

St. Thomas Aquinas on Intelligent Design

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Abstract: Recently, the Intelligent Design (ID) movement has challenged the claim of many in the scientific establishment that nature gives no empirical signs of having been deliberately designed. In particular, ID arguments in biology dispute the notion that neo-Darwinian evolution is the only viable scientific explanation of the origin of biological novelty, arguing that there are telltale signs of the activity of intelligence which can be recognized and studied empirically. In recent years, a number of Catholic philosophers, theologians, and scientists have expressed opposition to ID. Some of these critics claim that there is a conflict between the philosophy of St. Thomas Aquinas and that of the ID movement, and even an affinity between Aquinas's ideas and theistic Darwinism. We consider six such criticisms and find each wanting.

The Intelligent Design (ID) movement—which includes figures such as Phillip E. Johnson, William A. Dembski, and Michael Behe—has challenged the claim of many in the scientific establishment that nature gives no empirical signs of having been deliberately designed. In particular, ID arguments in biology (on which this paper will focus) dispute the notion that neo-Darwinian evolution is the only viable scientific explanation of the origin of biological novelty.¹ Defenders of ID argue that there are telltale signs of the activity of intelligence that can be recognized and studied empirically, such as the “specified complexity” of DNA or the “irreducible complexity” of micro-biological systems. In recent years, a number of Catholic intellectuals (philosophers, theologians, and scientists) have joined with philosophical naturalists in attacking the scientific *bona fides* of ID. Some of these Catholic critics have claimed that there is a conflict between the philosophy of St. Thomas Aquinas and that of the ID movement, and even an affinity between Aquinas's ideas and theistic Darwinism.

These critics include:

Edward T. Oakes, S.J., a theologian at University of St. Mary of the Lake;

Edward Feser, a philosopher at Pasadena City College;

Francis J. Beckwith, a philosopher at Baylor University;

Stephen M. Barr, a physicist at the University of Delaware;
and Michael W. Tkacz, a philosopher at Gonzaga University.

The critics have offered six major objections to ID from a (purportedly) Thomistic perspective.²

1. ID has a materialistic, mechanistic or modernist conception of life/science and consequently mis-describes God's act of creation by using the model of a human artisan.
2. ID fails to take into account the pervasive immanence of God's activity in creation and so wrongly argues for discrete interventions. Aquinas requires no such interventions and recognizes God's use of secondary causation.
3. Aquinas's design argument is superior to that of ID, because he appeals only to the regularity of nature. Complexity is, and should be irrelevant, contrary to the thrust of the ID movement.
4. While ID focuses on probabilities and inferences to the best explanation, Thomists have no need of such devices. The arguments of Aquinas establish their conclusions with deductive certainty. Besides, end-directed function without an intelligent cause is not just improbable, as ID theorists suppose, but metaphysically impossible.
5. Dembski's three-part filter (necessity, chance, or design) is flawed, since God can use both necessity and chance in creating.
6. Design and teleology belong to *a priori* metaphysics, not to empirical science.

We'll take these criticisms up one at a time.

1. Is ID "Materialistic," "Mechanistic" or "Modernist"?

Oftentimes, the critics are unclear as to what they mean by this charge. There are several possibilities. The charge of mechanism might mean that ID proponents accept the modern rejection of formal and final causation in favor of efficient and material analyses. First, note that this criticism is *certainly* true of Darwinian theory, which seeks to explain the diversification of life via solely material processes of mutation and differential reproduction. Yet, one rarely sees the critics' ire directed toward Darwinism. Second, given that ID seeks signs of intelligent causation/agency, it is not at all apparent that this criticism hits the mark. Take Stephen C. Meyer's argument for intelligent design (Meyer 2009). His argument, inspired by Polanyi (1967), focuses on the formal properties of DNA which go beyond the mere physical arrangement of molecules. This semantic content points beyond itself to the only currently known cause of semantic content: minds. Meyer's focus, unlike that of the Darwinians, is thinking scientifically about the properties of life beyond those of physics and chemistry. Meyer may not be doing Thomistic philosophy, but if his argument holds, it may well open the door to renewed thinking about formal and final causation—even within the sciences.

By this charge, however, some critics seem to have reductionism in mind. But in the debate over the origin of the informational content of DNA, clearly, the Darwinians are the reductionists. In contrast to ID proponents, Darwinians, by and large, rarely consider (immaterial) information content as a separate entity to be studied scientifically and philosophically. They are focused on bottom-up causation and have reduced life to physics and chemistry alone. The centrality of information to the ID paradigm is an important link to the Aristotelian and Thomistic tradition. The very word points back to the centrality of the concept of form in Aristotle's system and to its irreducibility to matter.

Furthermore, ID proponents have been a lonely voice decrying the reductionistic approach to life. ID proponents argue that life is not matter only but also needs immaterial *information*. This information exists both inside and outside of the DNA (Meyer 2009, 473–477; Sternberg forthcoming). Organismal parts are integrated into coordinated systems in a top-down fashion where multiple parts must be present for function and survival (Behe 1996; 2007). And whereas Darwinians often reduce life not merely to DNA, but to only coding DNA, ID proponents argue that organismal structures are designed with a purpose. The Darwinian myth of so-called “Junk DNA” is just that—a myth (Wells 2011, 89–96).

Some critics seem upset that Michael Behe would refer to some micro-biological systems as being composed of “molecular machines” (Behe 1996). But these criticisms fail to recognize that St. Thomas himself often used analogies between living things and man-made artifacts. In fact, for Thomas, “all creatures are related to God as art products are to an artist, as is clear from the foregoing. Consequently, the whole of nature is like an artifact of the divine artistic mind” (*SCG* 3.100).³ Behe and others in the ID movement—unlike their Darwinian counter-parts (e.g., Dawkins 2006)—have not forgotten that living creatures are much more than machines or human artifacts.

By arguing that (at least) some features of the universe are best explained by intelligent rather than mere material and efficient causes, ID proponents are reintroducing teleology into the study of nature rather than accepting the anti-Thomistic, Baconian partition of academic disciplines.⁴ ID proponents claim to be doing science under a broad definition of science as the systematic study of nature via careful observation.⁵ They do this not, as some Thomists fear, because they have conceded that all knowledge is ultimately empirical knowledge, but because nineteenth-century science drove teleology out of nature more by definition than by observation.⁶ To the question of whether there are empirical markers of design in nature, ID proponents say yes, and Darwinists say no. To classify two projects with different answers to the same question as different disciplines is unwarranted, and, in our scientific culture, it puts ID at an unnecessary rhetorical disadvantage. That said, ID proponents have never disowned philosophical knowledge. ID proponents are not afraid to be classified as doing philosophy, so long as other equivalent theories are also so categorized.⁷

The critics fail to distinguish the essence of the ID movement from various accidents of argumentation on its behalf. Prudent advocates take into account the

metaphysical assumptions of their audience. Most contemporary scientists are not metaphysical Aristotelians. So, it makes sense, *arguendo*, not to challenge every aspect of modern scientific thinking at once.

Often, the critics seriously misrepresent the actual position of key ID proponents, especially William Dembski, on this point. Dembski explicitly insists on the complementarity of physical and intelligent causes, which he describes as two modes of explanation that are “distinct without prejudicing each other” (Dembski 1999, 90). Dembski himself criticizes the view of American theologian B. B. Warfield on the grounds that Warfield adopts a “virtually mechanistic account of nature” with “occasional supernatural intervention,” which Dembski describes as a “muddle” and “exactly the worst of both worlds” (*ibid.*). In contrast, Dembski endorses the view of Charles Hodge, who talked of physical and intelligent causation as “acting in tandem” (Dembski 1999, 87–88). Dembski insists that intelligent agency does not violate natural law, while not being reducible to it (Dembski 1999, 89).

Even if the critics were right about Dembski’s allegiance to a modern and un-Thomistic conception of the physical world, this would be far from sufficient to prove that ID is essentially anti-Thomistic. The ID movement is, metaphysically speaking, a big tent. What unifies the members of the movement are commitments to certain relatively narrow scientific questions, especially: are non-intelligent mechanisms (including the Darwinian mechanism) capable of explaining the sort of functionality we find in the biological order? This question is every bit as legitimate from the perspective of Thomism as it is from the perspective of mechanism. Indeed, it is more legitimate for Thomists, since Thomists are already committed to the reality of irreducible, intelligent agency.

2. Is Divine Agency Exclusively Immanent?

Thomists rightly call attention to the intrinsic or immanent teleology evident in living things. However, this focus leaves some Thomists with an Aristotelian blindspot. Given the temporality of the world (i.e., its finite past), creation—including its irreducible teleology—has an *extrinsic* source for Aquinas. It’s true that, had God created an eternal, beginningless universe, creation would have involved no temporal intervention (Aquinas 1997, 43–44). However, we know, both from revelation and (now) from empirical evidence, that the universe is not infinitely old, but had its origin in time. Such origins in time require direct divine action.

Aquinas shows no inclination to avoid miraculous creation. He does not share the aversion of Enlightenment thinkers like Spinoza to interruptions or discontinuities in the fabric of nature due to direct divine agency. For example, Aquinas believed that Adam was miraculously created from the “slime of the earth,” and that Eve was miraculously formed from his rib (*ST* 1.92.4).

Yet, the critics often recoil at the idea of God “intervening” in nature. Some seem to think that this implies that God is going against nature—or worse, that God did not get things right the first time, and so he has to wind his clock back up.⁸ In this vein, Michael W. Tkacz wonders if God must poke his finger in the

pre-biotic soup—as though he were an intruder upon foreign territory, rather than its rightful ruler (Tkacz 2007, 275). But according to Aquinas, miracles are *beyond*, but not *contrary to*, nature:

Since God is prime agent, all things inferior to Him are as His instruments. But instruments are made to serve the end of the prime agent, according as they are moved by Him: therefore it is not contrary to, but very much in accordance with, the nature of the instrument, for it to be moved by the prime agent. Neither is it contrary to nature for created things to be moved in any way whatsoever [*qualitercunque*] by God: for they were made to serve Him. (SCG 3.100)

Fr. Oakes similarly complains that ID makes God into a “Celestial Cell Constructor” or a “Divine *Bauplan* Architect” (Oakes 2001b, 52). In great contrast to St. Thomas, we are told, God does not intervene in the natural order to manage his creation as though he were “the traffic cop of cellular evolution” (Oakes 2001a, 10). “The idea that God swooshed down from heaven 3.5 billion years ago to toggle some organic-soup chemicals into self-replicating molecules and thereafter, as occasion warranted, had to intervene to jump-start new species is, quite literally, incredible.” It is offensive, he thinks, to believe that God “intervenes *every now and again*” (Oakes 2001a, 11). Thinking that God intervenes “directly,” we are told, has “grotesque” “theological implications.” (Oakes 2001a, 8).

But, *pace* the critics, for Thomas—someone who knew a thing or two about orthodox theology—lack of “intervention” was no virtue of an account of divine creation. More than this, according to Thomas, God sometimes purposely acts contrary to the regular, divinely ordained workings of nature so as to show that he is the Almighty, that he is not constrained by necessity, but stands above the created order. Notice that this necessarily involves our observation of God’s “intervention,” or what Del Ratzsch calls “counterflow” in nature (Ratzsch 2001, 4–6, 41–43). Thomas writes:

So, if by means of a created power it can happen that the natural order is changed from what is usually so to what occurs rarely—without any change of divine providence—then it is more certain that divine power can sometimes produce an effect, without prejudice to its providence, apart from the order implanted in natural things by God. In fact, He does this at times to manifest His power. For it can be manifested in no better way, that the whole of nature is subject to the divine will, than by the fact that sometimes He does something outside the order of nature. Indeed, this makes it evident that the order of things has proceeded from Him, not by natural necessity, but by free will. (SCG 3.99; see also SCG 2.3)

In addition, Aquinas’s commitment to essentialism rules out most meanings of “evolution.” According to Aquinas, the semen of one species lacks the natural power to produce a plant or animal of another species. So, if a new species appears,

it must come “immediately from God” (*ST* 1.65.4). Mere chance lacks the power to jump the gulf from one form to another.

But in the first production of corporeal creatures no transmutation from potentiality to act can have taken place, and accordingly, the corporeal forms that bodies had when first produced came immediately from God, whose bidding alone matter obeys, as its own proper cause. To signify this, Moses prefaces each work with the words, “God said, Let this thing be,” or “that.” (*ST* 1.65.4)

As one can see, the critics’ focus on God’s use of secondary causes—or as one critic revealingly puts it, “the autonomy of nature” (Tkacz 2007, 279)—exaggerates Thomas’s view of the role of secondary causes regarding the origin of species. True enough, Thomas (1) rejected occasionalism, holding that creatures are true causes of their effects, and (2) believed that God created living things to operate according to the nature he gave them. However, the idea that “God’s action in the world is exhausted by creation and conservation” was, according to Freddoso, “regarded as too weak by almost all medieval Aristotelians” (Freddoso 1988, 77). For Thomas and others, God must also be a concurrent cause of every action. In this sense, it is misleading for the critics to speak of secondary causes as though this means nature is just “doing its own thing.” Rather, concurrence entails divine action at every level.⁹

What is more, Thomas specifically considers and rejects the notion that humanity was created via secondary causation: “The first formation of the human body could not be by the instrumentality of any created power, but was immediately from God” (*ST* 1.91.2). Thomas believes God must be directly involved in the creation of the first human form. He likens this involvement to direct miraculous activities like raising the dead to life or restoring sight to the blind. He thinks “the human soul is ‘breathed into’ the materials of earth” (McMullin 1985, 18). Aquinas was aware that the Biblical text may indicate some secondary causes in life’s development when it speaks of what the earth brought forth. But for Thomas, one thing is certain: as regards the human soul, “God had to intervene in a more radical way” (McMullin 1985, 19).

Moreover, this exaggerated focus on secondary causation is also seen in the utter absence of Thomas’s doctrine of exemplar causation—a crucial part of Thomistic metaphysics—in the critics’ writings.¹⁰ Given that creatures are a combination of form and matter, the crucial question as regards the origin of species is where form comes from. Darwin, denying Aristotelian essentialism, saw organisms’ traits as accidental properties of living things that change with the winds of time (Darwin 1993, 78–79; Wiker 2002, 218).¹¹ Not so St. Thomas.

An exemplar cause is a type of formal cause—a sort of blueprint; the idea according to which something is organized.¹² For Thomas, these ideas exist *separately* from the things they cause. For instance, if a boy is going to build a soap-box derby car, the idea in his mind is separate from the form of the car; yet the car’s form expresses the idea, or exemplar cause, in the boy’s mind. Herein lies the important

point: for Thomas, a creature's form comes from a similar form *in the divine intellect*. In other words, the cause of each species' form is *extrinsic*. In fact, writes Thomas, "God is the first exemplar cause of all things" (*ST* 1.44.3). Creatures do possess the causal powers proper to the nature God granted them, but creatures most certainly do *not* possess the power to create the form of their (or any other) species.

For instance, frog parents have the proper ability to generate tadpoles. They are able to bring out the natural form that is present in the potentiality of matter. However, the frog parents cannot create the form *frog*. After all, Thomas reasons, if frog parents could create the form *frog*, they would be the creators of their own form, and this is clearly a contradiction. Natural things can *generate* forms of the same species, but they cannot *create* the form of a species in general.

More than this, while the critics find intervention unseemly, Thomas specifically considers the idea that God may continue his creative activity with creatures even after he has given them their form—i.e., intervene creatively—and finds it perfectly acceptable. Thomas writes:

It is not contrary to the essential character of an artist if he should work in a different way on his product, even after he has given it its first form. Neither, then, is it against nature if God does something to natural things in a different way from that to which the course of nature is accustomed (*SCG* 3.100).

Secondary causes are certainly real. But, to repeat, they are not the whole story. Not only did Thomas not share the critics' aversion to God's intervention; his metaphysics is fundamentally opposed to it. For Thomas, "God . . . can cause any effect to result in anything whatsoever independently of middle causes" (*SCG* 2.99). Only God has the power to create novel form. He is truly the creator "of all things visible and invisible."

While Aquinas did not shy away from intervention—and even thought God purposely intervened in a detectable way—ID is a very minimal claim which does not *require* intervention. Dembski points out that his heroes, Reid, Paley and Hodge, "made no appeal to miracles in the production of design" (Dembski 1999, 87). Dembski, following Thomas Reid, locates Cicero and the Stoics as precursors of ID, despite their lack of belief in a "personal, let alone transcendent and miracle-working, God" (Dembski 1999, 88). Dembski insists that design does not require miraculous intervention (Dembski 2002, 326), and he admits that it is logically possible that all design was front-loaded into the Big Bang. As he puts it, "A designer is not in the business of moving particles but of imparting information" (Dembski 2002, 335). Dembski is not alone. Behe concurs:

the assumption that design unavoidably requires "interference" rests mostly on a lack of imagination. There's no reason that the extended fine-tuning view . . . necessarily requires active meddling with nature. . . . One simply has to envision that the agent who caused the universe

was able to specify from the start not only laws, but much more (Behe 2007, 231).

3. Is Complexity Relevant to an Inference to Design?

Contrary to the claims of Feser (2010, 154–155), the presence of complexity is relevant to Aquinas’s argument for design:

To signify this, Moses prefaces each work with the words, “God said, Let this thing be,” or “that,” to denote the formation of all things by the Word of God, from Whom, according to Augustine [Tract. i. *in Joan.* and *Gen. ad Lit.* i. 4], is “all form and fitness and concord of parts” (*ST* 1.65.4).

It is impossible for things contrary and discordant to fall into one harmonious order always or for the most part, except under some one guidance, assigning to each and all a tendency to a fixed end. But in the world we see things of different natures falling into harmonious order, not rarely and fortuitously, but always or for the most part. Therefore there must be some Power by whose providence the world is governed; and that we call God. (*SCG* 1.13)

This accords well with Behe’s straightforward definition of design: “Design is simply the *purposeful arrangement of parts*” (Behe 1996, 193).

Feser has not shown complexity to be absent from Thomas’s argument for design. Even if he did, it would only demonstrate that there is more than one kind of design argument. Thomas’s paradigm for “harmonious order” may well be the Ptolemaic system of astronomy—hardly a simple picture.

Contemporary readers should keep in mind that with the advance of information science, there exist today even more refined categories of explanation for what Thomas called “order.” Thomas generally contrasts order—or great or “harmonious” order—with chaos and disorder. But contemporary ID arguments take advantage of categories which distinguish relatively simple order (such as is often seen in physics) from the highly ordered or “specified complexity” such as is seen in DNA (cf. Dembski 1998). In this instance, ID theorists have retained the same basic distinctions made by Thomas, but accommodated the insights of modern science to strengthen the conclusion that order requires an intelligent orderer.

4. Is the Use of Probabilities Legitimate in Detecting Intelligence?

Feser (2010, 155) also contends that probabilities are irrelevant to Aristotelian-Thomists’ arguments for the existence of irreducible teleology in nature. But Thomists surely need to consider the measure of the improbability of chance-generated design simulacra. They are right to assert that it is metaphysically impossible for something with a *real* telos to exist apart from the activity of an intelligent cause. However, it is possible for a “heap” of merely physical things, assembled by chance,

to *mimic* real teleology and purpose. We encounter many examples: clouds or rocks that resemble sculptures of human beings or animals, pancakes that look like profiles of JFK, etc. We can sensibly ask, is the Old Faithful geyser a living organism, with its own form and telos, or is its regularity a mere by-product of a chance conjunction of various geological conditions? To answer these questions with confidence, we must ask how likely the observed conjunction would be in the absence of a unifying and ordering immanent form.

To rigorously distinguish between real and merely apparent design, then, it is best to consult probabilities. It is true that in many ordinary situations, it is unnecessary to consult probabilities to distinguish design from apparent design. In most cases, we simply perceive design using our reliable faculties to do so (cf. Ratzsch 2003, 107). Dembski himself merely claims to formalize what is involved in everyday perceptions of design with his notion of specified complexity. But while they may not be strictly necessary for detecting design, these probability assessments serve to tighten up our objective certainty regarding perceptions of design. Thus, Dembski's work is vital to the modern realization of the Thomistic project.

5. Can God “Use” Chance?

The critics have also taken aim at Dembski's “explanatory filter” (Barr 2010; Beckwith 2010, 437–438; Beckwith forthcoming). The usual criticism is that Dembski's filter implies that things which are attributable to “law” are not attributable to God's design. But this is a gross misunderstanding—one the critics should have noticed, given that Dembski and other ID theorists have consistently supported design arguments from the fine-tuning of the laws of physics. Dembski has long noted that law, chance and design are not mutually exclusive categories (Dembski 2004, 93). When detecting design, one might conclude that known laws of nature are insufficient to produce the phenomenon in question. But this in no way implies that the known laws are not themselves designed.¹³

While Dembski's filter is only one possible way of framing ID arguments—and not necessary to any such argument—it is interesting that Aquinas seems to anticipate this tripartite schema: necessity, chance or design. There is one difference in terminology: Aquinas would speak not of “necessity” or “law of nature,” but of the *powers* of natural or created beings. Every effect must be the product either of some unintelligent agent or of chance or of some intelligent agent. Aquinas follows the Aristotelian definition of “chance”:

A chance event arises from a coincidence of two or more causes, in that an end not intended is gained by the coming in of some collateral cause, as the finding of a debtor by him who went to market to make a purchase, when his debtor also came to market (*SCG* 3.74).

Good fortune is said to befall a man, when something good happens to him beyond his intention, as when one digging a field finds a treasure that he was not looking for (*SCG* 3.92).

According to Thomas, the order of creation, including the distinction of species, is not a result of chance.

And again, the form of anything proceeding from an intellectual and voluntary agent is intended by that agent. But, as we have already seen, the universe of creatures has as its author God, who is a voluntary and intellectual agent. Nor can there be any defect in His power so that He might fail in accomplishing His intention; for, as we proved in Book I of this work, His power is infinite. It therefore follows of necessity that the form of the universe is intended and willed by God, and for that reason it is not the result of chance. For it is things outside the scope of the agent's intention that we say are fortuitous. Now, the form of the universe consists in the distinction and order of its parts. The distinction of things, therefore, is not the result of chance. (SCG 2.40)

In fact, nothing in creation is, ultimately (in reference to God), due to chance.

It is further to be observed that good or ill fortune may befall a man as a matter of luck, so far as his intention goes, and so far as the working of the prime forces of nature (*corpora coelestia*) goes, and so far as the mind of the angels goes, but not in regard of God: for in reference to God nothing is by chance, nothing unforeseen, either in human life or anywhere else in creation. (SCG 3.92)

But couldn't God use a stochastic or chancy process in creating? No, for three reasons:

1. God does not in fact leave anything up to chance (as just seen in SCG 3.92).
2. God could not leave anything up to chance: every particular contingent fact depends on God's providential will, as a matter of necessity (ST 1.22.2).¹⁴
3. If a chance process did occur *per impossibile*, it would be incapable of creating a new form.

Couldn't God use chance to produce a specific result intentionally? No. By the Aristotelian (and Thomistic) definition of chance, chance is whatever is caused by a confluence of causes outside the intention of anyone. So, by definition, God cannot use chance to produce a specific result. This would make the result both outside anyone's intention and inside God's intention—a self-contradiction.

This is not to say that Thomas thinks it nonsensical to speak of chance or fortune. Quite the opposite (SCG 100.74). There is contingency in nature. And chance certainly exists in the sense of interacting causal chains apart from any creature's intention. But this is chance only in reference to creatures, or perhaps more accurately, in reference to the limited knowledge of creatures. As Thomas says, "in reference to God nothing is by chance, nothing unforeseen, either in human life or anywhere else in creation" (SCG 3.92). As regards God's creation of creatures, chance

has no place. Creatures are *intended* by God, for they come from a corresponding form in the divine intellect.

Still, there have been clever attempts to integrate divine action with the Darwinian definition of chance. Peter van Inwagen, for instance, claims that chance processes can be used by an intelligent agent. Van Inwagen correctly points out that the inference from the chanciness of every part of an ensemble of events to the chanciness of the whole ensemble commits the fallacy of composition. The individual events in some set of events can be random, and can be random because the agent made them so, in order to fulfill some purpose. For example, an agent can make use of an intentionally random sampling of points in order to estimate the area under a curve (van Inwagen 2003, 353–354). Van Inwagen's observation is correct, but not relevant to the case in which God is the agent, at least not according to Aquinas. God does intend each and every natural event, not merely some global pattern.

Van Inwagen also asks what "random" means in the context of Darwinism. His answer, on behalf of Darwinian biologists, is to claim that "randomness" merely refers to a lack of correlation between the probability of the occurrence of a mutation and its functionality or adaptiveness. This is compatible with frequent, purposeful intervention by God, guiding the process of evolution toward a desired result.

We have three responses. First, van Inwagen is right that neo-Darwinians often claim that the randomness they have in mind when referring to "random mutations" only means that there is no correlation between mutations and beneficial adaptations. But this could be taken in two ways. On one hand, it might mean that specific mutations do not happen *because* they are adaptive. On the other, it might mean that, on the whole, there is no correlation between mutations and adaptive functions. Notice, however that the former understanding is not amenable to van Inwagen's argument. In his postulation of divine action the guided mutations would indeed happen because God knew that they were adaptive. The latter interpretation is more amenable to van Inwagen's argument, but this sort of evolution would not be Thomistic. It faces both the challenge of essentialism (seen earlier) and the fact that Thomas thought divine action would be evident to all. Plus, if God is actively intervening at critical points in the history of life with sufficient frequency to shape the course of evolution, what grounds do we have for thinking that his doing so would not induce some correlation between the occurrence of mutations and their adaptiveness? *Prima facie*, we would expect some such correlation to result. In addition, what possible motive would God have to respect the Darwinian no-correlation constraint?

Second, truth be told, Darwinians typically advance a much stronger claim than this minimal assertion of a lack of correlation. The whole point of Darwinism in the first place was to exclude intelligent agency from the details of the process altogether. As Darwin himself said, "If I were convinced that I required such additions to the theory of natural selection, I would reject it as rubbish . . . I would give absolutely nothing for the theory of nat. selection, if it require miraculous additions at any one stage of descent" (Darwin 1991, 345).

Third, if van Inwagen is correct, God is (inexplicably) acting directly in such a way as to mimic the power of non-intelligent mechanisms to mimic intelligent agents. This is not the scientific theory Darwin or the chief neo-Darwinians had in mind. Not only is it convoluted, but it is drastically removed from the spirit of Thomas's claim that God sometimes acts apart from the natural order so as to reveal his power in a detectable fashion. (*SCG* 3.99)

6. Is Design Empirically Detectable?

Critics like Feser also contend that "Aquinas's argument is intended as a metaphysical demonstration," not as a "quasi-scientific empirical hypothesis" like that on offer from ID (Feser 2009, 111). To be sure, there are differences between Thomas's Fifth Way and, say, Behe's argument for irreducible complexity. But Aquinas clearly thought that the activity of intelligence can be empirically detected. For instance, there could be no spontaneous generation of living forms without intelligence. Thus:

It was laid down by Avicenna that animals of all kinds can be generated by various minglings of the elements, and naturally, without any kind of seed. This, however, seems repugnant to the fact that nature produces its effects by determinate means, and consequently, those things that are naturally generated from seed cannot be generated naturally in any other way. It ought, then, rather to be said that in the natural generation of all animals that are generated from seed, the active principle lies in the formative power of the seed, but that in the case of animals generated from putrefaction, the formative power is the influence of the heavenly bodies. (*ST* 1.71.1)

Aquinas refers to the formative power of the heavenly bodies precisely because these bodies were thought to be animated by celestial or angelic intelligences. Thus, Aquinas affirms the soundness of inferring intelligent design from the spontaneous generation of life. But this is not the only place in which it is clear that Aquinas thought that the activity of intelligence could be empirically detected.

Everything that tends definitely to an end, either fixes its own end, or has its end fixed for it by another: otherwise it would not tend rather to this end than to that. But the operations of nature tend to definite ends: the gains of nature are not made by chance: for if they were, they would not be the rule, but the exception, for chance is of exceptional cases. Since then physical agents do not fix their own end, because they have no idea of an end, they must have an end fixed for them by another, who is the author of nature. But He could not fix an end for nature, had He not Himself understanding. (*SCG* 1.44)

The fifth way is taken from the governance of the world. We see that things which lack intelligence, such as natural bodies, act for an end, and

this is evident from their acting always, or nearly always, in the same way, so as to obtain the best result. Hence it is plain that not fortuitously, but designedly, do they achieve their end. Now whatever lacks intelligence cannot move towards an end, unless it be directed by some being endowed with knowledge and intelligence; as the arrow is shot to its mark by the archer. Therefore some intelligent being exists by whom all natural things are directed to their end; and this being we call God. (*ST* 1.2.3)¹⁵

Often the critics implicitly accept the identification of science with methodological naturalism: according to the critics, immanent teleology cannot be empirically identified. Since ID theorists seek to frame arguments that fall within the purview of natural science, the critics erroneously jump to the conclusion that ID theorists have unwittingly embraced naturalism or mechanism (Feser 2009, 110–115; Beckwith 2010, 435–439). Once we recognize that ID theorists believe teleology to be empirically detectable (as did Aristotle and Aquinas), this bizarre misattribution to them of “mechanistic philosophy” falls flat.

In addition, the critics import into their interpretation of Aquinas an Enlightenment dichotomy of philosophy from empirical science.¹⁶ Aquinas was no Rationalist, like Descartes or Spinoza. Physics and metaphysics formed a continuum for Aristotelians like Aquinas. Both are equally rooted in the knowledge that comes to us through the senses. Aquinas assigns a very modest role to purely *a priori* (in the Kantian sense) or introspectible axioms.

Thomists are right to insist that *knowledge* can be derived from philosophy, theology and other disciplines—not merely from science. But, contrary to the critics, ID proponents have never claimed otherwise (Beckwith 2009, 443–444). In fact, ID proponents have fought this misconception tooth and nail (Johnson 1995, 89–131; Pearcey 2004). They insist their work is scientific, not because it must be scientific to be knowledge, but because it is scientific under any neutral definition. When some critics take issue with ID’s claim to be scientific, they unwittingly concede an anti-theistic definition of science (Plantinga 2001, 341). What metaphysically neutral rule would keep scientists from searching for empirical signs of purpose and agency?¹⁷ Why should the Thomist concede that God’s design cannot be empirically detectable? Why not remain open-minded, especially when Aquinas himself thought that God’s acts are detectable via observation of the natural world?

Conclusion: The Thomist Critics’ Central Misunderstanding

The Thomistic critics of ID understand neither ID nor the heart of Darwinian evolution. Darwinism and Neo-Darwinism are instances of reductive materialism. That’s their whole point, their *raison d’être*. Again, Darwin was emphatic that natural selection was worthless if it needed to be supplemented by divine action. Natural selection was meant to be a designer substitute; nature could, given enough time, mimic the effects of intelligence.

Darwinism contends that the ultimate cause of the origin of all biological functionality is the result of chance genetic mutations. Natural selection is not a

second, parallel cause. It is not a force or mathematically precise natural law like gravity. Forces may be guided or unguided. Laws are teleological. In contrast, natural selection merely means that living things die and reproduce at different rates; this in turn affects the composition of the next generation. Natural selection merely increases nature's probabilistic resources by progressively fixing "beneficial" innovations in a much larger population. Chance and chance alone must be responsible for the emergence of each new form and function. The Darwinian process as a whole is impersonal, non-intentional, and reduces the evolutionary process to material and efficient causes. If Darwinism is correct, the Thomist must hold that mere material and efficient causes have the power to, and did in fact, give rise to formal and final causes.

If Darwinism is true, then Thomism must be false. Thomists claim that the biological world is populated by things with irreducible biological natures, each of which must be the product of an intelligent cause. ID is not a competing metaphysical system for the simple reason that it is not a metaphysical system. With respect to the origin of species, at least, Thomism is a form of intelligent design, not an alternative to it.¹⁸

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Notes

1. We focus on *biological* design arguments, even though proponents have made arguments in various scientific disciplines, simply because these arguments are the center of the critics' ire. The critics show little awareness of design arguments in other disciplines (e.g., Gonzalez and Richards 2004).

2. The critics, taken collectively, have leveled these six objections. It should not be implied, however, that each ID-critic endorses each objection.

3. Cardinal Joseph Ratzinger, now Pope Benedict XVI, agrees: "If creation cannot be recognized as the metaphysical middle term between nature and artificiality, then the plunge into nothingness is unavoidable" (Ratzinger 1995, 93). Thomas's *Summa Contra Gentiles* will be abbreviated *SCG* and his *Summa Theologiae ST*. All *SCG* quotations are from the translation of Anton C. Pegis, et al., while all *ST* quotations are from the Fathers of the English Dominican Province translation.

4. This should not be taken as implying that ID proponents think teleology, natures, essences, or universals cannot be grasped in non-empirical ways (contra Beckwith 2009, 443).

5. Such a broad definition is easily justified given the well-acknowledged failure of proposed demarcation criteria (Laudan 1982).

6. Fortunately, there has been some recent movement away from principled methodological naturalism, even among metaphysical naturalists. As one recent paper argues,

“Evolutionary scientists are on firmer ground if they discard supernatural explanations on purely evidential grounds, and not by philosophical fiat” (Boudry et al. 2010, 241).

7. Stephen C. Meyer, for instance, argues persuasively for the scientific status of ID and the methodological equivalence of ID and Darwinian theory. He insists most strongly, however, not that ID is science but that if it is not going to be called science, then neither should theories with the same logical structure. He writes:

Perhaps, however, one just really does not want to call intelligent design a scientific theory. Perhaps one prefers the designation ‘quasi-scientific historical speculation with strong metaphysical overtones.’ Fine. Call it [ID] what you will, provided the same appellation is applied to other forms of inquiry that have the same methodological and logical character and limitations. In particular, make sure both design and descent [Darwinian theory] are called ‘quasi-scientific historical speculation with strong metaphysical overtones.’ (Meyer 2000, 193)

8. Because the critics often claim that ID, in great opposition to St. Thomas, views God as a Clockmaker, the following passage is noteworthy:

Accordingly, in all things moved by reason, the order of reason which moves them is evident, although the things themselves are without reason: for an arrow through the motion of the archer goes straight towards the target, as though it were endowed with reason to direct its course. The same may be seen in the movements of clocks and all engines put together by the art of man. Now as artificial things are in comparison to human art, so are all natural things in comparison to the Divine art. And accordingly order is to be seen in things moved by nature, just as in things moved by reason, as is stated in *Phys.* ii. And thus it is that in the works of irrational animals we notice certain marks of sagacity, in so far as they have a natural inclination to set about their actions in a most orderly manner through being ordained by the Supreme art.” (*ST* 1-2.13.2) [all underlined emphases are ours]

While there is surely a helpful distinction between natural and artificial objects, Thomas is not averse to viewing God as acting analogously to a human artificer, even a clockmaker. For Thomas, it is evident that intelligent agency lies behind the order seen in natural entities which lack reason. Such order is the exclusive hallmark of rational agents. ID proponents, with the knowledge modern science affords, extend such reasoning to, among other things, the highly ordered nature of DNA and the microbiological world.

9. God and his creatures are both wholly causes of the same events, not partial causes (*SCG* 3.70).

10. Even in the one instance in which exemplar causation is alluded to, Edward Feser fails to notice its centrality to the debate about whether God “intervenes” in nature (Feser 2010). Much of what follows in this discussion of exemplar causation is also to be found in Gage (2010).

11. Neo-Darwinians also advocate a nominalist conception of species (Dawkins 2006, 34).

12. For the most extensive treatment of Thomas’s doctrine of exemplar causation to date, see (Doolan 2008).

13. One must be careful, however, as assuming that the laws of nature are designed when making an ID argument may beg the question (cf. Richards 2010, 254–258).

14. Thomas is quite clear that everything is subject to the providence of God. He writes:

But the causality of God, Who is the first agent, extends to all being, not only as to constituent principles of species, but also as to the individualizing principles; not only of things incorruptible, but also of things corruptible. Hence all things that exist in whatsoever manner are necessarily directed by God towards some end; as the Apostle says: "Those things that are of God are well ordered (Romans 13:1). Since, therefore, as the providence of God is nothing less than the type of the order of things towards an end, as we have said; it necessarily follows that all things, inasmuch as they participate in existence, must likewise be subject to divine providence. It has also been shown (Q. 14, A. 6, 11) that God knows all things, both universal and particular. And since His knowledge may be compared to the things themselves, as the knowledge of art to the objects of art, all things must of necessity come under His ordering; as all things wrought by art are subject to the ordering of that art.

And further:

So far then as an effect escapes the order of a particular cause, it is said to be casual or fortuitous in respect to that cause; but if we regard the universal cause, outside whose range no effect can happen, it is said to be foreseen. Thus, for instance, the meeting of two servants, although to them it appears a chance circumstance, has been fully foreseen by their master, who has purposely sent to meet at the one place, in such a way that the one knows not about the other. (*ST* 1.22.2)

In this way, "The order of divine providence is unchangeable and certain, so far as all things foreseen happen as they have been foreseen, whether from necessity or from contingency" (*ST* 1.22.4).

15. Often the critics complain that Thomas's Fifth Way is not really a design argument at all. Feser (2008; 2010), for instance, pits ID arguments, and even those of William Paley, against Thomas's Fifth Way. Supposedly, Paley is concerned with the end-directedness of things like watches, but Aquinas is only interested in the "immanent end-directedness" of natural things. But, as Marie George points out, "Feser's overemphasis on the difference in natural and artificial teleology results in" this error (George 2010, 446). Feser's "emphasis on the intrinsic directedness to an end of natural things leads him [Feser] to be unduly critical of Paley's argument, when in fact there are many striking similarities between Paley's argument and the Fifth Way" (George 2010, 449). Both Paley and Aquinas see the end-directedness of artifacts as an extension of the intelligence of intelligent agents. So too, they both see the end-directedness of living things as pointing to an intelligent being. In this regard, note that Feser (2011, 4) argues that Paley's argument (and, by extension, ID arguments) are "incompatible" with Thomas's metaphysics of immanent finality. Yet this incompatibility claim is unsupported by Feser. He points to what he takes to be several differences between the two types of arguments, but it would take a contradiction, not mere differences, to support an incompatibility claim.

16. For more on the critics' strange amalgamation of Aristotle's four causes with a Baconian demarcation of the disciplines, see Richards (2010, 260–270).

17. On methodological naturalism, see Meyer (2000), Plantinga (2001), Ratzsch (2004), and Menuge (2010).

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