AQUINAS ON CREATION AND THE METAPHYSICAL FOUNDATIONS OF SCIENCE

In John Milton's *Paradise Lost*, God sends the angel Raphael to Adam and Eve in the Garden of Eden to inform them of Satan's rebellion and of the fallen angel's consequent plan to seduce the happy couple. Raphael's story of the fall of Satan and the creation of the world is part of God's purpose to make sure that the first human beings are «sufficient to stand», although «free to fall». Indeed, the defense of freedom, divine and creaturely, is at the heart of Milton's great epic. Unlike those who deny human freedom in order to protect divine omni-potence, Milton seeks to affirm man's freedom in a world created by God. In fact, Raphael's description of the Father's speaking to the Son about the creation of the world reveals a theme which continues to be attractive in some theological and philosophical circles:

> «And thou, my Word, begotten Son, by thee
> This I perform, speak thou, and be it done:
> My overshadowing Spirit and might with thee
> I send along, ride forth, and bid the Deep
> Within the appointed bounds be Heav'n and Earth,
> Boundless the Deep, because I am who fill
> Infinitude, nor vacuous the space
> Though I uncircumscrib'd myself retire,
> And put forth not my goodness, which is free
> To act or not, Necessity and Chance
> Approach not mee, and what I will is Fate»[1].

Here we have creation depicted as a kind of voluntary withdrawal on God's part. Although «uncircumscrib'd», God chooses to «retire», not to put forth his goodness. God somehow must make room for the existence of creatures; he must furthermore make room for the existence of creatures who function as true causes in the world: not only the causality which inanimate beings exercise, but the causality of human agency as well. The account of creation in *Paradise Lost* is part of the overarching purpose of the poem, which is, as Milton writes in the beginning, «to assert Eternal Providence and justify the ways of God to men».

Understanding the «ways of God» is no easy task. Beginning in the early 1990s, the Vatican Observatory and the Center for Theology and the Natural Sciences in

---

[1] Book VII: 163-173.

Berkeley, California, have been sponsoring a series of conferences on what they call «scientific perspectives on divine action». These conferences have already resulted in the publication of two impressive volumes: *Quantum Cosmology and the Laws of Nature* (1993) and *Chaos and Complexity* (1995). Future conferences are planned on evolutionary and molecular biology, neurobiology and brain research, and quantum physics and quantum field theory. The systematic reflection on the relationship between contemporary science and theology represented in the contributions to these conferences reveals the seriousness with which many contemporary scholars consider the task of using reason in the service of faith. Although a few contributors argue that some form of a Thomistic understanding of primary and secondary causality provides the most fruitful way to account for God's action in the world, most of the scholars attending these conferences embrace process thought in one of its many manifestations.

There is a striking similarity between Milton's account of creation as divine withdrawal and the arguments of many contemporary theologians and scientists. One of the leading proponents of creation's being preceded by some form of divine withdrawal is the German theologian Jürgen Moltmann, who writes:

> «It is only a withdrawal by God into himself that can free the space into which God can act creatively. The *nihil* for *creatio ex nihilo* only comes into being because —and in as far as— the omnipotent and omnipresent God withdraws his presence and restricts his power [...] The Creator is not the "unmoved mover" of the universe. On the contrary, creation is preceded by this self-movement on God's part, a movement which allows creation the space for its own being. God withdraws into himself in order to go out of himself. He "creates" the preconditions for the existence of his creation by withdrawing his presence and his power»[2].

---

[2] J. MOLTMANN, *God in Creation* (New York: Harper and Row, 1985), pp. 86-87. Moltmann traces the origin of this concept of divine withdrawal to the ancient Jewish doctrine of Shekinah, according to which the infinite God can so contract His presence that He dwells in the temple. In the seventeenth century Isaac Luria applied this notion to creation. Lurianic kabbalah claims that «the first act of *Ein-Sof* was not one of revelation and emanation, but, on the contrary, was one of concealment and limitation [...] The starting point of this theory is the idea that the very essence of *Ein-Sof* leaves no space whatsoever for creation, for it is impossible to imagine an area which is not already God, since this would constitute a limitation of His infinity [...] Consequently, an act of creation is possible only through "the entry of God into Himself", that is, through an act of *zimzum* whereby He contracts Himself and so makes it possible for something which is not *Ein-Sof* to exist. Some part of the Godhead, therefore, retreats and leaves room, so to speak, for the creative processes to come into play. Such a retreat must precede any emanation». In kabbalistic contraction the place from which God retreats is merely a point in comparison with His infinity, «but it comprises from our point of view all levels of existence, both spiritual and corporeal (*Encyclopedia Judaica*, [Jerusalem: Keter Publishing Company, 1972], vol. 10, pp. 589-590).

G. Scholem describes Lurianic kabbalah in this way: «In the self-limitation of the divine Being which, instead of acting outwardly in its initial act, turns inward towards itself, Nothingness emerges. Here we have an act in which Nothingness is called forth» (G. SCHOLEM, «Schöpfung aus Nichts und Selbstverschränkung Gottes»: *Eranos Jahrbuch* 25 [1956] pp. 87-199, at p. 118). See also David NOAK, «Self-Contraction of the Godhead in Kabbalistic Theology», in *Neoplatonism and Jewish Thought*, edited by Lenn E. Goodman (Albany: State University of New York Press, 1992), pp. 299-318. For a recent discussion of Moltmann's analysis of creation, see Alan J. TORRANCE, «*Creatio ex nihilo* and the Spatio-Temporal Dimensions, with Special Reference to Jürgen Moltmann and D. C. Williams», in *The Doctrine of Creation*, edited by Colin E. Gunton (Edinburgh: T. & T. Clark, 1997), pp. 83-103.

The concern is to locate a kind of metaphysical space which can allow for divine agency in the world: a correlative to the need for a similar metaphysical space which allows for the causal agency of creatures. Thus, for example, the fascination with quantum mechanics and chaos theory, since each is viewed as providing the needed metaphysical indeterminacy to provide an arena in which God can act. So long as the universe was seen as a «causally closed» mechanism operating according to the prescriptions of Newtonian mechanics, there seemed to be little room for «God's special action in specific events»[3]. It was Pierre-Simon Laplace who argued that, if one started with precise knowledge of the present state of the universe and of all the forces operating within it, then one could predict the future with certainty. As Laplace put it: with such knowledge «nothing would be uncertain and the future, as the past, would be present to [our]... eyes»[4]. One of the consequences of such an interpretation of classical mechanics —regardless of its historical accuracy— was the development of deism, according to which God's action is restricted to some initial act of creation[5]. For some who accepted the deterministic interpretation of classical mechanics, God's action in the world was limited to filling in the gaps for which science could not account. A «god-of-the-gaps», however, could easily become a disappearing god, since as the natural sciences advance gaps are closed.

In the face of a large literature on divine action in the world[6], I should like to describe briefly the approach of John Polkinghorne, the British physicist and Anglican priest. Polkinghorne has argued extensively that recent chaos theory has opened up new possibilities for understanding divine agency. Many large-scale phenomena seem to contemporary scientists to exhibit unpredictability strikingly similar to the unpredictability expressed by the Heisenberg Uncertainty Principle in the realm of the very small. Why is it, scientists ask, that the trajectory of a baseball is so much easier to predict than that of a flying balloon with the air rushing out of it? The balloon lurches and turns erratically at times and places that seem to be

---

[3] Robert John RUSSELL, «Introduction», *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur R. Peacocke (Vatican City: Vatican Observatory Publications, 1995), p. 5.

[4] Pierre-Simon Marquis de LAPLACE, *A Philosophical Essay on Probabilities*, 6th edition, translated by F. W. Truscott and F. K. Emory (New York: Dover, 1961), p. 4.

[5] Even the notion of God's continual causing of the existence of things was thought to be challenged by the principle of inertia. Hans Blumenberg and Wolfhart Pannenberg have argued that the principle of inertia entailed the view that the universe was self-sufficient and required no appeal outside of itself —once it existed— to account for all motion and change. Hans BLUMENBERG, *The Legitimacy of the Modern Age,* translated by Robert Wallace (Cambridge, MA: MIT Press, 1971); Wolfhart PANNENBERG, *Toward a Theology of Nature*, translated by Ted Peters (Louisville, KY: Westminster/John Knox Press, 1993), and *Metaphysics and the Idea of God*, translated by Philip Clayton (Grand Rapids, MI: W. B. Eerdmans, 1990).

[6] See the essay by Russell noted above for an excellent survey. See also: Philip CLAYTON, *God and Contemporary Science* (Edinburgh: Edinburgh University Press, 1997); Owen C. THOMAS (ed.), *God's Activity in the World: The Contemporary Problem* (Chico, California: Scholars Press, 1983); and Owen C. THOMAS, «Recent Thought on Divine Agency», in *Divine Action*, edited by Brian Hebblethwaite and Edward Henderson (Edinburgh: T. and T. Clark, 1990), pp. 35-50. Thomas thinks that there are only two adequate approaches to the question: either process theology or the Thomistic understanding of primary and secondary causality.

impossible to predict. «The balloon obeys Newton's laws just as much as the baseball does; then why is its behavior so much harder to predict than that of the ball»[7]? Uncertainties in our knowledge of the motion of the balloon quickly overwhelm our ability to account for its motion with precision. The recognition of such uncertainties is the foundation of chaos theory[8].

The world described by classical dynamics was for many easily compared to a clock in which the regular patterns of behavior could be understood and were, accordingly, quite predictable. Chaos theory argues that most of the physical world is not like a clock: to use Karl Popper's famous phrase, there are more clouds than clocks in the world. The great complexity evident in the various systems that constitute the world —on all levels, from the very small to the very large— are so sensitive to circumstance that they are intrinsically unpredictable. Polkinghorne

---

[7] James P. CRUTCHFIELD, J. Doyne FARMER, Norman H. PACKARD, and Robert S. SHAW, «Chaos», in *Chaos and Complexity: Scientific Perspectives on Divine Action, op. cit.*, p. 36.

[8] Karl YOUNG offers a succinct analysis of chaos theory in «Deterministic Chaos and Quantum Chaology», in *Religion and Science*, edited by W. Mark Richardson and Wesley J. Wildman (New York: Routledge, 1996), pp. 227-242. Chaotic systems, based in classical mechanics, have two principal features: they are deterministic (i.e., the system functions according to rigid, deterministic laws, so that any state of the system is traceable to precise initial conditions), and they are nonlinear (the sum of two states of the system at times t_1 and t_2 is not generally the state of the system at time t_1 and t_2). Young thinks that chaos theory represents essentially an epistemological claim. Consider an old hollow log with a stream of water flowing in at one end yet leaving the other end was not a steady trickle, but drops of various sizes. «The log had performed a nonlinear transformation of the input just like a non-linear equation acting on numerical input [...] That the additivity of causes does not lead to the additivity of effects, as in linear systems, allows for evolution from nearly identical states to extremely dissimilar ones» (pp. 232-233). One of the characteristic features of chaos theory is its recognition of SDIC: sensitive dependence on initial conditions. Its most famous example is the «butterfly effect» described by meteorologist Edward Lorenz in his discovery of SDIC in computer simulations of the earth's atmosphere. See Edward LORENZ, *The Essence of Chaos* (Seattle, WA: University of Washington Press, 1993). Lorenz writes that «chaos» refers to processes (such as a rock's tumbling down a mountain side) whose variations are not random but look random (p. 4). For a good account of SDIC and chaos theory see Ian STEWART, *Nature's Numbers* (New York: Basic Books, 1995), especially the chapter «Do Dice Play God?», pp. 107-126.

Here is how Crutchfield, *et al.* put it: «[...] [S]imple deterministic systems with only a few elements can generate random behavior. The randomness is fundamental; gathering more information does not make it go away. Randomness generated in this way has come to be called chaos. A seeming paradox is that chaos is deterministic, generated by fixed rules that do not themselves involve any elements of chance. In principle the future is completely determined by the past, but in practice small uncertainties are amplified, so that even though the behavior is predictable in the short term, it is unpredictable in the long term. There is order in chaos: underlying chaotic behavior there are elegant geometric forms that create randomness in the same way as a card dealer shuffles a deck of cards or a blender mixes cake batter». «In the past few years a growing number of systems have been shown to exhibit randomness due to a simple chaotic attractor. Among them are the convection pattern of fluid heated in a small box, oscillating concentration levels in a stirred-chemical reaction, the beating of chicken-heart cells, and a large number of electrical and mechanical oscillators. In addition computer models of phenomena ranging from epidemics to the electrical activity of a nerve cell to stellar observations have been shown to possess this simple type of randomness. There are even experiments now under way that are searching for chaos in areas as disparate as brain waves and economics» («Chaos», in *Chaos and Complexity: Scientific Perspectives on Divine Action, op. cit.*, p. 35 and p. 46). See also Wesley J. WILDMAN and Robert John RUSSELL, «Chaos: A Mathematical Introduction with Philosophical Reflections», in *Chaos and Complexity..., op. cit.*, especially pp. 49-51.

thinks that term «chaos» is unfortunate because the apparent haphazardness does occur within restricted domains of possibility. «The most obvious thing to say about chaotic systems is that they are intrinsically unpredictable. Their exquisite sensitivity means that we can never know enough to be able to predict with any long-term reliability how they will behave»[9]. Polkinghorne argues that the epistemological limitations which chaos theory presents point to a fundamental feature of the world, what he calls an «ontological openness»:

> «I want to say that the physical world is open in its process, that the future is not just a tautologous spelling-out of what was already implicit in the past, but there is genuine novelty, genuine becoming, in the history of the universe [...] The dead hand of the Laplacean Calculator is relaxed and there is scope for forms of causality other than the energetic transactions of current physical theory. As we shall see there is room for the operation of holistic organizing principles (presently unknown to us, but in principle open to scientific discernment), for human intentionality, and for divine providential interaction. The character of such influence is perhaps best conceived as "active information"[10], the creation of novel forms carried by a flexible material substrate»[11].

Thus chaos theory presents us with the possibility of «a metaphysically attractive option of openness, a causal grid from below which delineates an envelope of possibility (it is not the case that anything can happen but many things can), within which there remains room for manoeuvre»[12].

Given the essential metaphysical indeterminacy of the very large and the very small, we must conclude, Polkinghorne argues, that God does not know the future. Such ignorance is not an imperfection in the divine nature, «for the future is not yet there to be known. Of course God is ready for the future —God will not be caught out but is, in fact, exceptionally well-prepared for it— but even God does not know beforehand what the outcome of a free process or a free action will be»[13].

---

[9] John POLKINGHORNE, «The Laws of Nature and the Laws of Physics», in *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and C. J. Isham (Vatican City: Vatican Observatory Publications, 1993), p. 441.

[10] Here «information» doesn't mean a body of facts, but rather a principle of organization. Polkinghorne is concerned to reject any notion of a «transaction of energy». «It seems to me entirely conceivable that God [...] interacts with the creation through the input of active information into its open physical process. We glimpse, in a rudimentary way, what might lie behind theology's language of God's "guiding" and "drawing on" creation, language often associated with talk of the Spirit working immanently on the "inside" of creation [...] [W]e seem to discover a world that is open to divine agency within it. If the concept of top-down interaction through active information contains within it a glimmer of truth, we do not need to suppose that it exhausts all accounts that might be given of God's activity [the example he has in mind is Christ's resurrection]» («Chaos Theory and Divine Action», in *Religion and Science*, edited by W. Mark Richardson and Wesley J. Wildman [New York: Routledge, 1996], pp. 248 and 251).

[11] John POLKINGHORNE, «The Laws of Nature and the Laws of Physics"», *op. cit.*, pp. 441-442.

[12] «How that manoeuvre is executed will depend upon other organizing principles, active in the situation, viewed holistically. A chaotic system faces a future of labyrinthine possibilities, which it will thread its way through according to the indiscernible effects of infinitesimal triggers, nudging it this way or that [...] [C]haos theory [is] actually an approximation to a more supple reality, these triggers of vanishingly small energy input become non-energetic items of information input ("this way", "that way") as proliferating possibilities are negotiated. The way the envelope of possibility is actually traversed will depend upon *downward causation* by such information input, for whose operation it affords the necessary room for manoeuvre» (*Ibid.*, p. 443).

[13] *Ibid.*, p. 447. Keith WARD offers an extensive analysis and rejection of the traditional view of God's timelessness; see *Religion and Creation* (Oxford: Oxford University Press, 1996), pp. 256-284.

Polkinghorne compares what we might call a limitation on divine omniscience with a corresponding limitation of divine omnipotence in the act of creation.

> «We have become used to the notion that God's act of creation involves a kenosis (emptying) of divine omnipotence, which allows for something other than God to exist, endowed with genuine freedom. I am suggesting that we need to go further and recognize that the act of creating the other in its freedom involves also a kenosis of the divine omniscience. God continues to know all that can be known, possessing what philosophers call a current omniscience, but God does not possess an absolute omniscience, for God allows the future to be truly open. I do not think that this negates the Christian hope of ultimate eschatological fulfillment. God may be held to bring about such determinate purpose even if it is by way of contingent paths»[14].

And more recently, Polkinghorne has written: «The act of creation involves a voluntary limitation, not only of divine power in allowing the other to be, but also of divine knowledge in allowing the future to be open»[15].

The philosophical issues connected to a proper interpretation of quantum mechanics and chaos theory are extraordinarily complex. Robert J. Russell and Wesley J. Wildman[16], for example, have argued persuasively that it is philosophically dangerous to move from the essentially mathematical realm of chaos theory to reach conclusions about metaphysical determinism or indeterminism; nor ought one to equate unpredictability with indeterminism. They note the use made by chaos theory in some theological circles:

> «The development of chaos theory has been welcomed by some theologians as powerful evidence that the universe is metaphysically open (i.e., not completely deterministic) at the macro-level. Metaphysical indeterminacy at the quantum level does not even need to be assumed, on this view, for chaos theory makes room for human freedom and divine acts in history that work wholly within nature's metaphysical openness and do not violate natural laws [...] [Such an interpretation is] without justification [...] since it makes little sense to appeal to chaos theory as positive evidence for metaphysical indeterminism when chaos theory is itself so useful for strengthening the hypothesis of metaphysical determinism: it provides a powerful way for determinists to argue that many kinds of apparent randomness in nature should be subsumed under deterministic covering laws»[17].

---

[14] *Ibid.*, pp. 447-448. On the final point in the quotation see D. BARTHOLOMEW, *God of Chance* (London: SCM Press, 1984).

[15] John POLKINGHORNE, «Chaos Theory and Divine Action», *op. cit.*, p. 250. «An evolutionary universe is to be understood theologically as one that is allowed by God, within certain limits, to make itself by exploring and realizing its own inherent fruitfulness. The gift of creaturely freedom is costly, for it carries with it the precariousness inherent in the self-restriction of divine control» (p. 249).

[16] Wesley J. WILDMAN and Robert John RUSSELL, «Chaos: A Mathematical Introduction with Philosophical Reflections», in *Chaos and Complexity...*, *op. cit.*, pp. 49-90.

[17] *Ibid.*, pp. 84 and 86. They refer to one of the classic examples, radioactive decay: «The average number of alpha particles emitted by a uranium sample is predictable; it decreases exponentially with time. The exact number of alpha decays each second, however, is random. Randomness here always means at least that no known equation determines the exact number, but it sometimes carries the additional suggestions of metaphysical indeterminism. The connection to metaphysics is hazardous, however, because it depends upon choosing between conflicting interpretations of quantum physics – and both deterministic interpretations (such as non-local hidden variables) and indeterministic interpretations are presently defended». They point out that it is important to recognize that «speaking of randomness in mathematics does not by itself presuppose metaphysical indeterminism [...] [W]e are justified in speaking of two metaphysically neutral kinds of randomness (chaotic and strict) defined in terms of two varieties of unpredictability (eventual and total), and correlated with several types of

We might also wonder about the ease with which Polkinghorne moves from claims in epistemology to claims in metaphysics. Various attempts by Polkinghorne, Arthur Peacocke, Nancey Murphy, George Ellis[18], and others to locate a venue for divine agency in the indeterminism of contemporary physics really amount to the claim that any account of the physical world in the natural sciences is somehow inherently incomplete. In other words, these authors must maintain that the natural sciences cannot in principle provide a complete, coherent account of physical reality[19].

My concern here is not with the complex questions of how properly to interpret quantum mechanics or chaos theory. What I should like to focus on is the concern for metaphysical space which informs the arguments of so many contemporary writers on science and theology —and to show how a return to Aquinas' discussion of creation is particularly fruitful— especially his understanding of how God is the complete cause of the whole reality of whatever is and yet in the created world there is a rich array of real secondary causes[20]. God's creative act, for Aquinas, is not an example of divine withdrawal[21] but is, rather, the exercise of divine omnipotence. Furthermore, Aquinas' understanding of creation affirms the integrity and relative autonomy of the physical world and the adequacy of the natural sciences themselves to describe this world.

---

predictability. Chaotic randomness is neither absence of randomness nor strict randomness but a tertium quid. This is one way in which the phenomenon of chaos in mathematics is remarkable. Whereas it might once have been supposed that predictability and unpredictability were directly opposed, chaos theory opens up a nether-world in which this supposedly sharp distinction is blurred to the extent that a particular kind of unpredictability (eventual) occurs in the context of predictability-in-principle and even what we have called temporary-predictability-in-practice. We are thus justified in speaking of a more or less unforeseen albeit weak type of randomness, namely chaotic randomness» (*Ibid.*, p. 76).

[18] See their essays in *Chaos and Complexity...*, *op. cit.*

[19] This is a criticism aptly made by Willem B. DREES in «Gaps for God?», in *Chaos and Complex-ity: Scientific Perspectives on Divine Action*, *op. cit.*, pp. 223-237. That Polkinghorne is particularly susceptible to this criticism can be seen in the following observation he makes in this same volume: «For a chaotic system, its strange attractor represents the envelope of possibility within which its future motion will be contained. The infinitely variable paths of exploration of this strange attractor are not discriminated from each other by differences of energy. They represent different patterns of behavior, different unfoldings of temporal development. In a conventional interpretation of classical chaos theory, these different patterns of possibility are brought about by sensitive responses to infinitesimal disturbances of the system. Our metaphysical proposal replaces these physical nudges by a causal agency operating in the openness represented by the range of possible behaviors contained within the monoenergetic strange attractor. What was previously seen as the limit of predictability now represents a 'gap' within which other forms of causality can be at work» (John POLKINGHORNE, «The Metaphysics of Divine Action», in *Chaos and Complexity...*, pp. 153-154).

[20] I do not intend to discuss here the complex questions concerning different senses of «causality». Too often, those who examine the distinction Aquinas draws between primary and secondary causality, read Aquinas in the light of a Humean understanding of cause. See William A. WALLACE, *Causality and Scientific Explanation*, 2 vols. (Ann Arbor: The University of Michigan Press, 1972), and Joseph DE FINANCE, *Conoscenza dell'essere*, translated by M. Delmirani (Roma: Editrice Pontificia Università Gregoriana, 1993), pp. 332-423.

[21] This is what Polkinghorne calls «a kenosis (or emptying) of divine omnipotence».

Aquinas' discussion of creation occurs in the context of an extensive examination of this subject in mediaeval Islamic and Jewish thought[22]. Averroes, for example, rejected the idea of creation out of nothing in its strict sense. He thought that creation consisted in God's eternally converting potentialities into actually existing things. For Averroes, the doctrine of creation out of nothing contradicted the existence of a true natural causality in the universe. In response to al-Ghazali's defense of creation out of nothing, Averroes wrote:

> «[al-Ghazali's] assertion [in defense of creation out of nothing]... that life can proceed from the lifeless and knowledge from what does not possess knowledge, and that the dignity of the First consists only in its being the principle of the universe, is false. For if life could proceed from the lifeless, then the existent might proceed from the non-existent, and then anything whatever might proceed from anything whatever, and there would be no congruity between causes and effects [...]»[23].

Averroes argues that in a universe without real natural causation, «specific potentialities to act and to be acted upon are reduced to shambles» and causal relations «to mere happen-stance»[24]. Thus, for Averroes, there could be no science of nature if the universe were created out of nothing. In several long commentaries on various treatises of Aristotle, Averroes rejects Avicenna's theory of emanation and argues that God's connection to the universe ought to be understood in terms of final causality[25]. Averroes is critical of what he considers to be Avicenna's confusion of metaphysics and physics, in particular, the introduction of the argument for the prime mover into metaphysics[26]. Also, in defense of real causality in nature, Averroes is troubled by Avicenna's reliance on the immediate action of immaterial agents (separated forms) in the various changes in the physical world.

Also important is the thought of another twelfth century thinker, the Jewish theologian and philosopher, Maimonides (1135-1204)[27]. Along with Averroes,

---

[22] For a fuller discussion of Aquinas' understanding of creation, see William E. CARROLL, «Thomas Aquinas and Big Bang Cosmology»: *Sapientia* 53 (1998), pp. 73-95. Although some of the arguments in the next few paragraphs are taken from this article, they are usefully repeated here.

[23] *Tahafut al-Tahafut*, trans. by Simon Van den Bergh (London: Luzac, 1954), p. 452; also quoted in Barry KOGAN, *Averroes and the Metaphysics of Causation* (Albany, N. Y.: State University of New York Press, 1985) p. 353. Two recent works on Averroes of particular interest are: Roger ARNALDEZ, *Averroès: un rationaliste en Islam* (Paris, Éditions Balland, 1998) and Dominique URVOY, *Averroès. Les ambitions d'un intellectuel musulman* (Paris: Flammarion, 1998).

[24] Quoted in KOGAN, p. 218.

[25] Particularly in his *Long Commentary on Aristotle's «Metaphysics»* (*ca.* 1190); Deborah BLACK, «Averroës», in *Dictionary of Literary Biography*, vol. 115 of *Medieval Philosophers*, edited by Jeremiah Hackett (Detroit: Gale Research, 1882), p. 77.

[26] Roger Arnaldez observes that «unlike Avicenna who strives to deduce, at least theoretically, the physical from the metaphysical, Averroes is essentially a philosopher of nature. In a passage of commentary on Book Λ of the *Metaphysics*, he writes, in express opposition to Avicenna, that unless the metaphysician instantly requested of the physicist that he pass on to him the idea and the reality of movement, he would have no knowledge of it. Physics is therefore fundamental, and metaphysics simply crowns the whole structure of the positive sciences» («L'Histoire de la pensée grecque vue par les Arabes»: *Bulletin de la societé française de philosophie* 72, no. 3 (1978), p. 168).

[27] For a comparison of Avicenna, Maimonides, and Aquinas, see: David BURRELL, *Knowing the Unknowable God* (Notre Dame IN: University of Notre Dame Press, 1986), *Freedom and Creation in Three Traditions* (Id., 1993), and «Aquinas and Islamic and Jewish Thinkers», in *The Cambridge Companion To Aquinas*, edited by Norman Kretzmann and Eleonore Stump (Cambridge: Cambridge

Maimonides was critical of the *kalam* theologians who assign all causal agency to God. Without the necessary nexus between cause and effect, discoverable in the natural order, the world would be unintelligible and a science of nature would be impossible. The *kalam* theologians, as Maimonides represents them, give no consideration to how things really exist, for this is «merely a custom», and could just as well be otherwise[28].

> «They [the kalam theologians] assert that when a man moves a pen, it is not the man who moves it; for the motion occurring in the pen is an accident created by God in the pen. Similarly the motion of the hand, which we think of as moving the pen, is an accident created by God in the moving hand. Only, God has instituted the habit that the motion of the hand is concomitant with the motion of the pen, without the hand exercising in any respect an influence on, or being causative in regard to, the motion of the pen»[29].

He is also critical of their claims to demonstrate that the world is not eternal but has been created out of nothing. Maimonides thinks that whether the universe is eternal or «temporally created» cannot be known by the human intellect with certainty. The most a believer can do is to refute the «proofs of the philosophers bearing on the eternity of the world»[30].

One of the great accomplishments of Thomas Aquinas is the understanding of creation he sets forth: an understanding which is consistent with biblical revelation, Church doctrine[31], and the principles of natural science[32].

> «The immense achievement of Aquinas is to have explained so much of the Christian teaching on creation in philosophical terms. Nearly everything essential to the Christian idea of creation —the existence of the Creator, the uniqueness of the Creator, the fact that creation is properly out of nothing, the fact that the Creator creates freely— is not only philosophically comprehensible, according to Aquinas, but also philosophically demonstrable. Only one major element of the Christian teaching, the temporal beginning of the world, is not philosophically demonstrable, although it is certainly comprehensible philosophically»[33].

University Press, 1993), pp. 60-84. Also, Roger ARNALDEZ, *À la croisée des trois monothéismes: Une communauté de pensée au Moyen Âge* (Paris: Albin Michel, 1993). Recent studies of Maimonides include: Marvin FOX, *Interpreting Maimonides: Studies in Methodology, Metaphysics, and Moral Philosophy* (Chicago: University of Chicago Press, 1990); S. PINES and Y. YOVEL (eds.), *Maimonides and Philosophy* (Dordrecht: Martinus Nijhoff, 1986); various essays in *Neoplatonism and Jewish Thought*, edited by L. E. Goodmann (New York: State University of New York Press, 1992); Alfred IVRY, «Maimonides on Creation», in *Creation and the End of Days: Judaism and Scientific Cosmology*, edited by David Noak (Washington D.C.: University Press of America, 1986), pp. 185-213; Avital WOHLMAN, *Thomas d'Aquin et Maïmonide: un dialogue exemplaire* (Paris: Cerf, 1988).

[28] Moses MAIMONIDES, *The Guide of the Perplexed*, translated by S. Pines (Chicago: The University of Chicago Press, 1963), Book I, c. 71, p. 179.

[29] *Guide...*, I. 73, sixth premise, p. 202.

[30] *Guide...*, I. 71, p. 180. Maimonides criticizes the methods of the *kalam* theologians, who claim first to demonstrate the temporal creation of the world out of nothing and then to argue from such a creation to the existence of God. In fact, he suggests that the better method is to prove that God exists, is One, and is incorporeal, on the *assumption* that the universe is eternal (*Guide...* I. 71, pp. 180-181).

[31] The Fourth Lateran Council (1215) affirms the doctrine of creation *ex nihilo*, and, furthermore, that creation occurs *ab initio temporis*.

[32] Especially as set forth in Aristotle's *Posterior Analytics* and *Physics*.

[33] Steven E. BALDNER and William E. CARROLL, *Aquinas on Creation* (Toronto: Pontifical Institute of Mediaeval Studies, 1997), p. 62.

Aquinas' doctrine of creation is the wider context of this analysis; the focus is the specific problem of affirming the complete dependence of all that is on God as Creator without denying the existence of real causes in the created order.

As we have seen, for Averroes any doctrine of creation *ex nihilo* destroyed the possibility of a science of nature since the radical contingency of such a created world eliminated the possibility of stable natures and necessary connections between causes and effects. Aquinas does tell us that any creature, by its own nature, that is, left completely to itself, is non-being rather than being. Any creature must be caused to be continuously by God lest it return to the non-being, the nothingness, which it properly is. It is true to say that the creature is literally nothing without the creative causality of God.

Nevertheless, we must remember that the being of creatures, rather than being an accident, is the ultimate perfection or actuality of the creature[34]. Most profoundly, in the depths of any creature is its being; a creature is nothing so much as its own being. The creature, thus, far from being an insubstantial, quasi-nothing, is a real something, existing on its own. In giving being to the creature, God does not merely make the creature to be an extension of Himself; rather He gives the creature an inherent stability in being, i.e., a tendency to exist. God gives being in such a way that the tendency of the given being is not to lapse into non-being but precisely to remain in being. God so constitutes the being of creatures that they tend to exist and not to fall into nothingness[35].

An illustration of the fact that in Aquinas' doctrine being belongs to the creature in a radical way can be found in the *De potentia Dei* (q. 5, a. 3), where he asks whether God can return the creature to nothing. When Aquinas answers this question he rejects the view of Avicenna, who had argued that the essence of the creature is of itself a pure possibility toward either being or non-being. Aquinas agrees with Averroes in thinking that some creatures, such as immaterial substances and heavenly bodies, have an inherent necessity for existing, for there is in them no possibility for corruption. Aquinas, however, carries Averroes' point further, and

---

[34] *In I Sent.*, dist. 8, q. 1, a. 3.

[35] «The natures of creatures manifest that no creatures are degenerating into nothing, either because they are immaterial beings, in which there is no potency to non-being, or because they are material beings, and these remain in existence, at least in their matter, which is incorruptible» (*Summa theologiae* I, q. 104, a. 4, sol.). See also *De potentia Dei*, q. 5, a. 4. On this point it is helpful to compare the doctrine of St. Bonaventure who, like Aquinas, does not hold that created beings have a tendency to non-existence, but who, unlike Aquinas, thinks that since creatures are *temporal* they need a maintenance in being, called conservation, that is different from their being created in the first place. It is true for both Aquinas and Bonaventure that creatures will cease to exist if God should cease to cause their existence. For Aquinas, however, God gives being, and no other act is required in order to keep creatures in existence. For Bonaventure, on the other hand, God must perform two different acts: He gives being initially and, since the creature cannot naturally maintain its own existence, He conserves the creature in existence (BONAVENTURE, *In II Sent.*, dist. 37, a. 1, q. 2, sol.). In other words, according to Bonaventure, if we look at the natural principles of a creature, form and matter, the creature is not mutable into absolute non-being. If, however, we look at the fact that creatures are made out of nothing, we find an inherent emptiness (*vanitas*), instability (*instabilitas*), and mutability (*vertibilitas*). Hence, by nature creatures are mutable into non-being, but by God's grace they are conserved in being. See BONAVENTURE, *In I Sent.*, dist. 8, part 1, a. 2, q. 2, sol. and ad 7-8.

argues that no creature, whether material or immaterial, has any sort of potency for non-being: «[...] in the whole of created nature, there is no potency through which it is possible for something to tend into nothing»[36]. It is true that material bodies tend to corrupt, but matter itself, prime matter, is incorruptible. The whole of the universe, considered in itself, has its own being and tends to continue in being. Of itself, it has no potency, or tendency, to non-being. However true it may be to say that the creature would be absolutely nothing without the creative causality of God, still, the creature really and even fundamentally, has its very own being[37]. For Aquinas, the contingency involved in creation is an expression of the *relation* of dependency on the Creator; it is not so much a characteristic of the creature itself[38].

According to Aquinas, creation is not a change. Creation is the complete causing of the whole reality of whatever is[39]. To create is to give existence, and Aquinas locates creation in the category of relation, although a peculiar type of relation. The creature is really related to the Creator, but the Creator is not really related to the creature. If the relation were really reciprocal, then changes in one would involve changes in the other, and Aquinas is always quick to remind us that God is absolutely immutable[40]. Aquinas explains that the relation of a knower to the thing known is

---

[36] *De potentia Dei*, q. 5, a. 3, sol.

[37] «Being is innermost in each thing and most fundamentally inherent in all things [...]» (*Summa theologiae* I, q. 8, a. 1.

[38] Many interpreters of Aquinas contrast his view of creation with the eternal and necessary world of Greek philosophy. Aquinas does not really identify being created with being contingent. In fact, he distinguishes the necessary from the contingent by noting (following Aristotle) that to be necessary means «cannot be otherwise». Aquinas has in mind the incorruptible, immaterial heavens. Aquinas distinguishes between necessary and contingent beings within the created order. See *Summa Contra Gentiles* III.94. For Aquinas there are beings which are absolutely necessary because in them there is no potency to non-being. Material beings, on the other hand, possess a potency with respect to other forms and thus «can be other than they are». Aquinas often observes that «to be simply necessary is not incompatible with the notion of created being» (*Summa Contra Gentiles* II.30). «Things are said to be necessary and contingent according to a potentiality that is in them, and not according to God's potentiality» (*Summa Contra Gentiles* II.55). «[I]t pertains to divine providence to produce every grade of being. And thus it has prepared for some things necessary causes, so that they happen of necessity; for others contingent causes, that they may happen by contingency, according to the nature of their proximate causes [...] We must remember that properly speaking necessary and contingent are consequent upon being, as such. Hence the mode both of necessity and of contingency falls under the foresight of God, who provides universally for all being; not under the foresight of causes that provide only for some particular order of things» (*Summa theologiae* I, q. 22, a. 4). God, as necessary being, is necessary *per se*; created necessary beings have a cause of their necessity. For further discussion, with references, see BALDNER and CARROLL, *op. cit.*, pp. 28-29.

[39] For an account of Aquinas' understanding of creation, see BALDNER and CARROLL, *Aquinas on Creation, op. cit.*, and William E. CARROLL, «Thomas Aquinas and Big Bang Cosmology»: *Sapientia* 53 (1998), pp. 73-95. A.-D. SERTILLANGES writes: «Creation, even when attached to the notion of beginning, cannot be regarded as an historical event. It is not an event at all because there is no stage at which this "event" could be enacted; because nothing takes place, because no change is produced. There was no reality before the first instant of the world's existence, though there are subsequent realities and events» (*Foundations of Thomistic Philosophy* [St. Louis, 1931], p. 102).

[40] «God who moves all things, must Himself be unmovable. If He, being the first mover, were Himself moved, He would have to be moved either by Himself or by another. He cannot be moved by another, for then there would have to be some mover prior to Him, which is against the very idea of a first mover. If He is moved by Himself, this can be conceived in two ways: either that He is a mover and

like the relation of a creature to its Creator; i.e., the relation is non-mutual[41]. The knower is really related to, and really dependent (for knowledge) upon the knowable thing, but the knowable thing is not in any way affected by the knower. The knowable thing may have a relation of reason (*relatio rationis*) to the knower, but it is not really related to the knower. Similarly, God is not really related to the creature, i.e., God does not depend upon the creature in any way, nor is He affected by the creature, but the creature is completely and constantly dependent upon the creator. In the creature, the real relation to the creator has two elements: it is *ad aliud*, i.e., dependent upon God, and it is an attribute inhering in the creature as in a subject[42].

Since creatures do have their own being, they are able to be true, autonomous causes. Although God is the immediate cause of all being, creatures are still true causes of effects. Aquinas' explanation is that creatures are the true causes of whatever comes to be either through motion or generation and that God is the cause of the being of all things, even of that which is produced through motion or generation. God is the constant cause of all being; creatures cause, as it were, only the determinations of being. The creature causes *this* form to be in *this* matter, by bringing the form into actuality from the potency of matter, but God causes the matter to be and thus gives it a potency to form. Creatures, thus, are the true causes of most[43] substantial and accidental changes in that they produce the new form, but as to the production of being itself, God is always the proper cause.

In *De potentia Dei* Aquinas investigates in considerable detail the relationship between creation and «the work of nature»:

> «[...] [W]e must admit without any qualification that God operates in the operations of nature and will. Some, however, through failing to understand this aright fell into error, and

---

moved according to the same respect or that He is a mover according to one aspect of Him and is moved according to another aspect. The first of these alternatives is ruled out. For everything that is moved is, to that extent, in potency, and whatever moves [i.e., changes] is in act. Therefore if God is both mover and moved according to the same respect, He has to be in potency and in act according to the same respect, which is impossible. The second alternative is likewise out of the question. If one part were causing motion and another were being moved, there would be no first mover himself as such, but only by reason of the part of him which causes motion [...] Accordingly, the first mover must be altogether unmovable» (*Compendium of Theology*, c. 4). See also *Summa theologiae* I, q. 9, a. 1. For a thorough discussion of God's immutability, see Michael J. DODDS, O. P., *The Unchanging God of Love: A Study of the Teaching of St. Thomas Aquinas on Divine Immutability in View of Certain Contemporary Criticism of This Doctrine* (Fribourg [Switzerland]: Fribourg University Press, 1986).

[41] *Summa theologiae* I, q. 13, a. 7.

[42] The fact that creation is a real relation in the creature, therefore, indicates both that creation is prior to the creature and that creation is posterior to the creature. In one sense, creation is prior to the creature, for the creature's relation *ad aliud* is a relation of complete dependence upon the Creator, and such dependence is absolutely prior to everything else in the creature. In another sense, creation is posterior to the creature, for creation inheres in the creature like an essential attribute. Creation in the creature, i.e., creation in the passive sense, is both the activity that the creature is constantly receiving in order to exist and the result of that activity, which forms part of the essential make-up of the creature. For a good discussion of this general topic, see Frederick D. WILHELMSEN, «Creation as a Relation in Saint Thomas Aquinas»: *Modern Schoolman* 56 (1979), pp. 107-133.

[43] Aquinas points out that creatures cannot be the causes of angels or human souls or heavenly bodies (the latter were not, according to mediaeval cosmology, subject to contrareity), nor of temporally first members of every species (since no prior members of the species were present to generate these first members).

ascribed to God every operation of nature in the sense that nature does nothing at all by its own power. They were led to hold this opinion by various arguments. Thus according to Rabbi Moses some of the sages in the Moorish books of law asserted that all these natural forms are accidents, and since an accident cannot pass from one subject to another, they deemed it impossible for a natural agent by its form to produce in any way a similar form in another subject, and consequently they said that fire does not heat but God creates heat in that which is made hot [...] It [the position of the kalam theologians which Maimonides criticizes] is also opposed to reason which convinces us that nothing in nature is void of purpose. Now unless natural things had an action of their own the forms and forces with which they are endowed would be to no purpose; thus if a knife does not cut, its sharpness is useless. It would also be useless to set fire to the coal, if God ignites the coal without fire [...] [After several other arguments, Aquinas continues] Hence we are to understand that God works in every natural thing not as though the natural thing were altogether inert, but because God works in both nature and will when they work»[44].

Aquinas continues his analysis be providing an explanation of *how* it is that God is the cause of another's actions, those «works of nature»:

«It must be observed that one thing may be the cause of another's action in several ways. First, by giving it the power to act: thus it is said that the generator moves heavy and light bodies, inasmuch as it gives them the power from which that movement results. In this way God causes all the actions of nature, because he gave natural things the forces whereby they are able to act, not only as the generator gives power to heavy and light bodies yet does not preserve it, but also as upholding its very being, forasmuch as he is the cause of the power bestowed, not only like the generator in its becoming, but also in its being; and thus God may be said to be the cause of an action by both causing and upholding the natural power in its being[...] Now in every natural thing we find that it is a being, a natural thing, and of this or that nature. The first is common to all beings, the second to all natural things, the third to all the members of a species, while a fourth, if we take accidents into account, is proper to this or that individual. Accordingly this or that individual thing cannot by its action produce another individual of the same species except as the instrument of that cause which includes in its scope the whole species and, besides, the whole being of the inferior creature. Wherefore no action in these lower bodies attains to the production of a species except through the power of the heavenly body, nor does anything produce being except by the power of God. For being is the most common first effect and more intimate than all other effects: wherefore it is an effect which it belongs to God alone to produce by his own power [...] Therefore God is the cause of every action, inasmuch as every agent is an instrument of the divine power operating [...] Therefore God is the cause of everything's action inasmuch as he gives everything the power to act, and preserves it in being and applies it to action, and inasmuch as by his power every other power acts[...]»[45].

The issue concerns the general problem of how one substance can become another substance and how anything can cause this to happen. Where does the form of the new substance[46] come from? Either the new form always existed, in which case it does not come into being; or it never existed, in which case it cannot come into being. Aquinas describes two erroneous accounts of how new things come to be. According to one view, forms pre-exist in matter; thus generation is but the extraction of one thing from another. The forms of new things are actually present in matter, but hidden, and natural agents produce new things only in the sense that they

---

[44] *De potentia Dei* q. 3 a. 7.

[45] *Ibid.*

[46] Aquinas accepts Aristotle's understanding of change, in the categories of both substance and accident, which refers to the loss and acquisition of form (substantial and/or accidental).

serve to reveal what is already there. Aquinas thinks that such a view of «the works of nature» suffers from an «ignorance of matter», a failure to distinguish between potency and act. The forms of things which are produced by nature exist in matter, but only potentially, not actually. Such a distinction between potency and act is essential for making sense of real generation, real novelty, in the world.

Others thought that forms cannot proceed from matter because forms are immaterial realities, and matter is not part of form. Thus, the forms of new things must, quite literally, come from nothing[47]. Natural agents lack the power to produce forms from nothing, and thus a supernatural agent is necessary for the generation of new forms. Real becoming in the world is thereby reduced to the action of an extrinsic *dator formarum* (giver of forms). This is the view of Avicenna, for whom natural forms flow from the lowest of the spiritual substances. Natural agents only prepare matter for the reception of forms; the forms come to be *per viam creationis*[48], and creation is always mingled with the activity of natural agents. Aquinas claims that this view arose because of an «ignorance of forms»: the view that the form of a thing is a subsistent entity (a *quod est*). Aquinas was always alert to avoid the reification of form or matter; they are principles of things, not things in themselves. Form, for Aquinas, is that whereby a thing is (a *quo est*). Those things which come to be are composites of form and matter; it is not, strictly, the form which comes to be; it is the *substance*, which has a certain form, which comes to be, subsists, and whose coming-into-being must be explained.

---

[47] «It must be observed, then, that these opinions arose from ignorance of the nature of form, just as the first-mentioned opinions arose from ignorance of the nature of matter. For being is not predicated univocally of the form and the thing generated. A generated natural thing is said to be per se and properly, as having being and subsisting in that being: whereas the form is not thus said to be, for it does not subsist, nor has it being per se; and it is said to exist or be, because something is by it: thus accidents are described as beings, because by them a substance is qualified or quantified, but not as though by them it is simply, as it is by its substantial form. Hence it is more correct to say that an accident is of something rather than that it is something [*Metaph.* VII, 2]. Now that which is made is said to become according to the way in which it is: because its being is the term of its making: so that properly speaking it is the composite that is made per se. Whereas the form properly speaking is not made but is that whereby a thing is made, that is to say it is by acquiring the form that a thing is said to be made. Accordingly the fact that nature makes nothing out of nothing does not prevent our asserting that substantial forms acquire being through the action of nature: since that which is made is not the form but the composite, which is made from matter and not out of nothing. And it is made from matter, in so far as matter is potentially the composite through having the form potentially. Consequently it is not correct to say that the form is made in matter, rather should we say that it is educed from the potentiality of matter. And from this principle that the composite and not the form is made the Philosopher [*Metaph.* VII, 8] proves that forms result from natural agents [...]» (*De potentia Dei* q. 3 a. 8).

[48] The *dator formarum* is also the «agent intellect» by which the human mind knows all reality. This agent intellect is immaterial and separated from matter, and therefore one for all mankind. The individual human mind, although capable of knowing reality, of itself has no form or concept of anything; the new form or concept is infused in the mind by the agent intellect when the mind is disposed toward it. As James A. WEISHEIPL observes, «It was Avicenna's basic inability to explain how the potential can become actual that made him postulate an extrinsic *dator formarum* to explain the works of nature» («Aristotle's Concept of Nature: Avicenna and Aquinas», in *Approaches to Nature in the Middle Ages*, edited by Lawrence D. Roberts [Binghamton, N. Y.: State University of New York Press, 1982], p. 150). See *Summa contra Gentiles* III, c. 69.

For Aquinas, following Aristotle, forms pre-exist in the potency of matter and they are brought into actuality by natural agents. New forms are not generated by nature out of nothing; they are educed from the potency of matter. Becoming involves natural agency; it is not «mingled» with creation, even though becoming presupposes creation[49]. For Avicenna, the natural agency of fire is sufficient to dispose water to become warmer and warmer, but at the precise moment when the water is sufficiently hot, the *dator formarum* infuses into the water the new form of air to replace the form of water, thus producing a substantial change. For Aquinas, fire is sufficient in itself not only to dispose water to its boiling point (an accidental change), but even to cause water to become air.

The natural sciences seek to discover real causes in the world. Aquinas argues that a doctrine of creation *ex nihilo*, which affirms the radical dependence of all being upon God as its cause, is fully compatible with the discovery of causes in nature. God's omnipotence does not challenge the possibility of real causality for creatures, including that particular causality, free will, which is characteristic of angels and men. As we have seen, the relationship between divine action and the world —both with respect to the natural sciences and to human freedom— continues to be a topic of extended commentary and debate. Aquinas would reject any notion of a divine withdrawal from the world so as to leave room (a metaphysical space) for the action of creatures in such a way, for example, that God would be said to allow or to permit human freedom. Similarly, Aquinas would reject a process theology which denies God's immutability and His omnipotence (as well as His knowledge of the future) so that God would be said to be evolving or changing along with the universe and everything in it. For Aquinas, both views fail to do justice either to God or to creation. Creatures are, and are what they are (including those which are free), precisely because God is present to them as cause. Were God to withdraw, all that exists would cease to be. Real causality in nature —that which Averroes and Maimonides recognized must be protected against the views of certain of the kalam theologians— is not challenged by divine omnipotence or divine omniscience. Creaturely freedom and the integrity of nature, in general, are guaranteed by God's creative causality, i.e., by God's intimate presence in all that He creates. Here is how Aquinas expresses it in the *Summa theologiae*:

> «Some have understood God to work in every agent in such a way that no created power has any effect in things, but that God alone is the ultimate cause of everything wrought; for instance, that it is not fire that gives heat, but God in the fire, and so forth. But this is impossible. First, because the order of cause and effect would be taken away from created things, and this would imply lack of power in the Creator, for it is due to the power of the cause, that it bestows active power on its effect. Secondly, because the active powers which are seen to exist in things, would be bestowed on things to no purpose, if these wrought nothing through them. Indeed, all things created would seem, in a way, to be purposeless, if they lacked an operation proper to them, since the purpose of everything is its operation [...] We must therefore understand that God works in things in such a manner that things have their proper operation [...] Thus then does God work in every worker, according to these three things. First as an end. For since every operation is for the sake of some good,

---

[49] See Jan AERTSEN, *Nature and Creature: Thomas Aquinas's Way of Thought* (Leiden: E. J. Brill, 1988), pp. 319 ff.

> real or apparent; and nothing is good either really or apparently, except in as far as it participates in a likeness to the supreme good, which is God; it follows that God Himself is the cause of every operation as its end. Again it is to be observed that where there are several agents in order, the second always acts in virtue of the first, for the first agent moves the second to act. And thus all agents act in virtue of God Himself; and therefore He is the cause of action in every agent. Thirdly, we must observe that God not only moves things to operate, as it were applying their forms and powers to operation, just as the workman applies the axe to cut, who nevertheless at times does not give the axe its form; but He also gives created agents their forms and preserves them in being. Therefore He is the cause of action not only by giving the form which is the principle of action [...]; but also as preserving the forms and powers of things [...] Since the form of the thing is within the thing, since [form] is of more importance as it is prior and more universal, and since God is properly the cause in all things of universal being, which is the most intimate reality in things, it follows that God operates intimately in all things»[50].

As Simon Tugwell aptly puts it: «The fact that things exist and act in their own right is the most telling indication that God is existing and acting in them»[51]. For God to be universal cause of being does not mean that God only provides what is common to being and thus allows secondary causes *by themselves* to provide the particular determinations of individual beings[52].

Aquinas' understanding of the relationship between God as primary cause and the secondary causes which function in the world depends upon his metaphysical analysis of creation:

> «As Creator, God utterly and uniquely transcends the categorical order of mundane causes (for example, necessary and contingent) so as to be no threat to created causes but rather their enabling origin. The same God who transcends the created order is also intimately and immanently present within that order as upholding all causes in their causing, including the human will [...] It is [...] Aquinas' metaphysical understanding of God as Creator and unique *causa esse* [which] requires that God be actively present in the causing of all causes, including human agents [...] Aquinas does not think that God do all the causing, but rather that God do all the creating [...]»[53].

---

[50] *Summa theologiae* I, q. 105, a. 5. In his earliest reference to this topic, Aquinas writes: «God is also the cause of these things, operating more intimately in them than do the other causes that involve motion, because He Himself gives being to things. The other causes, in contrast, are the causes that, as it were, specify that being. The entire being of any thing cannot come from some creature, since matter is from God alone. Being, however, is more intimate to anything than those things by which being is specified. Hence, it [being] remains even if those other things are removed, as is said in the *Book of Causes*, proposition 1. Hence, the operation of the Creator pertains more to what is intimate in a thing than does the operation of any secondary causes. The fact, therefore, that a creature is the cause of some other creature does not preclude that God operate immediately in all things, insofar as His power is like an intermediary that joins the power of any secondary cause with its effect. In fact, the power of a creature cannot achieve its effect except by the power of the Creator, from whom is all power, preservation of power, and order [of cause] to effect. For this reason, as is said in the same place of the *Book of Causes*, the causality of the secondary cause is rooted in the causality of the primary cause» (*In II Sent.*, d. 1, q. 1, a. 4, resp). We ought to note that in the passage from the *Summa theologiae* Aquinas' distinction between primary and secondary causality concerns formal and final causality as well as efficient causality.

[51] Simon TUGWELL, *Albert and Aquinas: Selected Writings* (New York: The Paulist Press, 1988), p. 213.

[52] See Cornelio FABRO, *Participation et causalité selon S. Thomas d'Aquin* (Louvain-Paris: Nauwelaerts, 1961), pp. 507ff.

[53] Brian J. SHANLEY, O.P., «Divine Causation and Human Freedom in Aquinas»: *American Catholic Philosophical Quarterly* 72:1 (1998), pp. 100 and 102.

Aquinas does not think that God *merely* conserves things in existence. Such a view would lead to deism and is inconsistent with the revelation of a providential God, and of a God who intervenes in history. On the other hand, the occasionalism of kalam theologians such as al-Ghazali[54] protected the God of revelation from being marginalized from nature and history, but at too high a price: the denial of real causes in nature[55]. Aquinas moves beyond the views of Avicenna, Averroes, and Maimonides, and is able to provide the intellectual foundations for a science of nature without sacrificing his faith in the God of revelation. To re-emphasize my point, we can say that Aquinas distinguishes between the being or existence of creatures and the operations they perform. God causes creatures to exist in such a way that they are the real causes of the operations they perform. Cornelio Fabro has argued that Aquinas' understand-ing of the role of the primacy of divine causation has its source in the Neoplatonic doctrines of the *Liber de Causis*[56]: doctrines which,

---

[54] David Burrell observes that occasionalism presupposes a univocal sense of acting —with God as the only real actor in the world. Only God, the kalam theologians claim, can be called «agent». Burrell points out that we cannot make such statements without some notion of what agency is, and we discover, in this view, that the examples we have of agents turn out not to be agents at all. The truth which occasionalism misconstrues is that God's activity is absolutely essential for anything to happen in the world. But, as Aquinas will point out, God's activity —i.e., creating— is not a change, and, thus, is radically different from the activity of creatures. *Freedom and Creation in Three Traditions, op. cit.*, pp. 69-70.

[55] In *De potentia Dei* (q. 3 a. 7), cited above, we find Aquinas remark that if natural entities were not true causes then the forms and causal powers with which they are endowed would have no purpose; and, of course, «it is contrary to the notion of wisdom that there should be anything without a purpose in the works of one who is wise». Elsewhere Aquinas argues that the possibility of scientific knowledge would be denied if occasionalism is true. «If effects are not produced by the action of created things, but only by the action of God, it is impossible for the power of any created cause to be manifested through its effects [and this is precisely how a science of nature proceeds: by reasoning from effects to their causes]. For an effect does not manifest the power of the cause except by virtue of the action which, proceeding from the power, terminates in the effect. But the nature of a cause is not known through the effect except insofar as its power, which flows from the nature, is known through the effect. Therefore, if created things did not act to produce effects, it would follow that no nature of any created thing could ever be known through an effect. And we would be deprived of all knowledge of natural science, since in natural science demonstrations are derived mainly from the effect» (*Summa contra Gentiles* III. c. 69). We must, of course, recognize that in this argument Aquinas presupposes that physical beings have natures and that science seeks to discover these natures. For a good discussion of the subtle metaphysical accounts of God's causal activity in nature, see Alfred J. FREDDOSO, «Medieval Aristotelianism and the Case Against Secondary Causation in Nature», in *Divine and Human Action: Essays in the Metaphysics of Theism*, edited by Thomas Morris (Ithaca, NY: Cornell University Press, 1988), pp. 74-118; and FREDDOSO, «God's General Concurrence with Secondary Causes: Why Conservation is not Enough»: *Philosophical Perspectives*, 5, *Philosophy of Religion* (1991), pp. 553-585.

[56] In his commentary on the first proposition in the *Liber de Causis* —«Every primary cause infuses its effect more powerfully than does a universal secondary cause— Aquinas quotes approvingly from Proclus' *Elements* (Prop. 56): «Everything that is produced by what is secondary is produced more eminently by what is prior and more causally efficacious, by which what is secondary is also produced». Aquinas then remarks: «[...] The activity by which the second cause causes an effect is caused by the first cause, for the first cause aids the second cause, making it act. Therefore, the first cause is more a cause than the second cause of that activity in virtue of which an effect is produced by the second cause. Proclus [...] proves this more explicitly, as follows [Prop. 56]. The second cause, since it is the effect of the first cause, has its "substance" from the first cause. But from that from which something has its substance, it also has the "potency", or power, to act. Therefore, the second cause has its potency, or

when combined with his own metaphysical understanding of *esse,* «enabled him [Aquinas] to give a deeper and more penetrating account of the totality and intimacy of divine causation than had hitherto been possible»[57].

For Aquinas, God is at work in every operation of nature, but the autonomy of nature is not an indication of some reduction in God's power or activity; rather, it is an indication of His goodness. To ascribe to God (as first cause) *all* causal agency «eliminates the order of the universe, which is woven together through the order and connection of causes. For the first cause lends from the eminence of its goodness not only to other things that they are, but also that they are causes»[58]. It is important to recognize that divine causality and creaturely causality function at different metaphysical levels[59]. In the *Summa contra Gentiles* (III.70.8), Aquinas remarks that «the same effect is not attributed to a natural cause and to divine power in such a way that it is partly done by God, and partly by the natural agent; rather, it is wholly done by both, according to a different way, just as the same effect is wholly attributed to the instrument and also wholly to the principal agent». It is not the case of partial or co-causes with each contributing a separate element to produce the effect[60]. «Aquinas

---

power, to act from the first cause. But the second cause is the cause of the effect through its potency, or power. Therefore, that the second cause is the cause of its effect is due to the first cause. To be the cause of the effect, therefore, lies primarily in the first cause and only secondarily in the second cause. Now what is prior in all things is greater, since more perfect things are prior by nature. The first cause, therefore, is more the cause of the effect than the second cause» (AQUINAS, *Commentary on the Book of Causes,* translated by Vincent A. Guagliardo, Charles R. Hess, and Richard C. Taylor (Washington, D.C.: Catholic University of America Press, 1996), pp. 8-9.

[57] SHANLEY, *op. cit.*, p. 105. C. FABRO, *Participation et causalité,* p. 408. In a recent work, Jean-Marie VERNIER summarizes Aquinas' argument in this regard: «l'ordre des effets dépend de l'ordre des causes; or le premier de tous les effets est l'être (*esse*), les autres effets étant des déterminations de celui-ci; l'être (*esse*) est, par conséquent, l'effet propre du premier Agent, et les autres êtres le produisent en agissant dans la puissance du Premier. Les agents seconds, particularisant et déterminant l'action du Premier, produisent comme leurs effets propres les autres perfections qui déterminent l'être (*esse*). L'influence du *De Causis* est toujours aussi évident ici, tant quant à l'affirmation de l'antériorité de l'être (*esse*) qu'à celle de sa dépendance immédiate à l'égard du premier Agent». Vernier concludes his analysis of Aquinas' account of divine causality with the following: «Comme il est aisé de constater, c'est l'appréhension de la causalité divine comme causalité universelle s'exerçant sur l'être (*esse*) —elle-même conclue du dépassement de l'aristotélisme, et de la réinterprétation du *De Causis*— qui fonde, chez saint Thomas, cette doctrine en permettant de comprendre comment l'action de la cause première, sans faire nombre avec celle des causes secondes, causes cette dernière. L'être (*esse*) est l'acte le plus intime de tout être, racine de ce qu'il est et produit, Dieu est l'Être (*esse*) par essence don't tout être recoit l'être (*esse*): tels sont les deux principes assurant l'intelligence de la causalité divine universelle et totale. L'être (*esse*) participé est l'acte d'une essence simple ou composée à laquelle il donne d'être et d'agir: tel est le fondement de la réalité de la causalité naturelle» (*Théologie et métaphysique de la création chez saint Thomas d'Aquin* [Paris: Pierre Téqui, 1997/8], pp. 251and 266).

[58] *De veritate* 11, 1. «On account of the abundance of His goodness (but not as a defect in His power), God has communicated to creatures the dignity of causality» (*Summa theologiae* I, q. 22, a. 3; see also q. 23, a. 8, ad. 2). «Creation is not mingled in the works of nature but is presupposed for the operation of nature» (*Summa theologiae* I, q. 45, a. 8).

[59] «One action does not proceed from two agents of the same order. But nothing hinders the same action from proceeding from a primary and a secondary agent» (*Summa theologiae* I, q. 105, a. 5, ad 2).

[60] «Non basta considerare la causa "seconda" come determinante, l'energia della Causa "prima" alla maniera d'un modello o d'un canale. In questo caso la creatura non agirebbe veramente: essa sarebbe soltanto il luogo di passagio d'una causalità trascendente; essa non meriterebbe d'esser chiamata causa.

insists that the differing metaphysical levels of primary and secondary causation require us to say that any created effect comes totally and immediately from God as the transcendent primary cause and totally and immediately from the creature as secondary cause»[61]. David Burrell provides a particularly insightful analysis of how one ought to think of primary and secondary causality:

> «The very language of "primary" and "secondary" causation presumes a notion of *cause* or of *agent* which is analogous [...] "[P]rimary" and "secondary" do not indicate greater or lesser intensity of causing, or that a primary cause is *more* of a cause than a secondary one, for these assertions both presume a univocal genus, *cause*. The terms "primary" and "secondary", rather, come into play when we are faced with the situation where one thing is what it is by virtue of the other. So each can be said properly to be a cause, yet what makes one secondary is its intrinsic dependence on the one which is primary. This stipulation clearly distinguishes a secondary cause from an instrument, which is *not* a cause in its own right: it is not the hammer which drives the nails but the carpenter using it»[62].

The metaphysical distinction between primary and secondary causality eliminates the difficulties inherent in a scheme of necessary emanation or in any view of creation which fails to affirm God as the radical source of all that is. Again, as David Burrell observes:

> «We have spoken of primary and secondary causes in the context of the cause of being by contrast with causes of manners of being. Such a scheme introduces a paradigmatic notion of secondary causality that will be clearly distinguished from instrumental cause only in a metaphysical setting which can give rise to affirming a primary cause as the source of all that is —and, arguably, only when that source is a free source, since the models of emanation make the intermediate causes to be instruments of the pervasive power of the first, for the connections must obtain with logical necessity if the model is to prove useful all. It follows that a philosophy whose model for origination involves some variety of necessary emanation will have to propose a "compatibilist" view of human freedom [indeed of any real creaturely causality], whereby the ingredients essential to free action would be construed to be co-present with causally determining influences of the first. Similarly, a construal of the creator as less than totally originating, as some form of "demiurge", will have to find a way to constrict its power in order to leave room for human freedom [and any real creaturely causality], since such a "creator" would be sharing a world —if only a possible one— with its creatures»[63].

The alleged incompatibility between divine omnipotence and creaturely causality is the result, at least in part, of the failure to understand divine transcendence. Process theologians attack classical Christian theism «for its picture of a distant,

---

La creatura partecipa dell'efficienza causale nella misura in cui partecipa dell'essere. Tale partecipazione significa insieme: 1) che l'efficienza causale appartiene all creatura, è veramente sua; 2) che è sua al-la maniera d'un dono ricevuto; 3) che le appartiene soltanto entro certi limiti, sia del punto di vista dell'estensione che da quello della profondità. La causa "seconda" raggiunge soltanto un settore limitato dell'essere e questo settore non lo raggiunge direttamente sotto l'angolo dell'*esse*. Intendiamoci bene. Dire che la causa efficiente creata non causa in nessun modo l'*esse*, ma soltanto le sue determinazioni, sarebbe contraddirsi: per la causa efficiente è essenziale di riguardare l'esistenza, il sorgere dell'effetto nell'essere. Però la causa efficiente creata raggiunge direttamente l'essere dell'effetto soltanto nelle sue determinazioni non già come *essere*, ma come *tale essere*. Ma lo raggiunge come tale essere (tale *esse*), proprio perché essa è portata, vivificata, attualizzata dall'azione della Causa totale che raggiunge l'*esse* in quanto tale» (Joseph DE FINANCE, *op. cit.*, pp. 363-364).

[61] SHANLEY, *op. cit.*, p. 108.

[62] David BURRELL, *Freedom and Creation in Three Traditions*, *op. cit.*, p. 97

[63] *Ibid.*, p. 98.

lordly deity, incapable of being affected by the things of the world, standing at the summit of metaphysical hierarchies, and reinforcing their oppressive structures». They «tend to define the issues in terms of a debate between rival metaphysical systems, with the utterly transcendent, omnipotent God of classical theism set against the more immanent, collaborative God of process thought, who is (for Whitehead) an actual occasion or (for Hartshorne, Ogden, Cobb, and Griffin) a society of actual occasions, but at any rate one of the things in the world in genuine interaction with the others»[64]. Proponents of what has been termed «panentheism» criticize «classical Western theism» for understanding the world as being «ontologically outside of God», and, thus, as presenting significant difficulties for making sense of God's action in the world[65]. Their concern is to fashion a theology consistent with biblical revelation and the insights of contemporary science and philosophy, but their criticism of classical theism does not do justice to the position of Aquinas.

God's transcendence ought not to be viewed in «contrastive» terms as being opposed to involvement with the world. Kathryn Tanner discusses at some length the distinction between «contrastive» and «non-contrastive» views of divine transcendence:

> «God's transcendence and involvement with the world vary inversely [...] only when God's transcendence is defined contrastively [...] God [in the "contrastive" model] becomes one being among others within a single order [...] [A] non-contrastive transcendence of God suggests an extreme of divine involvement with the world in the form of a productive agency extending to everything that is in an equally direct manner [...] Such an extreme of divine involvement requires, one could say, an extreme of divine transcendence. A contrastive definition is not radical enough to allow a direct creative involvement of God with the world in its entirety»[66].

It is precisely this more radical understanding of transcendence, what Tanner calls the «non-contrastive» view which Thomas Aquinas would embrace[67].

---

[64] William PLACHER, *The Domestication of Transcendence* (Louisville, KY: Westminster Press, 1996), pp. 1 and 9. David Griffin contrasts the view of process theology with the classical theistic model in which «all creative power belongs to God alone. Whether the world has any power depends on God's will [...] Even if the world does have such power, God is free to interrupt this power or cancel out its effects at any time». According to the process view: «Creative power inherently belongs to the realm of finite existence as well as to God... God is not an eternal being to whom the basic principles of existence do not apply, and who can, therefore, interrupt the causal processes of the world at will. God is more the soul of the universe» (David GRIFFIN, «Postmodern Theology and A/Theo-logy: A Response to Mark C. Taylor», in *Varieties of Postmodern Theology* [Albany, N.Y.: State University of New York Press, 1989], p. 48). Another category of contemporary theology, known as functionalism (associated with the work, for example, of Mark C. Taylor) is also critical of the idea of divine transcendence. Gordon KAUFMAN, in *The Theological Imagination: Constructing the Concept of God* (Philadelphia: Westminster Press, 1981) and *In the Face of Mystery* (Cambridge, MA: Harvard University Press, 1993), claims that we should choose what we say about God in terms of its «function», its usefulness «to our best purposes of encouraging human flourishing and the flourishing of everything in the world around us». PLACHER, p. 14; and KAUFMAN, *In the Face of Mystery*, p. 355. Kaufman criticizes the idea of transcendence: «Such a totally distant God, one emptied of all content and meaning, eventually becomes perceived, however, as one essentially irrelevant to the day-to-day concerns of human life, and thus one which can safely be ignored or neglected» (*Ibid.*, p. 315).

[65] P. CLAYTON, *op. cit.*, p. 100.

[66] Kathryn TANNER, *God and Creation in Christian Theology: Tyranny or Empowerment?* (Oxford: Basil Blackwell, 1988), pp. 45-46.

[67] This sense of transcendence «[...] does not exclude God's positive fellowship with the world or presence within it. Only created beings, which remain themselves over against others, risk the distinct-

In a most perceptive recent book, William Placher argues that in the seventeenth century there began a «domestication of transcendence» which made it a property or characteristic of God which we could grasp. Placher traces the immediate philosophical roots of this domestication to the thought of Francisco Suárez (1548-1617). Following the lead of Duns Scotus, Suárez argued that both God and creatures share the property of «being». Although Suárez did not go so far as Scotus to claim that being can be attributed univocally to God and creatures, Suárez's understanding of analogical predication was, according to Placher, closer to Scotus's understanding than to Aquinas'[68]. Jean-Luc Marion speaks of the «univocist drift that analogy undergoes with Suárez and others»[69]; it was, according to Placher, the

---

ness of their own natures by entering into intimate relations with another. God's transcendence alone is one that may be properly exercised in the radical immanence by which God is said to be nearer to us than we are to ourselves» (*Ibid.*, p. 79). Herbert McCabe, in defending the notion of the involvement of a transcendent God in the world and in the lives of creatures, writes: «The point about the lack of real relation on God's part is simply that being creator adds nothing to God, all the difference it makes is *all* the difference to the creature. (Indeed, the gift of *esse* is too radical to be called a 'difference' since clearly the creature is not changed by coming into existence.) But it makes no difference to God not, of course, because God is indifferent or bored by it all, but because he gains nothing by creating. We could call it sheerly altruistic, except that the goodness God wills for his creatures is not a separate and distinct goodness from his own goodness. The essential point that Aquinas, surely rightly, wants to make is that creation fulfils no need of God's. God has no needs [...] I am repeating at too great a length the familiar point that the God of Augustine and Aquinas, precisely by being wholly transcendent, "*extra ordinem omnium entium existens*" [*In Peri Hermenias* I. lect. 14. 197], is more intimately involved with each creature than any other creature could be. God could not be *other* to creatures in the way that they must be to each other. At the heart of every creature is the source of *esse*, making it to be and to act [*ST* 1 a. 8]. As is well known, Aquinas carries this through to its logical conclusion and insists that it must be just as true of my free acts as of anything else. To be free is to be independent of others. God is not, in the relevant sense, other. So I think it makes perfect sense to say both that it is not in the nature of God to suffer and also that it is not in the nature of God to lack the most intimate possible involvement with the sufferings of his creatures» (Herbert MCCABE, «The Involvement of God»: *New Blackfriars* [November 1985], p. 470).

[68] «[S]ince both God and creatures have "being", we can extend the usage to God by analogy of internal attribution. Creatures are, and God causes them to be. So, just as we can say that the fire must be as hot as the pan [which the fire heats], so we can say that God must have at least as much being —and in the same sense of "being"— as the things God creates» (PLACHER, *op. cit.*, p. 75, referring to Suárez's *Disputationes Metaphysicae* 28.3.2; 32.2.12; and 28.3.10). «A fire, for instance, not only *causes* heat in a pan; the fire itself is hot. Indeed, it is as hot or hotter than the pan it heats. Suárez called the language we use in such a case "analogy of internal attribution". I feel the hot pan and I know what heat is. I see the fire heating the pan and, without feeling the fire, I can talk about the "hot fire" and know what "heat" means here too, because I know the cause contains, in at least the same degree, the property it produces in the effect» (*Ibid.*).

[69] Jean-Luc MARION, «The Essential Incoherence of Descartes' Definition of Divinity», in *Essays in Descartes' Meditations*, edited by Amelie Oksenberg Rorty (Berkeley: University of California Press, 1986), p. 306. Marion thinks that the revival of Thomism in the sixteenth and seventeenth centuries was not always faithful to the thought of Aquinas. This was the case, he thinks, in Suárez's *Disputationes Metaphysicae*. According to Marion, «Suárez filled the ontological gap between the finite and the infinite by a univocal concept of being (*conceptus univocus entis*), sufficient to represent to the human mind any being whatsoever in a confused and indeterminate way. In the dispute concerning the notion of being that inevitably arises between the univocal concept and the traditional analogical conceptions of being, Suárez argued: "If we must deny one of the two, we must deny analogy, which is uncertain, rather than the unity of the concept, which seems to be well demonstrated". [*Disputationes Metaphysicae* II. 2.36]. Consequently, despite Suárez's apparent restoration of Thomas's analogical theology against its denial

crucial first step in the domestication of God's transcendence. Marion sees this tendency toward «ontological and epistemological univocity in theology» manifested as well in seventeenth century scientists' use of mathematics in the study of nature: men can interpret the physical world in mathematical language because God first conceived the world that was to be created in accordance with mathematical rationality. As we know, Suárez was an important source for Descartes' radically different way of thinking about God. When Suárez argued that «being» has essentially the same meaning with respect to God and creatures, he set the stage for Descartes' famous argument that God has more being than we do[70]. Ultimately,

---

(by Duns Scotus) and its distortion (by Cajetan), in the end he recognized that "being is very similar to univocal terms" [*Disp. met.* XXVIII.3.17]. Similarly, Suárez writes: "Creatura denominatur ens absolute a suo esse et non ex proportione aliqua, quam servat ad esse Dei... ratio entis omnino absolute et intrinsece ac proprie concipitur in creatura" [*Disp. met.* XXVIII.3.4]. Thus, being applies in the same sense (logically or intrinsically) to both creatures and God: the ontological gap between the finite and the infinite distinguishes God from his creatures less than the conceptual representation of them as beings joins them [...] Created essences do not *derive* from God as their exemplar (as in Bonaventure and Thomas), but are *seen* by God under some representation [because the knowledge that God has of finite essence derives from a univocal conception of being][...] God therefore does not create the essences but only their existences. Statements concerning what is logicaly possible, statements which ground what we can say about essences, do not depend upon the creative power of God; indeed, they impose themselves upon his understanding: "These statements are not true because they are known by God, but rather they are known because they are true, otherwise one couldn't give any reason why God would necessarily know that they are true" [*Disp. met.* XXXI.12. 40]. For example, Suárez remarks: "Unde, si per impossibile, nulla esset talis causa [viz., God, efficient cause], nihilominus illa enunciatio [viz., 'Homo est animal'] vera esset" [*Ibid.*] The univocity of the concept of being thus gives rise to a kind of epistemological univocity; representation governs the knowledge God has with respect to possibilities (creatures), as much as it does the knowledge which finite understandings claim with respect to the infinite. To this extent, at least, God's knowledge is like ours» (Jean-Luc MARION, «The Idea of God», in *The Cambridge History of Seventeenth Century Philosophy*, edited by Daniel Garber and Michael Ayers [Cambridge: Cambridge University Press, 1998], vol. 1, pp. 267-268). See also, Jean-Luc MARION, *Sur la théologie blanche de Descartes* (Paris: Presses Universitaires de France, 1981); W. HOERES, «Francis Suárez and the Teaching of Johns Duns Scotus on *univocatio entis*», in *John Duns Scotus 1265-1965*, edited by J. K. Ryan and B. Bonansea (Washington, D. C.: Catholic University of America Press, 1965).

[70] We should remember Descartes' argument that if we have an idea of something then the cause of this idea must have as much reality as the idea itself. We have an idea of perfection; thus, ultimately, there must be a perfect being which is the cause of this idea. See his *Meditations on First Philosophy* II. Once Descartes proves that God exists and that He is not a deceiver, he [Descartes] thinks he is able to establish a sure and certain knowledge of the world. Michael BUCKLEY recognizes Descartes' argument as a revolutionary moment in Western philosophy: «It is not the sensible universe that is the evidence for God, but the nature of God that is the warrant for the sensible universe» (*At the Origins of Modern Atheism* [New Haven: Yale University Press, 1987], p. 92).

Placher describes the difference between the ways in which Aquinas (and, he says, Luther and Calvin) have spoken about God and the turn taken by Descartes and Leibniz in the seventeenth century: «For Aquinas, "simplicity" marked the ways we cannot understand God —we cannot divide God into component parts, we cannot distinguish potentiality and actuality in God, and so on. For Leibniz, "simplicity", as applied to God's perfections, guaranteed that we have clear and logically consistent ideas of God's properties. For Aquinas (and Luther and Calvin as well) the words appropriately used about God apply best of all to God, but in a way that none of us can understand. If we were to see God, we would understand that God is wise or good in a way that dwarfs all human wisdom and goodness. But we cannot see God, and therefore we cannot imagine what wisdom or goodness is like in God. But for Leibniz, as for Descartes, we can recognize the finitude and imperfection of the created

several philosophers and theologians in the seventeenth century will argue that we can understand God «because God is not so utterly different from us. God's omniscience, omnipotence, and infinite goodness are the same sorts of qualities we have, differing only in degree»[71].

> «Increasingly, Christian writers in the seventeenth century, since they did not want to think of God as utterly beyond their comprehension, thought of God's otherness in terms of distance and remoteness from the world. Though they did not use the terms, they were in effect contrasting *transcendence* with *immanence*»[72].

In our own day, various intellectual schemes which seek to make room for the agency of creatures or which find theological significance for divine action in terms of the «ontological openness» of quantum mechanics and chaos theory fail to recognize the profound metaphysical point that divine causality transcends any other category of causality. Without a sound metaphysics and a good grasp of analogy discussion of divine action in the world is reminiscent of the discourse of a group of fallen angels in *Paradise Lost*, who «sat on a Hill retir'd»:

> «In thoughts more elevate, and reason'd high
> Of Providence, Foreknowledge, Will, and Fate,
> Fixt Fate, free will, foreknowledge absolute,
> And found no end, in wandring mazes lost...
> Vain wisdom all, and false Philosophie:
> Yet with a pleasing sorcerie could charm
> Pain for a while or anguish, and excite
> Fallacious hope [...]»[73].

Aquinas' metaphysics and, in particular, his profound understanding of creation, provides the only truly comprehensive view of divine and creaturely causality. There is as yet no better guide than Thomas Aquinas if we wish «to assert Eternal Providence and justify the ways of God to men».

WILLIAM E. CARROLL

Cornell College, Mount Vernon, Iowa.

---

world only because we even now have clear and distinct ideas of God's infinity and perfection, so that we can recognize failures to measure up to them». PLACHER, *op. cit.*, pp. 86-87.

[71] *Ibid.* p. 87.

[72] *Ibid.*, p. 111. «Many theologians came to think of God as one of the entities or agents in the world among the others, and of God's properties as differing from those of created things in degree rather than in kind. If we insist on a clear understanding of our language about God, then we have to think of God's love or power as rather like the love of a human being or the power of a steam engine —only greater. Thinking of God in such terms leads to asking where God is, and which are the things God does, and attempts to answer such questions in ways compatible with Christian faith have often made theology the *enemy of science*, fighting to preserve a place for the "god of the gaps" in the face of ever-more-comprehensive scientific explanations» (*Ibid.*, p. 181). Such modes of thought result in thinking in terms of a «zero-sum game»: the more we attribute to God's agency the less we must attribute to the agency of creatures.

[73] Book II: 557-568.