment they use. Nevertheless, inanimate bodies enjoy an analogue of self-motion consisting in their aptitude to behave in certain ways under the appropriate circumstances. Water is by nature apt to boil at 212 degrees Fahrenheit and to freeze at 32 degrees. These aptitudes reveal it, in turn,

platively received their idea from the Creator and, in so doing, began to disclose it through an end-seeking that is self-perfective, self-diffusive, and self-revelatory in one.

Even inanimate substances participate in the perfection of contemplatively disclosive end-seeking.⁸⁵ They do not merely lie about inert, but are endowed with what Yves Simon has called an “existential readiness,”⁸⁶ a finalistic aptitude to assert their presence and make themselves available to others in determinate ways appropriate to their natures.⁸⁷ It is as if

as a real but incomplete agent or user: incomplete, in that it cannot initiate any particular behavior of itself alone; agent- or user-like, in that its behavior is nonetheless rooted in a nature belonging to every aqueous mass.

⁸⁵ At least some naturally occurring inanimate bodies are Aristotelian substances: bearers of a *per se* unity that cannot be the accidental result of aggregation or the pure end product of assembly. Even water is arguably such a substance. One piece of evidence for this claim is that water, as we experience it, cannot be formally identified with its chemical composition. On the contrary supposition, the entire range of macrophysical phenomena that seem to characterize experienced water (from wetness to boiling) would be accidents of something other than water as it appears to us. But we would have to ask, in that case: *what* are these accidents actually accidents *of*? They cannot be accidents of the single, uncombined H₂O molecule, which displays none of the properties mentioned above (the H₂O molecule is not wet). Can they be the unintended byproducts of aggregations of H₂O molecules? If these molecules have a natural tendency to aggregate in the precise ways needed for experienced water, then they are best understood as structured potencies for the latter. By the same logic, then, their appearance as discrete particulate entities does not manifest their complete actuality (only experienced water does that). Nor does the term “aggregation of H₂O molecules” indicate any reality other than experienced water *looked at materially*. It should be clear—to answer the question posed just now—that experienced water cannot be a byproduct of what it itself consists in materially, especially since the matter, as already noted, is best understood as a potency for water-as-experienced.

⁸⁶ See Yves R. Simon, *The Definition of Moral Virtue* (New York: Fordham University Press, 1986), 72–74. Simon’s discussion of existential readiness (his synonym for finality, especially in inanimate things) suggests that nature already contains the beginning of *habitus*, which is not simply habit, but a self-holding in active receptivity.

⁸⁷ In one sense, this aptitude makes possible a certain kind of reduction of the science of living things to the science of body *tout court*. I say “a certain kind of reduction,” because I want to distinguish the *reductio ad physicam* I have in mind from what I regard as its counterfeit: the supposedly “scientific” reductionism that, in one way or another, denies life (or soul) any proper ontology over and above that of extended matter. This reductionism, which is the dialectical twin of Cartesian-style dualism, wrongly supposes that the *res extensa*—but we should really be talking about the *res corporea*—is the opaque “other” of life, the dialectical negation of vital self-unity. But this is not the case. Even on the level of inanimate

inanimate beings delighted to show by their uncomplicated and unstinting “thereness” what it means for all matter and every body to be an “image of the (divine) Good.”⁸⁸

The unfussy “thereness” of inanimate substances reveals an incipient analogue of contemplative self-use. But what is already true of inanimate substances continues to be true in proportionately richer ways on each higher level of the *scala naturae*. We are dealing with a perfection belonging in different ways to all natural beings (indeed, to all creatures). The next step is to consider how this worldly perfection reflects the divine source of the world and finds its transcendent exemplar in his world-grounding self-communication.

In beholding his essence for its own sake, God also knows and wills it as a common good for creatures to share with him. But if God is to know and will his essence as the common good of all, he must also know and will it as the exemplar of the proper good of each.⁸⁹ He must behold the divine essence as the divine ideas.⁹⁰ Insofar as God’s vision of these ideas

entity, we observe a certain conversion between substantial self-unity and exteriority. Such self-unity-in-exteriority, moreover, arguably represents a perfection that, with the proper analogical recasting, enters into actuality specific to living bodies. This perfection helps animate things maintain themselves in the fluid middle between inside and outside, self and world (as we see them doing in metabolism, reproduction, sensation, and the like). For an illuminating exposition and defense of this thesis, D. C. Schindler, “*Analogia Naturae*: What Does Inanimate Nature Contribute to the Meaning of Life?,” *Communio* 38 (Winter 2011): 1–24.

⁸⁸ For both this expression and a profound and lucid exposition of its meaning, see Rachel M. Coleman’s unpublished 2019 dissertation, “Matter as an Image of the Good: Ferdinand Ulrich’s Metaphysics of Creation.”

⁸⁹ This is especially true given that creatures are not to become the divine essence, but to participate in it, each by means of a proper likeness. God would not truly give his essence as the common good unless this gift produced another who shared in the essence without being absorbed into it (and that can happen only via a proper likeness inhering in the creature and orienting it to dynamic participation in God).

⁹⁰ For Aristotle, God’s self-contemplation is the efficient cause of the world. Aquinas clarifies and deepens this insight with his doctrine of the divine ideas. In contemplating himself, Thomas says, God contemplates his (possible) effects. Rather than deriving his idea of his effects from them, however, God derives his effects from his idea of them. The idea itself derives directly from the divine essence. Even more, it *is* the divine essence—seen and willed as the term of a possible imitation, participation, and reflection on the part of what is not itself (see Aquinas, *ST I*, q. 15, a. 2, corp.).

Although the divine idea is a productive paradigm, it also has a contemplative dimension (see Aquinas, *ST I*, q. 15, a. 3, corp.). By the same token, I would add, it has an erotic connotation as well: It is as if, in beholding his essence, God caught sight of, and fell in love with, the beauty of the creature’s (potential) likeness to it

combines contemplation and production in an original synthesis, it is the primordial archetype of contemplative self-use.⁹¹ Insofar as it is simultaneous with (though rationally distinct from) his self-contemplation, it is also the primordial archetype of the uncomplicated “thereness” displayed by natural bodies.⁹²

Now, just as God’s *ad extra* causation discloses his contemplative self-use, it communicates a share in this contemplative self-use at the same time. When we say God “uses” his creatures as instruments, we are talking about just this communication. We are describing the concrete, “hands-on” way in which he grants them a share in the contemplative self-use by which he creates, conserves, and providentially governs them.

Having glimpsed this truth, we can return one last time to the scientific naturalist’s objection: Does God’s use of creatures as teleological instruments of providential governance not inevitably degrade them? Just the opposite is the case: In generously condescending to use creatures, God is not depriving them of any due good, but is showering them with gifts. As we have just seen, the first benefit he grants is participation in his own contemplative self-use (which itself coincides with his act of using them). But, let me now add, this first benefit immediately entails a second: empowerment to a contemplative self-use that is creatures’ own to the

(on this point, see Dionysius the Areopagite, *De divinis nominibus* 4.13). Clearly, such a contemplative-erotic “response” is not an accidental modification of the divine essence. It is, rather, a logical implication of God’s free and generous will to see it as a common good for creatures to share via their respective proper likenesses to it.

⁹¹ God’s pure actuality frees him both to be his creative act (which is substantially identical with him) and to wield it as its agent (inasmuch as he possesses it as something rationally distinct from himself). By the same token, pure actuality enables him to unite in himself the whole perfection of instrumentality and the whole perfection of agency so as to be “the source of the whole of *esse* according to the whole of himself” (Aquinas, *De potentia*, q. 3, a. 1, corp.: “*totius esse principium, et secundum se totum*”).

⁹² God’s choice to give himself as the common good of all that is not he is an irrevocable one; it is like a pledge to uphold and finish what he has begun. To be sure, the pledge does not tie God’s hands, as if it limited him to repeating what he has already done instead of weaving all things “counter, original, spare, strange” (to cite Gerard Manley Hopkins’s poem *Pied Beauty*) into the fabric of created reality. Nevertheless, God’s pledge is a real commitment to conserving and perfecting his handiwork, so that even his boldest surprises—indeed: *even his supernatural miracles*—presuppose, save, and crown the natures he has made. Every new moment in our daily lives is fresh proof of this inexhaustible capacity to combine orderliness and surprise into an indissoluble whole that is at once dependable and challenging, static and dynamic, cosmic and historical.

extent that it is a divine gift, and *vice versa*. It is by its own contemplative self-use that the creature finishes ratifying the Creator's covenant-like offer of fruitful communion with himself.

Creatures, then, are not empty, fungible conveniences. They are *Godlike instruments* that serve providential governance as its free and obedient ministers. To be sure, there remains a fundamental, irreversible asymmetry between creature and Creator: The former is by nature the instrument of the latter, while the latter is not by nature the instrument of the former. But this asymmetry is not an evil. It is a liberating boon that secures the good of the creature's distinction from God while weaving this distinction into the good of its communion with him.

Conclusion: Redeeming Technology

What, then, about the objection posed at the beginning of this essay? Does the teleological instrumentality of creatures contradict their worldliness and their availability for science? Here, too, the answer must be negative.

In using creatures as teleological instruments, God also empowers and equips them for their corresponding (contemplative) self-use. In the case of corporeal substances, he does this by giving them finalistic agency with a hylemorphic shape: one defined by the inexhaustible, inextricable interplay between the necessity of matter and the necessity of the end, on the one hand, and natural ontology and spatio-temporal historicity, on the other. The resulting interplay inserts corporeal substances in the world and opens them to science (while withdrawing them from exhaustive control by either). But if, in so doing, it merely reveals and completes their teleological instrumentality (which their contemplative self-use coincides with), how can the latter threaten either their worldliness or their availability for scientific study? How can it be anything other than a *sine qua non* of both goods as expressions of nature's own non-naturalist ontology?

This conclusion stands out even more clearly when we consider that corporeal substances cannot attain their ends without the appropriate material equipment (which is first their own bodies). End-seeking, for them, depends on matter. This dependence is rooted, to be sure, in the necessity of the end; it is a requirement of the end's own nature as the completion in second act of a contemplatively self-using bodily agent. But the very fact that the dependence we are dealing with is a requirement of the *ratio finis* implies that it is not a misfortune, or any kind of accident at all, but an intended good. The point I want to stress here is that the same applies to the constraint imposed by matter on end-seeking as a result of the dependence: This constraint—the *necessitas materiae*—is also an

intended good. Or, more precisely, it is a proper participation in the goodness of the end, which, in receiving the determination² from the end, also helps the end be true to its own nature and exigencies as the completion of a corporeal substance.

Appreciation for the naturalness of nature, then, does not require us to endorse the scientific naturalist's attempt to immure the universe in its own supposedly self-sufficient immanence. This attempt, I have suggested, can be understood as an effort to keep out a God whose involvement in the world, the naturalist believes, would compromise its availability for science. As I hope to have shown, the truth of the matter is actually the opposite. God's unceasing, intimate involvement in the universe is what provides science with the entirety of its potential subject matter. The concrete actuality of all there is to be known depends on God's energetic involvement in the concrete actuality of all there is.⁹³

Seen in this light, scientific naturalism looks like a bid to secure an autonomous subject matter for science by abstracting it from the actual universe. Although there is nothing wrong with abstraction in general, this particular instance of it is far from harmless. Inasmuch as it serves the construction of a (supposedly) God-proof autonomy, the naturalist abstraction entails a re-conception of natural being as a brute facticity devoid of all theological significance.⁹⁴ The perversity of this re-conceived

⁹³ To know things as they truly are is to know them as co-members of a cosmos that (like every entity it contains) exists only in virtue of being known, conserved, and governed by divine providence. As John Henry Newman explains with unsurpassed clarity in *The Idea of a University*, each special science can lay hold of the concrete actuality of its respective object only to the extent that it is ready to grasp this object in relation to a universe of beings owing its entire actuality to God's providential government: "Summing up, Gentlemen, what I have said, I lay it down that all knowledge forms one whole, because its subject-matter is one; for the universe in its length and breadth is so intimately knit together, that we cannot separate off portion from portion, and operation from operation, except by a mental abstraction; and then again, as to its Creator, though He of course in His own Being is infinitely separate from it, and Theology has its departments towards which human knowledge has no relations, yet He has so implicated Himself with it, and taken it into His very bosom, by His presence in it, His providence over it, His impressions upon it, and His influences through it, that we cannot truly or fully contemplate it without in some main aspects contemplating Him" (*The Idea of a University*, discourse III, no. 4, newmanreader.org/works/idea/discourse3.html).

⁹⁴ This re-conception gets its plausibility from the "thereness" spoken of just now, insofar as this "thereness" includes an availability for productive use. For this very reason, however, it is transcendently important to understand the character of "thereness" properly—not as a neutral facticity, but as the efficacious communicative symbol of a generous thinghood.

nature, let me stress, does not lie simply in its silence about God. It also lies in the resulting suppression of what natural being most properly is: the agential end-seeking, at once self-perfective and self-diffusive, through which God administers his providential government of the universe.

What is ontologically primary about the natural world is agential finalism. But the ontologically primary is, in this case at least, epistemologically primary as well: Agential finalism is the abiding source, measure, and end of all our knowledge of the natural world in all its parts—including the microphysical entities, energies, and processes discovered or theorized by conventional science. Every causal factor invoked by this science to explain the behavior of material things presupposes, and reduces back to, some *per se* agent seeking its proper end. For the same reason, it also presupposes, and reduces back to, what the end-seeking agent most properly is. And what is *that* if not an undivided whole embodying actuality and the quadriform causality articulating actuality's co-essential self-communication?

Now, the ontological-epistemological primacy of agential finalism is so absolute that even conventional science cannot help implicitly knowing it in everything it knows. This is one reason why the actual results of scientific work tend to exceed the conventional scientific imagination, not to mention the one-track control fantasies of scientific naturalism. But why should science explicitly acknowledge its pervasive but implicit reliance on agential finalism? Would that step not be un- or anti-scientific?

In reality, the opposite is the case. Science itself, in fact, needs to learn such acknowledgment if it is going to acquire a built-in, intra-scientific capacity for systematic self-scrutiny in light of its still tacit principles (and that means: in light of agential end-seeking). This self-scrutiny is no luxury: Lacking it, science almost inevitably succumbs to a double temptation to reify its own abstractions and to elevate its power to produce them into the sole criterion of truth. But once it starts down this road, science is already a form of technology, which, in subordinating "should" to "can," replicates the disjunction between the possible and the good typifying the (il)logic of human sin.

In order to free itself from the grip of scientific naturalism, which drains the cosmos of its concrete saturation with the *Tao* and turns knowledge into technology, science must restore the contemplation of agential finalism to its architectonic place in the study of nature. In order to do that, however, it must re-learn to see end-seeking agents in their full concreteness. It must learn to see them, then, as what Hans Urs von Balthasar, following Goethe, calls *Gestalten*. By *Gestalt*, Balthasar means in this context the substance looked at as an undivided, self-manifesting

teleological whole that precisely as such is a symbol of God (as well as of its fellow creatures, the cosmos, and *esse commune*):

Everything occurring in reality is, to one analogically diversified degree or another, “*Gestalt*-like,” the “elevation” of a *Gestalt* being judged by the proportionately greater power of its unity to gather into oneness manifolds similar to itself [*Ehrenfels*]. Nevertheless, all *Gestalten*, in opening themselves to the gaze of the spirit as they are naturally apt to do, refer beyond themselves to being, or *Sein*, which, as Goethe says, “cannot be grasped by our thought” on account of its completeness and perfection. The light that breaks forth from the *Gestalt* and opens it to the understanding is thus inseparably two things at once: It is the light of the form itself, which is why Scholasticism speaks of the *splendor formae*, and it is the light of being, *Sein*, as a whole, which the form has to be immersed in simply in order to constitute a unitary *Gestalt* in the first place. Here transcendence is directly proportional to immanence. Put in aesthetic terms: The higher and purer a *Gestalt* is, the more centrally the light breaks forth from its proper depths—and the more pointedly the same *Gestalt* refers to the luminous mystery of being, or *Sein*, as a whole. We can say the same thing in religious terms: The more spiritual and independent an entity is, the more consciously it can bear in itself the knowledge of God and the more clearly it can refer to him. Biblical Revelation simply cannot escape a law of metaphysics that is this fundamental, for God acts in human history, assumes a human *Gestalt*, and through this human *Gestalt* incorporates humanity into himself in the Church. In order to manifest itself in its unfathomable personal depth, then, Absolute Being, *das absolute Sein*, avails itself of the services of worldly *Gestalt* that speaks on two levels at once: the level of the ineliminable finitude of the *Gestalt* and the level of its absolute, self-transcending referral to being as a whole.⁹⁵

⁹⁵ Hans Urs von Balthasar, *Herrlichkeit: Eine theologische Ästhetik*, vol 1, *Schau der Gestalt* (Einsiedeln: Johannes, 1961), 32. Balthasar adds an important observation in a footnote to the passage just cited: “Every kind of form-bearing entity,” he writes, “unfolds itself out of a non-appearing depth. By the same token, it is always already more than just itself too: *übergestaltig*” (33n15). Everything we can describe as a *Gestalt*, Balthasar is saying, is at once itself and more than itself; its immanent completeness seamlessly coincides with its self-transcendence, its excess towards—and from—what is more intimate to it than it is even to itself: God, God’s proper effect, and, via *ipsum esse*, the entire *universitas creaturarum*. It is as if the Gospel paradox that we find our life by losing it were prefigured in the very

Science thus faces a stark choice: Either it restores *Gestalt* to thematic centrality—or it leaves itself defenseless against the technological perversion of knowing and the attendant anti-natural ontology. The scientific naturalist will doubtless still prefer the technological option on the grounds that it looks more this-worldly and secular than the contemplation of *Gestalt*. But if natural being reduces to *Gestalt*, and if the immanent integrity of *Gestalt* converts with its Godward symbolism, no study of natural being can avoid having religious implications.⁹⁶ The only question is which form these implications will take—the form of idolatry or the form of right worship. To assert that the worldliness of the world is neutral with respect to this radical alternative between idolatry and right worship is already to have preferred the former to the latter.

In reality, the technological mastery of nature is not as “purely secular” as it is commonly believed to be. In fact, it is arguably a form of perverse religiosity, which expresses a Gnostic resentment of bodily vulnerability while attempting to externalize it in quasi-magical fashion. The externalizing mechanism works in two steps: First we re-imagine bodies as totally available to human control; second, we try to achieve this control as a means of shifting the burden of unwanted vulnerability onto other shoulders supposedly incapable of complaint. This maneuver looks secular and neutral only so long as we accept the premise that bodies are in fact totally available to human control. Once we realize that this premise is an

ontological constitution of creaturely being. “[For] might it not be,” Balthasar asks, “that the eschatological mystery of God’s kenosis in Christ finds a prefiguring analogue in the metaphysical mystery of being, of *Sein* whose luminous fullness appears only in its emptiness of any proper subsistence?” (38). By *Sein* Balthasar means *esse creatum*, which he understands, with Thomas, as a non-subsistent actuality. Far from being an imperfection, Balthasar thinks, created *esse*’s lack of subsistence is a perfection pertaining to its nature as *received* act.

Note the hidden kinship between Aristotelian *eidos* and Goethean-Balthasarian *Gestalt*. The latter corresponds to the enmattered form that is the proximate object of natural science. For its part, the former highlights the dynamically self-revealing, symbolic character that, arguably, is already implicit in Aristotle’s account of embodied *eidos* as the concrete ingathering of self-communicating act and the quadriform causality that articulates it.

⁹⁶ It would of course be equally important to show that the *Gestalt* cannot symbolize the divine unless it is also a thing in its own right. We do not have to choose between a sacred cosmos and a secular world, but can have both at once, so long as we respect the absolute primacy of the *ratio* of the former and the relative primacy of the *ratio* of the latter—which is precisely what the recognition of creation as gift enables us to do.

illusion—that even our machines are not entirely subject to our will⁹⁷—we can see the maneuver for what it is: a Gnostic-inspired scapegoating, even a counterfeit anti-Eucharist, that does at least as much violence to human nature as it inflicts on the non-human world.

The foregoing is not an argument against using, changing, or even killing non-human creatures. All three activities fall within the purview of the vice-regal authority entrusted to Adam in the beginning. Nevertheless, the exercise of this authority is exposed to the temptation of tyranny—especially in a civilization that, like ours, has woven technology into the fabric of all of its main institutions, including science. This is why there must be a continual passing over from science to *scientia*, accompanied by a constant labor of intellectual-moral conversion away from the technological caricature of Adamic authority, toward the good stewardship proper to God's viceroy.

Where danger is, the saving means grow too. Even the technological conflation of making and knowing can become a “happy fault” by presenting an occasion to retrieve the disclosive power of contemplative use. But this retrieval depends on a reversal of priorities within the current technological mixture of the two: If technology subordinates contemplation to production, the redemption of technology requires the subordination of production to contemplation.⁹⁸ Our Adamic right to disclose the truth of things subserves our prior duty to honor their natures and the divine intentions they manifest.⁹⁹ It is only if we give ourselves over to the Creator

⁹⁷ I owe this insight to Matthew B. Crawford.

⁹⁸ This implies that use can be a form of contemplation only on two conditions. First, there must be such a thing as contemplation beyond use. Second, this other form of contemplation must be ontologically superior even to contemplative use. That said, even the purest contemplation is supremely fruitful. It is God's self-contemplation that gives being to the world in time, just as it is the Father's contemplation of the divine essence that brings forth the Word in eternity.

⁹⁹ The art of working out the hidden potencies of things is a great good, but in a fallen world even this good is never free from the temptation to reduce the actual—the undivided *Gestalt*—to a disposable pretext for the possible, or to regard nature as a mere reserve of anonymous energy for endlessly remaking the world at will.

Let me be clear: I am not suggesting that science should not concern itself with the inner workings of nature's art. I am not even denying that it should represent these workings as a sequential process involving relatively discrete parts in interaction. What I object to is the gratuitous assumption that such representation is perfectly transparent, without any correction, to the reality it represents. This assumption introduces a confusion between model and thing, the mathematical and the physical, which, in turn, enacts a mechanistic reading of nature's art. When we peer at the *autopoiesis*, or “self-making,” of natural entity through this distort-

as instruments of his contemplative use that we can fruitfully reveal the Godlike instrumentality of things as administrators of his providential governance.

The ideal of *scientia* is a radically anti-utopian one. Negatively, it serves to deflate the reigning mythos of scientific revolution as an almost eschatological breakthrough to the definitive, infallible revelation of nature apart from the haze of our animal subjectivity. Positively, it reminds us that every branch of science—even physics, chemistry, and biology—“is seared with trade; bleared, smeared with toil; / And wears man’s smudge and shares man’s smell.”¹⁰⁰ This is not to deny, of course, that we can know the world beyond our own head. It is to stress that our self-transcendence, looked at *in fieri*, is supremely dramatic in that it engages all our faculties, shows up all our limits and flaws, and, in inseparably doing both, stands within the mysterious interplay of divine Providence and human freedom we call “history.” Even our science, even our *scientia*, is a dramatic enactment of our teleological ordination to truth and to God—and, precisely as such, an episode within the “common groaning” (Rom 8:22) of creation for its “liberation . . . into the freedom of glory of God’s children” (Rom 8:21).

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ing lens, we no longer see the dynamic, often improvisational self-unfolding of an undivided unity whose art-like infrastructure we then try to understand on its own holistic terms. Instead, we arbitrarily reconceive the autopoietic as a *mere* self-assembly that, once its supposed “laws” have been discovered, can be understood without any “self” to do the assembling in the first place. The unity of natural substance, as far as we are concerned, dissolves into the epiphenomenal byproduct of a primitive duality that, by reason of its sheer twoness, lies entirely open to a manipulation aimed at altering the appearing *Gestalt* at will. (By the same token, we also obscure the character of art as a way of participating in, and prolonging, the self-manifestation of nature.)

¹⁰⁰ Gerard Manley Hopkins, *God’s Grandeur*.