

Thomistic Reflections On The Cosmos, Man, And Stewardship

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Introduction

THE FOLLOWING remarks attempt a very formal speculative treatment of cosmos, man, and stewardship, fecundated by the doctrine of St. Thomas Aquinas.¹ In what follows below, I shall *first* emphasize the speculative principles required to address the character of man's relation to, and limited stewardship over, the material cosmos—principles whose understanding slowly is re-emerging from the tunnel of an anti-realist eclipse within philosophy, systematic theology, and moral theology. While their consideration here is as propaedeutic to the contemplation of the dignity of the lower creation and of man's stewardship over it, nonetheless there is a strong case that the account of these principles is of greater value than their application in the ensuing analysis. Indeed, it is the absence of an appreciation of these principles that haunts contemporary thought in its relation to revealed truth, metaphysics, cosmology, anthropology, and ethics. Thus almost half of the following remarks regard the principles that are necessary to address the question in hand. Some of these are remote and some proximate, and so the treatment of these principles is accordingly divided.

Second, on the basis of these principles I will set forth an account of man's relation to the lower creation, to the cosmos as a whole, and to

¹ I take this occasion to acknowledge and thank Christopher J. Thompson, Academic Dean of The Saint Paul School of Divinity, for his invaluable inspiration, example, conversation, and criticism. Whatever may be good in the following work must trace its etiology to his encouragement; whatever falls short of its promise must redound to myself.

God. This account seeks to vindicate the limited but real dignity of the lower creation and the importance of stewardship precisely on the foundation of the role of the lower creation in the overall order of the cosmos and in relation to God. *Third*, I will consider cosmic order in relation to the good for man, arguing that the dignity of the lower creation, man's call to stewardship with respect to it, *and* the subordination of the lower creation to the good of man, all flow from the same foundation: the role of the lower creation in the hierarchic constitution of the cosmos. *Fourth*, an argument will be presented against the "boundary hypothesis," that is, against the view that the lower creation is demarcated from the zone of human agency and transformative technology by a mobile boundary that implies a constant shrinkage for the scope of undiluted nature as opposed to the growing chrysalis of human technology and technologically transformed nature. I argue that such a view fails to discern the foundation of the second in the first, and therefore fails to discern that what is in view is a limited and prudential, rather than an absolute, distinction. *Fifth* and finally, a few brief conclusory remarks will be offered regarding the prudential character of human stewardship of the lower creation.²

The account that follows is Thomistic both in its principles and in its insistence that any true regard for the lower creation has, finally, a theistic provenance which alike implies hierarchic subordination of lower to higher, and the dignity of the lower creation precisely with respect to our attainment of the most important truths.

Itinerary of Principles

General Considerations

There are of course dramatic and profound questions regarding the nature of human stewardship of the physical world. Yet manifestly, nothing in this consideration can proceed intelligently if knowledge of nature and being—in particular knowledge of the terrestrial cosmos and its

² It will be noted that I use the phrase "lower creation" rather than "environment"—this is for two reasons. (1) Man, as a rational creature, does not merely have an "environment" but a "world" which is indeed the ordered whole of the cosmos. (2) It is, as a function of metaphysical demonstration, true that all finite being is created, so that what we are speaking of with respect to the physical order is quite literally, vis-à-vis creatures endowed with intellect and will, the "lower creation." Moderns and postmoderns, having lost the *praeambula fidei* and so being deprived of the rigorous character of the metaphysical demonstrations for the reality of God, naturally tend toward reductionist formulae with respect to the order of the universe. The language of the Catholic tradition is otherwise, and should be stressed, just as Catholic authors speak of "procreation" rather than merely "reproduction."

normative relationship to the human good—is impossible. Under the circumstances, this is the moment when most contemporary environmentalists should be checking out of the discussion: because most of our contemporaries either do not believe that fixed knowledge of human nature and of the cosmos—of being and nature—exists; or else, alternately, they believe that our sole knowledge of the cosmos is through positive science, such that whatever knowledge of the cosmos there may be is minimal, tentative, provisional, and wholly separate from ethical wisdom and metaphysics. Those who reduce knowledge and science to the confines of positive science, and those who deny the *adequatio* of human intelligence to the real as such, can found no inference regarding human stewardship with respect to the lower creation because they can found no properly metaphysical, cosmological, anthropological, or ethical understanding whatsoever. This, in itself, goes far toward explaining why it is that reasonable engagement of what are called “environmental issues” often is lacking.

Thus it is manifest that significant rational deprivations afflict the effort to understand man’s relation to the lower creation. The first of these is the denial of the metaphysical *adequatio*, the conformity of intellect with being and nature. The principle of noncontradiction is widely today supposed to be a merely logical principle, rather than—as Thomas noted in question 94, article 2 of the *prima secundae* of the *Summa theologiae*—“founded upon the opposition of being and nonbeing.” Although nonbeing is merely conceptual, being is real. Just as it is eternally true that the divine nature is not a created nature (and this proposition would be true even had there never been creatures, such that it is manifest that divine nature is really distinct from created nature), just so, being is by its real nature—analogically understood—really distinct from nonbeing. There is no real *relation* of being to nonbeing; nonexistent things have no real relations, and nonbeing is pure negation. But there is a real distinction: the real distinction between being and nonbeing is founded on being which is itself real.

In Book III of the *Will to Power* Nietzsche observed that to take this distinction as a real distinction implies a prior contact of the mind with reality. Just so: it does. The mind has immediate and direct *contactus* with the real—initially and chiefly (and this is not without importance for our discourse) with the sensible real, sensible being. Likewise pertinent to our discourse is the datum that this *contactus* with sensible reality is a function of the human intellect’s openness to the entire universe of being.

The purely natural but immaterial powers of intellect and will constitute in man the lowest foundational stratum of the *imago Dei*, the image

of God, in man. Were man's intellect and will not open to the universe of being, true, and good, then to be made a friend of God through grace man would need to cease being man and become a different species. But man's spiritual powers enable him to receive the divine aid and so to be uplifted to the divine friendship. This reflects the remarkable uniqueness of man's capacity to receive the entire material cosmos not physically but rather intentionally and spiritually, through knowledge: the universal openness of the intellect to being and nature. Without such openness, the very question of man's relation to the cosmos, and his responsibility with respect to it, could not arise. Man images God in an essentially nobler way in grace, and in an even nobler fashion in everlasting glory in beatitude, than is true simply according to the constitution of human nature in itself. But the nobler aspects of the *imago Dei* presuppose a natural substratum in man which is lowest in the order of perfection, but without which the *imago Dei* in grace and in glory would not be possible.

Even to raise the question of stewardship is implicitly and actually to acknowledge the distinctive openness to being, true, and good that characterizes the human creature as a function of man's rational nature. Man has not merely an environment, but a *cosmos*, because intellect is not materially reducible to physical limitations, howsoever much it is in its exercise correlated with these and dependent upon these. Of course, the intellect is dependent *not* with respect to its act as such, which transcends material limits, but with respect to the prerequisite conditions for attaining the object of its act: as the power of eyesight needs light to see, so the power of intellect needs its object attained through abstraction from the sensible phantasm in order to know; but knowledge is not sensation, as eyesight is not simply light. Were intellection supposed to be reducible merely to some modification of an intermediating (intermediating as between knower and known) material substrate—as is for example proposed in the view that knowledge is merely a function of the modeling of the real by the structure and activity of the brain—the following question arises. If all one's "knowledge" is limited to an intermediating model, and there is no direct knowledge of the real as such, how is it possible to judge that a model or intermediating medium accurately reflects the real?

If a photograph is said to be a likeness of my father, this makes sense only insofar as one may compare it to the original; but if the original cannot be known as such, one is in no position to say whether the likeness is good or not. To remain momentarily with the language so often used of our knowledge as a function of a sort of neural "encryption" in the medium of the brain: if there is no *direct* knowledge of the real as

such, how can one know that this “encryption” or this medium and its structuring are in the least adequate to reality? On the hypothesis of knowledge as a function of the modeling of the real by the brain, the brain must be adequate to model the real, and hence adequate to model itself too—but without direct knowledge of the real we are in no position to know that this is so, and indeed thus in no position even to know that the brain exists. If, and only if, the intellect has the capacity to conform in the *intentional* order to the real—to become intentionally rather than physically its object—is objectivity possible. If objectivity is not affirmed, then there is no foundation even for the claim that brain activity exists. The idea that intellectual intentionality, which is intrinsically immaterial, can be replaced by reductive physical causality (as opposed to the explication of intentionality and knowledge in relation to ontological causal analysis in terms of act and potency) is a self-immolative proposition wholly inconsistent with rational objectivity. That brain activity, and sensory activity in general for that matter, may be a predispositional requisite for the mind to obtain its object *via* abstraction, does not alter or obviate the intrinsically immaterial nature of the supervening intellectual act performed with respect to the object so obtained.

Likewise presupposed to this consideration of cosmos, man, and stewardship are the four causes—material, formal, efficient, and final—and the real division of being by act and potency, a proposition whose apodicticity is today little understood. These principles are important because they enter into the articulation of the cosmological order that is participated by the lower creation. We must largely leave aside a more thorough examination of the four causes, with the exception of a consideration of *finality* in the next section below, where the analysis sustaining unified normative teleology is discussed.

Yet it would be a mistake not to comment further on the doctrine of the division of being by act and potency, and to leave unobserved just how close is the real distinction of potency and act to the principle of noncontradiction understood as a real metaphysical principle. The division of being by potency and act is a proposition perhaps developed initially with respect to the physics, but developed in answering the essentially *metaphysical* challenge of Parmenidean monism and pregnant with implicit and actual metaphysical significance.

For it is not enough to see that being is in fact many, limited, and changing either in order to account for and explain what it is in being that enables it to be many, limited, and changing, or to reconcile this judgment with the principle of noncontradiction. It is the discovery of *potentia* as a real principle dependent upon act but distinct from and founded upon

it—a principle that is a principle of being and not identical with mere negation—that answers this formal metaphysical interrogatory. As the *capacity* for being represented by a certain nature is *potentia* vis-à-vis its actual being, or as the sculptability of marble is *potentia* vis-à-vis its actual sculpting, so potency is not act, but is founded upon act and limits it.

The challenge of Parmenidean monism—that being is identical with itself and therefore radically unitary; that nothing exists outside of being that could limit it, so that being is unlimited; and that being is not nonbeing, cannot be nonbeing, and so cannot change—is answered by the discovery of potency as a real principle in being that accounts for many-ness, limit, and change. Act is not self-limiting—the very denotation of “act” is of itself not a denotation of real limit—but is limited only by its relation to potency.³ This foundational discovery of being as divided by potency and act is at the heart of Thomistic metaphysics, of the real distinction of essence and existence (which, one recalls, in *De ente et essentiae* philosophically hinges on the argument that all the ways in which being is plurifiable presuppose *potentia*),⁴ and indeed is the real foundation for the doctrine of participation (which Thomas always, after his *Scriptum*

³ This of course does not mean that potency temporally antecedes act, nor that an initially infinite act is somehow contracted by potency (as though the existence of the frog were infinite but at the last minute limited by the frog nature). Rather it means that act as such is not self-limiting; when God causes a thing to be, its actuality is received by and proportioned to a potential principle in relation to which the limit of act occurs. This is clear when one considers essence as potency vis-à-vis existence as act. God ordains that a being whose nature represents a certain capacity for existence comes into being, and potency and act are caused simultaneously, the potency depending upon the act (as the essence depends upon existence) and the act (e.g., existence) being limited by the potency of which it is the act. But the priority of act is natural, not temporal; and although act as such is not self-limiting, this is not to say that *first* a created existence was infinite and *then* it was limited by potency, because what makes for created existence as finite perfection is *precisely its delimitation by potency*. Yet act *as such*, most formally considered, is not self-limiting; nothing in the real analogical denotation of “act” designates potency as such. Act is limited only in relation to potency. This analysis seems to rule out the interpretations associated with Rudi A. te Velde, *Participation and Substantiality in Thomas Aquinas* (New York: E. J. Brill, 1995), especially 152 and 154. On this matter, it would appear that John F. Wippel—cf. *The Metaphysical Thought of Thomas Aquinas: From Finite Being to Uncreated Being* (Washington, DC: The Catholic University of America Press, 2000), 129—is correct regarding Thomas’s teaching.

⁴ Text from the *Corpus Thomisticum*, *S. Thomae de Aquino opera omnia*, made available online by the University of Navarre (www.unav.es/filosofia/alarcon/amicis/ctopera.html#OM), *De ente et essentia*, *Caput 3*: “Ergo patet quod esse est aliud ab essentia vel quiditate, nisi forte sit aliqua res, cuius quiditas sit ipsum suum esse;

on the Sentences, articulates in terms of the likeness of diverse *rationes* of act as limited by potency, which is the *evidence* upon which the mind rises to the affirmation of the reality of God). These remote principles are all bound up with, and indeed, *derived from*, a knowledge of the absolute object (universal being), formal object (the true), and proper object (quiddity in corporeal matter) of the human intellect. Not to be aware of the metaphysical profundity of the knowledge available to man, is in a sense not to be capable of understanding the dignity of the lower creation and its place in the hierarchic ordering of the cosmos. The very question of stewardship over the lower creation itself implies a real relative transcendence with respect to it on the part of man—a relative transcendence that materialist anthropology cannot in the least explain. Likewise, the metaphysical roots of theism deriving from the analogicity of being as the likeness of diverse *rationes* of act as limited by potency are required for the causal analysis reaching to the reality of God, and for the subsequent account of participation, both of which provide the general context for contemplation of the role of the lower creation within the cosmic order.

Proximate Considerations

The principles considered above—metaphysical realism; the adequation of mind to the real; the relation between the first principle of noncontradiction and the real division of being by act and potency as the foundation for the theistic proofs; the reality of the four causes—are formally necessary but in a certain sense remote. By contrast there are three crucial principles that must here exact from us a greater consideration, because they are most formally and proximately essential to this analysis. These principles are first, normative unified natural teleology; second, the primacy of the speculative vis-à-vis the practical reason; and third, the transcendence of the common good. On these three principles hang not only the correct approach to the subject of cosmos, man, and stewardship, but a proper insight into the nature and implications of the natural law.

et haec res non potest esse nisi una et prima, quia impossibile est, ut fiat plurificatio alicuius nisi per additionem alicuius differentiae, sicut multiplicatur natura generis in species, vel per hoc quod forma recipitur in diversis materiis, sicut multiplicatur natura speciei in diversis individuis, vel per hoc quod unum est absolutum et aliud in aliquo receptum, sicut si esset quidam calor separatus, esset alius a calore non separato ex ipsa sua separatione. Si autem ponatur aliqua res, quae sit esse tantum, ita ut ipsum esse sit subsistens, hoc esse non recipiet additionem differentiae, quia iam non esset esse tantum, sed esse et praeter hoc forma aliqua; et multo minus reciperet additionem materiae, quia iam esset esse non subsistens sed materiale. Unde relinquitur quod talis res, quae sit suum esse, non potest esse nisi una.”

1. The first—normative unified teleology—affirms that agency can neither be nor be known apart from the end for the sake of which it exists, and that there is order not only between acts and ends but among ends.

Normative unified teleology—the co-measuring or commensuration of ends according to their proximity to the proportionate natural, and ultimate supernatural, end—is a metaphysical, cosmological, and anthropological premise before, and as a condition of being, an ethical premise. First, no efficient cause can exist apart from teleological finality. As St. Thomas Aquinas reminds us in the *Summa contra Gentiles* (III, c. 2), were operations not teleologically ordered, they would either never begin—because there would be nothing for the sake of which they would be acting—or else, if *per impossibile* they could begin to act without any end, then their action would never cease, because there would be no end capable of completing, fulfilling, or terminating such an action. Further, no action as such can even be understood without some minimal understanding of the end toward which and for the sake of which it moves. If one asks what snow shoveling is, the answer is “moving snow with a shovel-like implement” or something to that effect. Even quantum physics identifies the differing probabilities for electron position in terms of the differing final positions themselves (within a certain time frame)—something that even the radical Copenhagen school cannot avoid. Efficiency is *defined by telos*, defined by the end. Agency or efficiency can neither *be*, nor *be known*, apart from reference to the end in relation to which it is constituted. As Aristotle reminds us, an ordered series of efficient causes implies an ordered series of final causes or ends, rising to the Final End, which is demonstrably identical with the First Efficient Cause, namely, God. *An ordered series of efficient and final causes comprises, not a multiverse but a cosmos: an ordered whole.*⁵ The purely speculative necessity of teleology is ineluctable.

Some have supposed that evolutionary theory proves decisively that there is no such unified natural teleology. Yet all that such theory achieves is the affirmation of teleology extending even to the consti-

⁵ Of course God could cause some such physical system without ordering it to us: and, were this so, it would exist and we would not know of it. But then, too, it would be linked to us indirectly, by virtue of being linked to the First Cause of all finite being, which is alike our First Cause. If deriving from the same ultimate cause places effects in a proportionate analogical unity, then by definition all possible universes participate one divine order.

tution of the genetic order.⁶ The seeming absence of teleology from the vast expanse of inert physical creation is an illusion that can be maintained only by the twofold loss of (1) the perception of hierarchy, which makes clear the ordering of the lowest common denominator of the physical to the biological and spiritual, and finally to God; and, what is closely related to the first, (2) the causal subjection of subordinate to superordinate realities.

2. These judgments point to the second of the three principles I wish to address: namely, the primacy of the speculative with respect to the practical. The realm of practical reason is the realm of reasoning with respect to doing and making. But such reasoning presupposes the prior existence of appetite for something that is served by doing or making. However, appetite—the motion of the will toward some end—itself requires prior knowledge. Without prior intellectual specification, without some degree of knowledge, there is no inclinational motion, the will is not moved. But as prior knowledge precedes the motion of the will, it precedes appetite; and inasmuch as appetite precedes practical reasoning, such knowledge is prior to practical knowledge as such. Because practical reasoning presupposes the prior inclination of the will toward some end, the knowledge required for this inclination to occur stands as a presupposed principle to the entire practical order. As St. Thomas puts the matter in *Summa theologiae* I–II, q. 19, a. 3, ad 2. (Leonine ed.): “Now in regard to the means, the rectitude of the reason depends on its conformity with the desire of a due end: nevertheless the very desire of the due end presupposes on the part of reason a right apprehension of the end.”⁷ *Accordingly, the speculative is absolutely prior to the practical, and*

⁶ If one alters the genes that control the eyes of the fly, one gets flies with no eyes, or many eyes, or flies with funky eyes; if one alters the genes that control the wings, one gets flies with many wings, or no wings, or wings connected to the head. But if at the genetic level there were no order of agency to telos or end—if it were truly random—then one might alter the part of the genotype that concerns the wings of the fly, and get, say, Barbara Streisand, or a toilet seat, or Mark Twain’s Huckleberry Finn. In fact, genetic biology vindicates teleology. Granted that random events—understood as events wherein causes interact in a novel way that we cannot initially predict—occur, everything about such events is teleologically intelligible in terms of the composite of operative accidental causes.

⁷ St. Thomas Aquinas, *ST* I–II, q. 19, a. 3, ad 2. (Leonine ed.): “Now in regard to the means, the rectitude of the reason depends on its conformity with the desire of a due end: nevertheless the very desire of the due end presupposes on the part of reason a right apprehension of the end.”—“In his autem quae sunt ad finem, rectitudo rationis consistit in conformitate ad appetitum finis debiti. Sed tamen

*every practical reasoning includes what one might call a speculum: a purely speculative knowledge constituting the intellective contact with real or possible being lying at the source of the ignition of appetite and designating the character of the end.*⁸ *The speculative knowledge of the order of the cosmos is critical in the development of our appreciation of the lower creation.*

3. Third and finally, there is a decisive principle for the present consideration, best articulated in the work of St. Thomas Aquinas, and given masterful exposition by the late Charles de Koninck:⁹ namely, the principle of the transcendence of the common good. We are familiar with purely technical and instrumental conceptions of the common good—the view that the common good is merely a collection of private goods or is constituted by what is good for the greater number of individuals. Such instrumentalist conceptions have their uses. But they cannot substitute for a realist metaphysical account: the speculative intelligence discovers the common good to be substantive rather than purely instrumental. The common good is an end that is *by its very nature* more communicable to many, more irradiantly diffusive in

et ipse appetitus finis debiti praesupponit rectam apprehensionem de fine, quae est per rationem.”

⁸ ST I, q. 79, a. 11, resp.: “Now, to a thing apprehended by the intellect, it is accidental whether it be directed to operation or not, and according to this the speculative and practical intellects differ. For it is the speculative intellect which directs what it apprehends, not to operation, but solely to the consideration of truth; while the practical intellect is that which directs what it apprehends to operation.” —“Accidit autem alicui apprehenso per intellectum, quod ordinetur ad opus, vel non ordinetur. Secundum hoc autem differunt intellectus speculativus et practicus. Nam intellectus speculativus est, qui quod apprehendit, non ordinat ad opus, sed ad solam veritatis considerationem: practicus vero intellectus dicitur, qui hoc quod apprehendit, ordinat ad opus.”

Ibid., q. 79, a. 11, ad 2: “The object of the practical intellect is good directed to operation, and under the aspect of truth. For the practical intellect knows truth, just as the speculative, but it directs the known truth to operation.” —“ita obiectum intellectus practici est bonum ordinabile ad opus, sub ratione veri. Intellectus enim practicus veritatem cognoscit sicut speculativus; sed veritatem cognitam ordinat ad opus.”

ST I–II, q. 9, a. 1: “Now the first formal principle is universal ‘being’ and ‘truth,’ which is the object of the intellect. And therefore by this kind of motion the intellect moves the will, as presenting its object to it.” —“Primum autem principium formale est ens et verum universale, quod est obiectum intellectus. Et ideo isto modo motionis intellectus movet voluntatem, sicut praesentans ei obiectum suum.”

⁹ Cf. his essays “The Primacy of the Common Good” and “Against the Personalists,” in *The Writings of Charles De Koninck*, vol. 2, trans. and ed. Ralph McInerny (Notre Dame, IN: Notre Dame University Press: 2009).

intelligible good, more universal and rational. Thus, truth, mercy, justice are all by their nature *common* and not merely individual goods.

An individual or private good is such that if one has it, another does not—if I eat my lunch, you do not—unless, perchance, you should happen to eat me. Whereas, truth is not in the least diminished by the number of those who know it, and in fact each person's attainment of a truth is enriched by its possession by others, inasmuch as one may see more deeply into it than another and so augment its appreciation. Likewise, if I do justice in one case, I am not obliged to do injustice in another, as though justice were a scarce material object whose supply were running out. The judge never rightly says: "We ran out of justice two hours ago: would you rather be lynched or shot?"

The common good, while it is good for man—and it is principally that in which man's good consists—is not man's *individual* or *private* good. It is good *for me*, but it is not *mine*. Those who bled the beach crimson at Normandy in World War II, did so on behalf of a good that was good for them—the good of justice—but which was not simply identical with their private good. The common good of society participates the right order of the cosmos toward God in nature and grace—this is why Bl. John Paul II always spoke of the need for the political state to do justice to "the whole truth" of man. The common good of society is constituted by all that defines its actual ordering toward truth, justice, mercy, friendship, the natural contemplative good, and the supernatural love of God. As such, the common good of society is a noble end of striving that does not reduce merely to private good or something reductively instrumental toward private good, and it is an end worthy of service and sacrifice.¹⁰ Howsoever much it remains true that the common good is good for the individual, it is not merely an individual or private good. Truth is good for the individual, but the individual does not *own* it.

In the classical analysis, there is an order of such common goods, rising to the indwelling good of order constitutive of the cosmos; and further, rising to the extrinsic common good of the cosmos itself: namely, God. The ultimate end of man—the beatific vision—is

¹⁰ ST II–II, q. 58, a. 7, ad 2: "The common good of the realm and the particular good of the individual differ not only in respect of the *many* and the *few*, but also under a formal aspect. For the aspect of the *common* good differs from the aspect of the *individual* good, even as the aspect of *whole* differs from that of *part*. Wherefore the Philosopher says (*Polit.* I. 1) that *they are wrong who maintain that the state and the home and the like differ only as many and few and not specifically*."

constituted by the most absolutely self-diffusive and communicable reality: the Triune God Himself. But the indwelling common good of the cosmos is participated by the lower creation.

I have insisted upon these three points—unified normative teleology, the priority of the speculative, and the transcendence of the common good—for the following reason: *Speculative knowledge of the teleological ordering constitutive of the indwelling common good of the cosmos is essential to the question of stewardship.* Doubtless the consideration of these principles may appear to divagate from our object. But without these, our discourse cannot proceed on a firm basis. And it would be utopian to expect conversation about the nature of man's stewardship over the lower creation to be able to proceed lacking well-founded wisdom regarding the saturation of agency in teleological order, the primacy of the speculative in giving principles to our ethical contemplation, and the transcendence of the common good; or to think it even possible fruitfully to proceed on foundations other than realist metaphysics, or sufficiently to address the question of order in the cosmos in abstraction from the theistic conclusions to which realist causal analysis leads. Now I must attempt to apply these principles correctly to the question at hand. The first step we must take is to consider man's relation to the lower creation, to the cosmos as a whole, and to God.

Man's Relation to the Lower Creation, to the Cosmos as a Whole, and to God

In asking about man's relation to the lower creation, we have already assessed the reality of a fixed ontological distance separating minerals, plants, and nonrational animals from man. Man's spiritual nature is the lowest foundational constituent of the *imago Dei* in man, a purely natural likeness to God owing to the immateriality of intellect and will. Even on the plane of the proximate natural order, intellect and will open man to the universe of being, true, and good.

This fixed difference between man and the lower creation does *not*, however, make of man's private good a good superior to the common good of the universe, because the entire universe, and not merely its highest part, is ordered to God. Everything in reality is ordered to God, because the actuality of each and every thing is that in it whereby it is most likened to God, and the consummate actuation of each creature in attaining the proportionate natural end to which it is ordered is a specific imitation of God. Thus, even in precision from supernatural beatitude, man is naturally ordained to God in a very specific way, through intellect and will.

But with respect to natural good—and in precision from the infinitely disproportionate supernatural good—the good of the higher together with the lower is greater than the good of the higher alone. Man forms part of the cosmos, a creature individually important because the soul is a spiritual principle ordered to endure beyond the confines of the physical world, lesser in natural perfection than the multitudinous species of angels, while nobler than nonrational animals, plants, and minerals. As has already been intimated with respect to intellectual objectivity, man's nobility is in part constituted by the truth that it belongs to human nature to have, not merely an "environment" but a "world"; and this "world" is—owing to the very nature of things—not reducible merely to the lower part of creation. Man is a creature who conceives the immanent ordering of the cosmos—inclusive of the invisible or spiritual aspects of the cosmos—as flowing from, and ordered toward, the First Cause. Man is not *merely* a "part" of the physical order, although he is a part of this order; but he is a part of the cosmos—part of an ordered whole that comprises the procession of all creatures from God, and their return to God. And the lower creation participates the indwelling common good of right order of the cosmos.

Cosmic Order and the Good for Man

This brings us specifically to the question of the relation between the order of the cosmos and the good for man. It has already been affirmed that the good for man consists chiefly in the hierarchy of common goods, extending to the indwelling common good of the right order of the universe, and extending further to the extrinsic common good of the universe, namely God. Because man is created in grace, from the moment of his creation man is further ordered in and by grace to the friendship of God and to intrinsically supernatural beatitude. What is the role of the lower creation in all this? Is the lower creation merely an object of use for man?

Certainly there is what one might call a "trumping right" of the good of a *person* over the subordinated good of any particular lower physical being or nature. If it comes to the life and well-being of a child versus the life and well-being of a deer—or even the life and well-being of a lower species—then, since the soul of the child is ordained to outlive all merely terrestrial physical species whatsoever and is possessed of rational dignity, one should have no hesitancy whatsoever in preferring the life of a child. Nonetheless, the good of the order of the cosmos is a common good, as all things have their proper natural good in accordance with it—from the diverse species of angels, to man, to the lower creation. Man is

called to know, and to honor, this order. But what can it mean to honor this order as found within that lower creation that man is in fact called to *use*, to *subject to human activity*, in multi-form ways?

Surely subjecting the lower creation to the service of reason and of God constitutes part of honoring the lower order of creation, which is dignified in being brought to a higher and more attuned service of God and man. But it is not alone in our activity directing lower nature to the human good that we honor the divinely inscribed order of the cosmos in the lower creation. Before ever we turn to doing and making, there is natural inclination; and before there is natural inclination, there is knowledge. The chief element in our honoring of the lower creation, then, will consist in our contemplation of this order as manifestative of the order of the cosmos as such—as bearing the trace and imprimatur of the divine wisdom—and so as manifesting the First Cause of all things—and finally even the vestigial trace of the Trinity.

It is largely from the knowledge of the lower creation that our knowledge of the full reaches of the cosmos, and of the existence of God, derives. We move from what is less intelligible in itself, and more intelligible to us, to what is more intelligible in itself, but less intelligible to us: that is, we move from the multifarious world of nature in all its variety, to the judgment that there is a unitary First Cause, whose perfection lacks any limit of potency, namely, God. Hence Romans 1:20: “For the invisible things of him, from the creation of the world, are clearly seen, being understood by the things that are made; his eternal power also, and divinity: so that they are inexcusable.”

It is not simply that the whole edifice of natural science, and philosophy of nature, and even metaphysics, presuppose first the humble beginning of our contemplative contact with the physical universe in sensation and abstraction. It is that the order defining this lower universe is thus constituted as a primitive and primordial good for man as such, body and soul, who relies upon its physical solidity and whose intelligence is fed by it. Hence, granted also that the application of the positive sciences in productive arts designed to serve the larger good of man is both valid and founded upon a certain measure of speculative conformity with the order of lower nature, that measure of speculative conformity with the order of lower nature necessary to the productive arts does not exhaust the being, true, and good even of lower nature.

This is an important judgment. For God is in some way reflected in anything that is, and so there is a sense in which what man makes of nature and offers to God is also theophanic. Given the obvious worth and dignity of the transformative aspect of technology, and of the subjection

of the lower creation to the service of man, one can imagine someone thinking that the natural purpose of the lower creation is nothing other than its transformation into the perfect quasi-technical cocoon for the germination of human culture. But what is missing from this conception is precisely the extra-utilitarian dimension of the lower creation as manifesting the divine order of the cosmos, and of sensible nature as constituting the birthplace of human intelligence with respect to the wider horizons of being and nature.

It might be objected that human transformations of nature exhibit more rather than less worth because they doubly derive from nature—first from subrational nature and then from the rational nature. If we accept this approach to the matter as presenting the entire picture, then even the ineradicable dependence of applied science, technology, and the productive arts upon the prior ordering of nature will be conceived merely as the dependence of the chalk upon the blackboard, because then nature stands to technology as potency to act. In fact, clearly there is a limited sense in which this is true. What then stands to limit this truth and to place it in confrontation with something of a different order? That is to say, what is there, in principle, to constitute a limit to the use of transformative technology with respect to the lower creation? How can the subrational creation avoid the fate of being endlessly remade at the whimsy of man?

The answer here is that the divine ordering of the cosmos as such extends into the lower order of creation and is manifest there according to the natures of the things God has made: the lower creation participates the common good of the cosmos. It would be saying too much, to say that what is best or optimal for subrational nature is always a desideratum, because the lower creation is for the sake of the higher creation, and because man's harm or death is not an acceptable price to pay for some essentially lower good.¹¹

Nonetheless, *all things being equal*, there is a permanent natural desideratum for respecting and preserving the general order of lower nature, not alone because it serves some human utility of medicine or production or technology, but for the following reasons. First, the lower creation is the evidentiary home of our intellectual life and contemplation, the realm in which our natures and our narratives have been tried and refined. There is nothing in the intellect that is not first in the senses, and the connatural

¹¹ Further, it is a sinful world, a world in which evil, both physical and more importantly moral, infects the orchestration of the providential symphony. In a world that is affected in this way by evil, although the perfect is not the enemy of the good, it may nonetheless be impossible prudently and with integrity simply to pursue the perfect "as the crow flies" (to use Michael Oakeshott's phrase).

mode of our cognition in this life is through abstracting from, and advert-ing to, sensible phantasms. We are ordered to the knowledge of sensible quiddities, and the variety and diffusiveness of the lower creation condition our intellectual, imaginative, and aesthetic life. Second, in its mystery and variety the lower creation represents an essential and primary constituent of the primordial revelation of God in creation, providing the foundation for our awareness of the essential analogicity of being and nature, and for our ascent to God; third, the lower creation participates the indwelling common good of the order of the cosmos, a common good which includes the ordering of angel and man as much as it does that of animal, plant, and mineral.

These interrelated propositions say much the same thing. That the lower creation, even prior to our placing it at the service of human concerns through technology, forms the aboriginal context and the source for our intellectual life, providing us the native images and language of our senses and the poetry of space and time; that the lower creation ineradicably constitutes an essential aspect of the primordial revelation occurring from the moment of creation, pointing to the extrinsic common good Who is God; and that the lower creation participates the indwelling common good of the order of the cosmos—all these insights point in the same direction. It is from the purely speculative contemplation of the lower creation that the understanding of the causal arguments for the existence of God are developed, and these highlight and articulate primordial revelation, framing the lower realm of nature whence our speculations have begun as the effect and gift of God. And the immanent common good of the universe is defined as a good of right order, and so is chiefly a *causal* affair—and of course our knowledge of the causal order of things begins with our knowledge of causes in the lower creation. Without *contactus* with sensible being, our ascent to loftier knowledge is impossible, because there is nothing in the intellect that is not first in the senses, a doctrine of Aristotle and Aquinas that is defensible today just as when first it was uttered. Our knowledge is abstractive, and it presupposes sense knowledge without which we have nothing from which to abstract—the root of the agony of intellectual creatures when they suffer illnesses of the nervous system such as Alzheimer's that cut the dense *contactus* of man with sensitive memory or the sensible world and leave man a cognitive orphan.

Does this mean that it is an act of impiety to God, and to the cosmos, to permit a single species to go extinct? That man's practical reason is in material servitude to an over-lush vegetation of lower nature that chains man's life to the miasmal swamps of pre-human cosmic history? It would mean this, were we to infer from it any absolute or normative require-

ment always to regard the integrity of every particular lower nature as essential for the human good as such. But it is not merely of some lower nature that we are speaking, but of the whole order of the lower creation as such.

The question is, not whether we are bound to undertake heroic exertions to save every threatened species, but whether the whole nexus of such species does not invite from the cultivated human mind a distinctive regard. Yet what can it mean to have a global predilection for a certain realm of unsuppressed and unneutered created natures, while also generally approving the application of science to technology and the productive arts? How does one generally approve pristine, untampered-with-nature, while simultaneously approving the general tendency toward technological tampering with nature? Is this not a contradiction in the making? On what principled basis will the seemingly necessary material boundary judgment be made delineating the acceptable transformative application of natural science for the sake of technological betterment, from applications which are not acceptable?

The False Alternative of the Boundary Hypothesis

The question which has just been raised arguably involves a false hypothesis: namely, the hypothesis that the realm of lower creation in its splendor is differentiated from the realm of human agency and transformation by a clear but mobile boundary, and moreover such a boundary as to imply a constant shrinkage for the scope of undiluted nature as opposed to the growing chrysalis of human technology and technologically transformed nature. But the second always presupposes and depends upon the first—the laws and ontological density of the first are absolutely required for the second. Thus, the boundary in question is not an absolute boundary between two antithetic kingdoms, but rather a boundary of a prudential type, regarding the precise degree to which a constitutive element of technologically untransformed nature—as a native constituent of the spiritual, scientific, and aesthetic good of man—ought be preserved. Granted that something of intrinsic worth for man is bound up with preserving enclaves of nature which preserve in their integrity multifarious living things, and the ecologies that support them, there remains the necessary prudential question of degree, precisely because the lower creation is ordered to the service of the higher. Accordingly, no subhuman nature can simply of itself demand the homage of human sacrifice. I have argued here that the human realm implies a consubstantial ordering to and with the cosmos, which includes the ordering of the lower creation that is so vital to our contemplative, affective, and physical lives.

It is crucial to see that the same ordering that thus warrants regard for lower nature, also warrants that the hierarchic ordering of the lower to the higher be honored.

But does this doom mankind to a Cartesian existence—one part technically driven and transformed, the other primitive but remote, and preserved but yet in its preserved state largely, for millions of people, thus *inaccessible*? No. Because even within the zone of application of science and technology, the human mind is not wholly encased within *techné* but encounters nature and reasons for respecting natural limits.¹²

While in a certain limited respect the natures of things in the lower creation appear before technology as matter yet to be formed, in the wider economy of human life—which is absolutely presupposed to technology—this nature now and always will constitute not merely matter to be formed but rather an already formed preamble to human engagement upon which that engagement cannot but depend. And the presence of an order not of human devising is most powerfully manifest in the lower creation, however much it is true that this order extends even within technological products themselves. Rather than constituting two kingdoms—the kingdom of the Cartesian *Cogito* reducing the lower creation to the status of manipulable object, and the kingdom of subhuman nature—in fact the drama of human stewardship is played out along a necessary continuum in which prudential regard for natural order is circumstantially inflected in many different ways.

Since the order of the cosmos permeates the physical creation, it is literally impossible to escape it—whereas sadly by stark contrast it is possible to fail to appreciate or honor this order in the physical creation. It is perhaps principally with respect to this consideration that we may see that man honors the physical creation most profoundly in the sacred liturgy, because it is in the sacred liturgy that the whole universe is offered in prayer in the Holy Spirit, through Christ, to God the Father. The preservation of enclaves of technologically unaffected wildlife is, by comparison, a lesser appreciation and honoring of the physical world, which is sacramentalized by the Incarnation, through and through.

Nonetheless a lower but genuine mode of this sacramentalization is served in preserving enclaves of the lower creation outside human techno-

¹² It is one thing to enhance certain natural beings through human technology, and another to completely transform a species without remainder. To enhance a nature in certain limited ways for particular human purposes—say, through genetic alterations to make grain more survivable vis-à-vis common pests—is not, itself, an act of impiety. But this does not mean that a commonplace regard for the general natures of things vanishes. What is involved is a certain regard for the primitive constitution of things, which by their natures can evoke for man the wider ordering of the cosmos.

logical space, for by doing so man acknowledges that in creating lower natures, God has created *subjects of being* and not mere *objects for technical reconstruction*. Although these subjects of being are ordered to the common good of the universe, and not least ordered through supporting the existence of the rational animal, their primitive signification to the contemplative intelligence is of even greater value to man than is their vast utilitarian aid vis-à-vis the transformative arts. For that primitive signification of non-technized nature places man in contact with a wide, variegated, teleological multiplex, whose character is not of itself the effect of any human choice, and which manifests most concretely and awesomely the theonomic character of nature, the mysterious analogicity of being, and the transcendent excellence of its divine principle. Just as there is an order of human ends that is of ethical significance prior to choice, so there is an intra-cosmic common good whose integral nature is but dimly comprehended, but yet which is not only a source of many potential technological benefits but far more importantly an evidentiary source with respect to the contemplation of being and God. The contemplative life of man is irreparably in debt to this lower order, precisely as participating the common good of the whole cosmos as such, material and immaterial. Further, to the degree that the lower creation is subjected prudently to transformative technology, there are questions of fittingness even regarding the proper and fitting manner for such subjection to occur (for example, at the most obvious: some technologies achieve a necessary end with more environmental destruction than is either necessary or desirable). Yet the prudential legal objective is not to so hamper human technical development that it is stifled underneath a dead mass of particular limitations, but rather to safeguard certain permanent goods by reasonable generic limitations. To preserve areas for wildlife should never be tantamount to subordinating or sacrificing human life to the aim of protecting subrational creatures.

Many virtues have been hidden by divine providence in the earth, and man's discovery of nature is not merely the Baconian enterprise of "putting nature on the rack" to wrest her secrets from her for the benefit of mankind. To the contrary, nature gives her secrets most readily, not to those who put her on the rack, but to those who read her intelligible ordering closely and well, which cannot be done simply by subjecting nature to instrumental reason.

Conclusion: On the Role of Prudence

I would like to conclude by noting that discerning the implications of all these truths for the workaday world requires *prudence* (and hence all the other virtues)—because, however valuable is contemplation, and however

necessary it is to honor God's script in nature, the lower creation is *for the sake* of the nobler creation, not only with respect to contemplation, but also with respect to use. Hence when and insofar as the limits of the lower creation become, not only invitations to contemplation, but occasions for harm or death or even for the impeding of life-saving or life-enhancing agency, *just so far* does man's reason insist upon transformative operations within and upon the lower creation. And these discernments, being discernments of prudence, do not and cannot follow mathematical formulae or purely axiomatic protocols.

The rational nature does not act under mere rote instruction from the lower creation, but gazes upon it, seeks its principles and causes, and takes instruction and refreshment from it in the course of living out its trajectory, which is an inherently *rational* one that is as distinct from the course of lower nature as the salt in the ocean is from mere H₂O. Indeed, it is because the lower nature shares in the common good of the order indwelling the cosmos as such that from the lower creation the rational animal perceives the normativity of this cosmic ordering, and—following the *telos* connatural to the rational soul—honors it. But this honor paid to the inherent order of the cosmos as participated by lower nature is not a replacement for the rational nature's own teleology but rather an essential instruction and aid for it, for we are not mere physical natures, and nature is an essentially *analogical* principle that rises beyond the lower creation.

Thus lower terrestrial nature should be neither opposed to technical development nor disdained as mere matter before technical form, but should be regarded, precisely in its participation of cosmic and divine order, as a good to be preserved. Such preservation will to some degree occur in enclaves apart from technical civilization, where by reason of its beauty, its variety, and its manifestation of an order which is not merely that imposed by *techne* and which stands in analogical relation to all the other goods of human nature, it is kept pristine. But the virtualities of nature are preserved in a different manner when they are to some degree transformed by human ingenuity in the service of human life and elevated to a greater analogical participation of the good of human nature. Those who are called to make the prudential decisions about the particulars of these decisions will do so better to the degree to which their minds and imaginations enable them to perceive both cosmological and metaphysical order, and formal and teleological hierarchy. In short: those who are wise—and not merely those who enjoy the reasonable physical utilities afforded by the lower creation—are those best equipped to undertake a reasonable stewardship and dominion over the lower creation that gives glory to God and solace to man. And the truth defin-

ing this stewardship is that the same ordering that warrants regard for lower nature, also warrants that the hierarchic ordering of the lower to the higher be honored. That which principally accounts for the dignity of the lower creation—its participation of the indwelling common good of the universe—is also that which determines the hierarchic subordination of the lower creation to the good of man, because lower goods are for the sake of nobler goods. Beyond even its practical contribution to human betterment, however, the importance of the lower creation for our contemplative lives in relation to the order of the universe as such ought not be forgotten. The lower creation is the womb of science, the home of poetry and beauty, and the primal evidentiary foundation for the causal ascent of human reasoning to God. **N V**