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The Virtuous Cooperator: Modeling The Human in an Ecologically Endangered Age

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Abstract A theological model of the human is needed to prompt responsible thinking about and acting within the physical world. Some basic components for modeling the human as a virtuous cooperator appear in the teachings of Thomas Aquinas. When appropriated cautiously and informed broadly by contemporary scientific findings, this model provides a promising way of thinking about humans in relation to other species and ecological systems, a framework for acting responsibly, and the motivation for making this behavior habitual.

Keywords Aquinas, cooperation, moral virtues, criteria for modeling, theological anthropology, environmental ethics, sustainability.

Introduction

During this time of widespread ecological degradation, a meaningful model of the human is needed to prompt responsible thinking about and acting within the physical world. Many models exist in the Christian tradition, but few have been explored for their application to our ecological age besides *imago Dei* of Genesis 1,¹

Teilhard de Chardin's *homo faber*,² the U.S. Catholic Bishops' preferred "co-creator" and "stewards" duo,³ and Philip Hefner's "created co-creator."⁴ Among alternative models of the human is the virtuous cooperator, the basic components of which appear in the teachings of Thomas Aquinas (1224/5-1274 C.E.). When informed by contemporary scientific findings, this model provides a promising way of thinking theologically about the human in relation to other species and ecological systems, a framework for acting responsibly, and the motivation for making this behavior habitual. I am grateful for this opportunity to bring the virtuous cooperator to the attention of scholars.

I begin by identifying the criteria that must be met for modeling the human today. An exploration of Aquinas's notions about cooperation and the chief moral virtues follows in which I indicate the significance of his teachings for our time and the extensions that are needed in order to be more responsive to environmental problems. Subsequently, I test the virtuous cooperator against the criteria for modeling humans and conclude in favor of this model.

Criteria for Modeling

Several criteria are pertinent to the task of developing a model of the human during this ecologically destructive age.⁵ For a theological model, the first and foremost criterion is that it should be rooted in a religious faith tradition so it can be recognized, embraced with confidence, and applied by people who profess that faith. The more deeply embedded the model is in that religion's primary texts, doctrines, and teachings by eminent theologians, the more likely the model may appeal to the faithful.

A second criterion for modeling the human for our time is the need to be consistent with broad scientific findings about the physical world. Theological discourse regarding the human must cohere with knowledge gained through other modes of inquiry or run the risk of being irrelevant and meaningless. When informed by the contemporary sciences, a model of the human will assume that every natural being existing today emerged from a common beginning about fifteen billion years ago out of which heavy elements like carbon and

iron were produced in the interiors of stars. This ensuing process enabled the formation of at least one planet with the chemical composition, temperature and radiation emission to bring about replicating molecules that led eventually to complex and diverse beings.⁶ Among them was at least one species able to reflect on the history of its emergence from and with other species and to recognize the radical human connection with all living and nonliving beings that constitute the universe and especially Earth.⁷

That the model should be positively relational to other species and physical systems is a third criterion. While an understanding of the interconnection of humans and other past and present beings surfaces when assuring the model's consistency with contemporary scientific findings, a metaphysical understanding of that relationship is also crucial. A model of the human for our time must avoid dualistic thinking that places humans over or apart from other beings and views them merely as instruments to be used for whatever purposes a human desires. Conversely, a model for our ecologically endangered times must incorporate regard for humans as integral actors with non-humans in ecological systems, respect for their mutual interests in and needs for surviving, valuing of the distinct contributions they make to the functioning of ecological systems, and appreciation for the dependence humans have on the health and wellbeing of other species, the air, the land and water.

A fourth criterion is that the model should outline at least broadly the kind of behavior that is needed today. The more descriptive the normative language is, the more effective the model will be for guiding human actions.

Finally, the model should point to the motivation for bringing about a change in the way people who profess a religious faith think about and act toward the more-than-human others that constitute Earth. This is a pivotal criterion because a model will most likely fail unless the ultimate theological reason for bringing about a transformation in attitude and behavior is explicit. From my experience as a teacher with a past and present in environmental advocacy,

this standard has been crucial for students in environmental ethics course at Marquette University and for activists with whom I have been working over the past three decades.

Aquinas on Cooperation – Four Types

Informed by a medieval understanding of the world as a geocentric organism with fixed species created and ordered hierarchically to one another by God,⁸ Aquinas reflected on the cooperation among creatures and their cooperation with God. He used variations of *cooperator*⁹ to convey four distinct but related types of cooperation: (1) Creatures cooperate by acting or being acted upon according to their God-given natures for their individual and common good in conformity with the orderly world God created and sustains in existence;¹⁰ (2) living creatures cooperate with God, their primary cause for existing, by acting as secondary agents on other creatures to carry out God's plan for the universe;¹¹ (3) God both operates on and cooperates with humans for their temporal and eternal good;¹² and (4) humans cooperate with God's grace by acting on others in ways that achieve good in temporal life as they seek their eternal good which is happiness with God.¹³ Occasionally he referred to 1 Cor 3.9, 1 Thes 3.2-5, and Rom 8.28 to support his notions.

Inter-Cooperation of Creatures

Aquinas's teachings that creatures cooperate by acting or being acted upon according to their natures reflected his understanding that God created all animate and inanimate beings with specific capabilities of fulfilling their purposes in relation to one another. From his medieval perspective, the ascending order of creatures with some material composition consisted of the four primary elements of air, earth, water and fire, minerals and other mixed elements, plants, irrational animals, and humans (ST 1.47.2).¹⁴ Primary elements serve as the basic substrata for mixed elements, mixed elements provide nourishment for plants, plants provide food for animals, and animals as well as plants supply the physical needs of humans. Aquinas referred to this arrangement as an order of conservation (SCG 3.22) within which creatures cooperate to internally sustain the universe that God created and maintains in existence. At least implicitly, this

arrangement also constitutes an order of instrumentality in which humans use plants and animals, animals use plants, and plants use mixed elements for their sustenance.¹⁵ He lavished with superlatives his descriptions of this orderly universe of cooperators, each of which contributes something essential to the perfection of the universe¹⁶ and all of which cooperate to achieve its internal common good.¹⁷ While he considered some cooperators qualitatively better than others, primarily because of their natures and capacities to act, and thought that humans are superior to other material beings, because of the innate human capacity to make informed decisions and act freely on them, he concluded that the whole universe of cooperators is better than one or several types of creatures.¹⁸

Of course, Aquinas's depictions of the physical world's functioning were limited by his knowledge of the world that was informed by the natural philosophy of his time. There are no inklings in his works about the evolution of species that in turn account for the human connection with other species over eons of time, about their molecular similarities, or about the complex makeup and synergistic effects of abiota and biota within ecological systems. Nor did he convey any anticipation that human activities could accelerate the extinction of species, destroy habitats, degrade ecological systems, or threaten the integrity of the biosphere. Foundational to his 13th century thinking was his faith that God created and sustains the world's capacity to maintain itself physically according to natural laws God established to assure its functioning.¹⁹

Creatures' Cooperation with God

That living creatures cooperate with God by acting on other creatures has its basis in Aquinas's thinking about God as the primary cause of the universe of many diverse entities, including secondary causes that act on others according to their natures.²⁰ As the primary cause of their existence, God endowed living creatures with capabilities of acting on others to achieve their respective purposes as intended by God.²¹ Plants acting on minerals and other mixed elements for their nourishment, animals acting on plants for their food, and humans acting on plants and animals for their temporal needs are God's

cooperators, by acting instrumentally on others to acquire what they need for their sustenance and acting together to maintain the internal functioning of the universe.²² By acting on others, secondary actors enable those upon which they act to achieve their God-endowed purposes for being in the universe.

Secondary agents are also God's cooperators in a sacramental sense by manifesting God's goodness and wisdom.²³ They manifest God's goodness and wisdom as individual types of creatures that actively achieve their temporal purposes in relation to others according to God's intentions. However, the best manifestation of God's goodness and wisdom is the functioning of all secondary agents and those acted upon as God intends.²⁴

As cooperators among many different cooperators, humans cooperate with God by acting freely according to the dictates of reason to achieve what is good in their temporal lives that are supposed to be geared toward achieving their eternal happiness with God.²⁵ Whereas other living creatures operate by instinct in determined patterns through principles innate to their species,²⁶ Aquinas reasoned from his medieval understanding of the world, humans have the unique ability among creatures to act by making informed decisions about how they ought to be living in the world and to exercise their free wills in deciding whether or not to act accordingly (SCG 3.78; ST 2|2.64.2). Their decisions and actions are supposed to be conducive to the quest for eternal life in God's presence.²⁷

Aquinas stressed repeatedly that humans should restrict their actions on other creatures to acquiring the necessities of life and knowing God as they seek their eternal goal (ST Supp. 91.1).²⁸ When acting on other creatures in these two ways that are appropriate to the functioning of the universe, humans are God's cooperators.²⁹

The necessities of life are things humans need to support their bodies, such as food, clothing, transportation (ST 2|2.141.6),³⁰ and those things without which they cannot carry on their lives in appropriate ways as they seek eternal happiness with God (ST 1|2.4.7).³¹ He proscribed the exorbitant use of God's other creatures,

describing it as inordinate and wasteful (ST 2|2.83.6), immoderate (ST 2|2.169.1),³² disordered and vicious (SCG 4.83). The excessive use of other entities was judged sinful in the scheme of the human quest for eternity with God (ST 2|2.118.1).³³

Aquinas's teachings that humans can use other creatures to know God reflect his sacramental perception of the physical world as a means through which God's goodness, wisdom, power and other attributes can be contemplated (SCG 2.2).³⁴ This teaching also reflects his optimism that humans have been gifted by God with the capacity to rise gradually from the world to limited knowledge of God, though he expressed his sacramental view of the world in ways less emotive than found in works by Augustine, Hugh of St. Victor, Bonaventure and Francis of Assisi.³⁵ Physical beings can lead humans to God, Aquinas contended, referring occasionally to Rom 1:20 and Wis 13, as long as they start from their faith perspective that the world is God's creation and approach it as a means of knowing and loving God (ST 1.65.1).³⁶

That humans often fail to be cooperative concerned Aquinas. Whereas other living and nonliving beings do not deviate from God's intentions, defective behavior occurs extensively among humans (ST 1.49.3). Their behavior is defective when they do not orient their actions toward their temporal common good (ST 1|2.109.3),³⁷ with a view to their eternal good—God (ST 1.49.1-3).³⁸ For Aquinas, the more comprehensive the good envisaged by the human, the more the human will corresponds to the will of God who wills the good of the orderly universe (ST 1|2.19.10),³⁹ and loves it with the highest kind of love (DC 7).⁴⁰ To show humans how to live a God-centered life, God became incarnate in the person of Jesus Christ (ST 3.1-5).

God's Grace Operating on and Cooperating with Humans

To help individuals make and act on decisions to acquire temporal goods in ways that cohere with the quest for eternal happiness, God provides special care to individuals by giving them grace (ST 1.22.2).⁴¹ God's grace both operates on and cooperates with humans toward their ultimate goal (DV 24.11, 27.5) without

interfering in the human exercise of making and carrying out their decisions freely.⁴² God's grace operates lovingly on the human, working on the human spirit to think about and act in ways that are conducive to achieving eternal life (ST 1|2.110.1). God's grace cooperates with the human by actively sustaining the innate human capacity to make informed decisions and to choose to act accordingly. God's grace also operates on and cooperates with humans to develop moral virtues that will aid them in exercising their wills appropriately in this life because they are motivated to achieve eternal life with God.⁴³

Human Cooperation with God's Grace—Living Virtuously

According to Aquinas, God created humans with the potential for developing moral virtues that will assist them in acting appropriately as God intends (ST 1|2.63.1).⁴⁴ Prudence, justice, temperance and fortitude are the chief moral virtues about which he wrote and from which he identified an extensive system of virtues motivated by the theological virtue of love for God and desire to enjoy eternal happiness with God.⁴⁵ The moral virtues are innate to the individual potentially (ST 1|2.58.1).⁴⁶ Like seeds in the ground, they are naturally present in the human reason and must be cultivated (ST 1|2.63.1).⁴⁷ Humans cooperate with God's grace by developing the virtues in themselves. Once perfected, they confer an aptness to act correctly without hesitation (ST 1|2.56.3).⁴⁸

The Virtuous Cooperator

Aquinas taught that humans should be guided by the virtues when acting on other creatures (SCG 1.92), since the moral virtues incline them to follow informed decisions about relating to one another and to other entities that constitute the orderly universe.⁴⁹ Prudence provides the rationale for acting on other living and nonliving beings in appropriate ways (ST 1|2.57.4-6),⁵⁰ while justice, temperance and fortitude incline the human to act according to what prudence dictates. These four virtues and their sub-virtues have significance for living responsibly in our age of ecological degradation.

Acting Prudently

Prudence is the habit of being discreet, Aquinas taught (ST 1|2.61.2). A prudent person chooses means of acting on other living and nonliving beings through a process of taking counsel, forming a good judgment, and commanding correctly (ST 1|2.65.1).⁵¹ Taking counsel is an act of inquiry aimed at discovering the appropriate means toward achieving a goal (ST 1|2.14.1, 57.6).⁵² Both the private good of the individual and the common good of groups to which the individual belongs are considered when seeking counsel. The good of the individual is impossible, Aquinas argued, unless the common good of others is assured (ST 2|2.47.10). Thus, the prudent individual considers what is good for one's self by being prudent about what is good for many (ST 2|2.47.10).⁵³ In the process of taking counsel from informed sources, the human discerns what is needed to sustain one's life, the life of one's neighbor, and the community to which the person belongs. Judgment is made subsequently on the means most applicable for acting on other beings for the purpose of acquiring what is needed for human sustenance (ST 2|2.47.8, 1|2.57.6). Command, the chief and final act in prudent decision-making, requires three considerations that have special significance for environmental ethics today: foresight, circumspection and caution (ST 2|2.47.8).⁵⁴ Foresight assures that what is commanded in the present is fitting for the future (ST 2|2.49.6, 55.7). Circumspection facilitates the choice of suitable means to an end in light of a combination of circumstances that may arise (ST 2|2.49.7). Caution is required to avoid evil through a firm understanding of good (ST 2|2.49.8).

While this stepwise exercise of prudence does not absolutely assure that the action chosen will be successful for the reasons intended, Aquinas explained, the habit of making prudent decisions lessens the uncertainty of the outcome (ST 2|2.49.5). To habitually choose correct means of acting requires the development of this virtue through instruction and experience over a long period of time (SCG 3.122).⁵⁵ This framework for the exercise of prudence suggests a systematic approach to addressing environmental problems that is theologically motivated by the desire to cooperate with God.

Acting with Moderation

The virtue of temperance inclines the human to act according to what prudence dictates by curbing irrational desires and passions for bodily pleasures and material goods things that are contrary to reason (ST 1|2.65.1, 60.5).⁵⁶ Since God intended that they serve as means for sustaining human life while ultimately seeking eternal happiness with God, the individual should not take excessive pleasure in them for themselves or they will distract the individual from spiritual things that lead to God (ST 2|2.141.5-6). These temporal needs fall into two classifications according to Aquinas: (1) things without which humans as individuals and as a species cannot survive; and, (2) things without which humans cannot carry on their lives in appropriate ways (ST 2|2.141.6). While bodily survival needs can be ascertained from Aquinas's works and fits well with his overall notion of the consumptive order of creatures that sustains them and the internal functioning of the universe, exactly what he meant by things beyond these necessities is somewhat obscure. They go beyond purely physical requirements and extend to the ownership of external things, including a moderate amount of material wealth that is determined when considering the place, time and manners of those with whom the person lives (ST 2|2.141.6).

In light of Aquinas's emphasis on the virtue of temperance as a guide toward controlling the desire for material goods, excessive standards of living would seem to be precluded in any setting to avoid deflecting attention from the ultimate desire for eternal happiness with God. He endorsed poverty cautiously and restrictively, since he thought it an extraordinary way of perfecting one's life as a Christian. He also insisted that a person who adopts poverty should retain the ability to secure the necessities of life in a lawful manner.⁵⁷

Acting Justly

The virtue of justice inclines the human to relate to living and nonliving entities in ways that are conducive to achieving the temporal common good of humans (ST 2|2.61.2, 58.5) as they seek their ultimate end in God. All members of a community stand in relation to it as parts to the whole, he taught repeatedly, and the good of the

individual should be directed to the common good of the community (ST 2|2.58.5-9, 1|2.19.10). Because the community's temporal good is to have sufficient means through which its members can sustain their lives, the human would be inclined by the virtue of justice to use living and nonliving beings in ways that assure their availability to meet the needs of all humans in that community. An individual who possesses or desires to possess immoderate amounts of material goods sins against another, since one individual cannot have an abundance of external riches without other individuals lacking them (ST 2|2.118.1).

Since Aquinas considered humans as members of various kinds of communities--households, states and the universe (DP 5.6), his thinking provides an opening for construing the virtue of justice as inclining humans to use goods of the Earth in ways that assure their availability to meet the needs of other humans now and into the future. Furthermore, because the common good of the human community would be jeopardized by the degradation of the air, land and water, the accelerated rate of species extinction, the destruction of habitats, and damage to the biosphere,⁵⁸ possibilities of which Aquinas was evidently unaware, the virtue of justice could be construed today as inclining humans individually and collectively to relate to other biota and abiota in ways that do not jeopardize the functioning of natural systems in the interests of human communities near and far, now and into the future.

An even more expansive and ecologically sensitive role for justice is suggested from Aquinas's teaching that the more comprehensive the good envisaged by the human, the more the human will corresponds to the will of God who wills the good of the whole universe (ST 1|2.19.10).⁵⁹ God is the exemplar for humans to follow by acting in ways that are geared toward the good of all natural entities (SCG 3.24, 2.45-46). As creatures endowed with intellectual capacities to discern appropriate actions and to choose to act accordingly, humans would be inclined by the virtue of justice to act for the common good of the entire corporeal world. Of course, because the human is, according to Aquinas, the end of all corporeal things in the orderly universe, acting primarily in the interest of the common

good of the universe would concurrently be acting in the interests of the human species.

As one of two particular types of justice, commutative justice would incline humans individually and collectively to give to another the temporal goods that are due to that individual (ST 2|2.61.1, 4). Among these permissible goods is personal property, but only to the extent that it enables the individual to meet life's needs and is cared for in ways that make it possible to aid others who do not have sufficient goods with which to meet their needs (ST 2|2.58.1). Distributive justice directs the community to assure that the individual receives a fair share of the common goods of the community that is proportionate to the importance of the individual's position in that community (ST 2|2.61.1, 63.2). Receiving a fair share of the community's common goods assures that the individual has sufficient goods with which to live a virtuous life as part of the community, but not at the expense of meeting the needs of others in that community. Both types of justice provide a basis for collective action aimed at assuring that human needs are met now and into the future. Meeting these needs would be dependent upon maintaining the availability of natural goods upon which humans rely for their sustenance.

Explicit extensions of Aquinas's teachings on the virtue of general justice and the two particular types of justice are warranted today in light of contemporary scientific findings about the human place in the cosmological-biological continuum and the human dependence on other than humans for sustenance. Justice should be accorded generally to other species, ecological systems, and the biosphere of Earth as essential parts of the community of the universe whose interests in sustainable functioning should be considered. Explicit extensions of the distributive and commutative forms of justice are also needed to assure that humans recognize and respect the needs of other cooperators and avoid actions that impede them from satisfying their needs.

Acting Steadfastly Courageous

The virtue of fortitude enables the individual to persevere in relating appropriately to other living and nonliving entities despite

impediments that weaken the individual's virtuous cooperation with them (ST 2|2.123.2-3).⁶⁰ Fortitude reinforces justice to incline humans individually and collectively to seek the good of other humans now and into the future. Fortitude supports temperance so it inclines humans to use other corporeal things for the necessities of life and to know God rather than for pure pleasure or pride of ownership (ST 1|2.68.4). Fortitude strengthens prudence to persist in inclining humans in their efforts to discern the best ways of relating to other living and nonliving entities that constitute Earth.

Fortitude can be appropriated today as the virtue that will strengthen humans individually and collectively to persist in using the goods of Earth minimally with a view to the internal sustainability of ecological systems and the biosphere. This is an especially important point to stress among the middle-income to affluent faithful in both industrially developed and developing countries. Though Aquinas considered this virtue to incline humans to be steadfast, despite fear and other passions that may impede their acting according to the dictates of prudence (ST 1|2.61.2), fortitude could also be construed today as fortifying human resolve to take protective and remedial actions for fear of real or potential adverse effects that human actions cause on other species, their habitats, and ecological systems.

Meeting the Modeling Criteria

Does the virtuous cooperator meet the five criteria that are essential to model the human during our age of ecological degradation? Many advantages surface to make this model promising for people who profess their faith in God.

Rooted in the Tradition

While thinking about the human as a virtuous cooperator is rooted in the Christian faith through efforts of one of its most eminent theologians, this model has languished for centuries and needs airing for consideration by the faithful today. Finding the components of this model in Aquinas's thinking should command the attention of many within the Christian and other traditions who have inherited or at least respect his synthesis of Judeo-Christian thinking with the best of Greek

philosophy. His appeal may be especially strong for Roman Catholics because he is revered as a "Doctor of the Universal Church", a saint who may have been the first person canonized for being a theologian and teacher (Pieper 1962: 17), a scholar and priest whose methods, doctrines and principles were required by the *Codex Juris Canonica* to be taught to candidates for the priesthood (Pieper 1962: 18), and a profound thinker who stimulated numerous strains of systematic theology. As Karl Rahner (1983: 7), one of the great Roman Catholic theologians of the twentieth century, remarked about Aquinas's overall appeal:

I believe that even today Thomas still remains, in a quite special and *unique* sense, a theologian of such magnitude that he must not cease to have a place in our discussions.

His notions about the human as a virtuous cooperator should be considered when searching for a meaningful and relevant way to respond to the ongoing degradation of God's creation.

Support from the Catholic tradition for thinking about humans as cooperating with God's grace can also be found in the theological conclusions of the Council of Trent (1545-1563). In the context of the Reformation and Martin Luther's teachings about justification by faith alone, the Council (1941: 31-34) explained the need for individuals to consent to and cooperate with God's grace in the process of seeking eternal salvation. More recent support comes from Pope John Paul II (1991: #59) who laments the failure of humans to cooperate with God's grace⁶¹ and urges their collaboration to avoid development strategies that fail to respect other beings or jeopardize the planet's integrity (1991: #37).⁶²

Retrieving the virtuous cooperator model from Aquinas's teachings also provides the advantage of distinguishing between God's activity and human activity, a criticism leveled against the "co-creator" model.⁶³ For the monotheistic traditions, the use of terminology to exemplify how we ought to act must avoid confusing or misleading the faithful.

Consistent with Contemporary Scientific Findings

While Aquinas's understanding of the physical world differs vastly from ours, there is some resonance between his metaphysical thinking about humans as cooperators among many other cooperators that internally sustain the physical world with ecologists' findings about the cooperative interactions of the air, land, water and living beings that sustain ecological systems. So, too, does his hierarchical thinking about humans as cooperators among various cooperators who act on others for their sustenance cohere generally with scientific observations about the food chain.⁶⁴ Some consistency may also be found between contemporary scientific findings about the intellectual capacity of the human and Aquinas's understanding of the human as a rational cooperator who can contemplate various courses of action, make informed decisions, and choose among them.

Of course, his 13th century works do not convey, nor should they be expected to, any inkling of scientific evidence obtained centuries later that the human species emerged out of and with other species in a cosmological-biological continuum, that the DNA compositions of humans and other species account in part for affinities and disparities in their actions, or that the interconnections and interdependencies of species, the air, land and water are highly complex ecological systems of which they are parts. However, his faith perspective that God created and sustains in existence the internally self-maintaining world does not conflict with these contemporary scientific findings,⁶⁵ though his metaphysical framework for thinking about species as "fixed" from the beginning of time is inappropriate for our time.

Modeling the human as a virtuous cooperator is also consistent with ongoing discussions about the sustainability of the planet among natural and social scientists and leaders of nations and non-governmental organizations. They have been striving for two decades to define sustainable development in order to identify realistic ways in which Earth's dynamic physical systems can be sustained while developing countries strive to industrialize their economies and

industrialized countries continue to advance their economic wealth.⁶⁶ How humans ought to use other species, the air, land and water is crucial to this discussion.

Positive Relationship to Other Species and Physical Systems

The virtuous cooperator developed from Aquinas's thinking is positively relational to other species, their habitats and ecological systems. Grounded physically in the mutual needs of all beings to sustain themselves and thereby sustain the functioning of ecological systems and the biosphere, the virtuous cooperator will assume a posture of humility before other-than-humans for the late arrival of the human species in the unfolding universe, the dependence humans have on other beings for human health and well-being, the havoc that humans have caused to other species and ecological systems, and the technological power with which humans are equipped to destroy Earth. The virtuous cooperator will aim to manage human activities so they are not degrading or destructive of other species, their habitats, ecological systems or the biosphere, recognizing that they are capable of managing themselves.⁶⁷ The virtuous cooperator will view other beings as cooperators essential to the functioning of systems of which they are parts. The virtuous cooperator will be concerned about the interests that other species, habitats, ecological systems and the biosphere have for surviving and strive to avoid impeding their efforts.

Virtuous cooperators will be eco-centric in their daily activities because they are centered on God who created, sustains and beckons forth the further unfolding of the universe. Virtuous cooperators will also appreciate their distinctive capabilities in relation to other cooperators and accept responsibility for functioning in relation to them in ways that are conducive to their well-being.

In addition to this positive relational attitude toward other species and physical systems, the virtuous cooperator model provides a unique aesthetic dimension. Clothed in a sacramental sensitivity toward the physical world that Aquinas shared with other theologians before, during and after his time, the virtuous cooperator will be inclined to revere other humans, members of other species, their

habitats, and the fragile biosphere. They will not be considered sacred in themselves, however, as held by some world religions. Instead, the virtuous cooperator will relate reverently to other physical beings because they mediate God's presence and character.

Descriptive Behavior

The virtuous cooperator model provides the framework for behavior that is needed during this age of ecological degradation. Being habitually prudent, just, moderate and courageous are the basic behavioral characteristics of the virtuous cooperator. Each virtue should be encouraged in young children and developed by the individual until virtuous behavior becomes consistently characteristic of that person. Individual cooperators should be cognizant of the need to cooperate with one another to bring about collective virtuous activity at appropriate levels of communities to which they belong—family, neighborhood, municipality, county, state, federal and international, not remanding to the next collective level what can be accomplished on a more local level in keeping with the principle of subsidiarity.⁶⁸

Guided by the virtue of prudence, the virtuous cooperator will make informed decisions and act accordingly in relation to individuals of other species, the air, the land and bodies of water in their mutual interests of sustaining themselves, sustaining the dynamic functioning of the ecosystems of which they are parts, and maintaining the integrity of Earth. The virtuous cooperator will apply a stepwise process of discovering the best possible courses of action based on the data that are available, choosing one that is compatible with the well-being of all affected in the present and future, and enacting that decision cautiously when considering the circumstances and contingencies that could arise. The virtuous cooperator will be open to appropriating and applying the "precautionary principle" that was adopted at the United Nations Conference on Environment and Development in 1992 and calls upon governments to institute protective measures even when a definitive cause-effect relationship on a problem has not been identified.⁶⁹

The virtuous cooperator will be guided by the virtue of temperance to limit the use of other species and abiota to the

necessities of life, cognizant of their needs for flourishing as essential, interacting components of ecological systems. The virtuous cooperator will concurrently approach them as means through which God's presence can be experienced and God's character can be contemplated. From this sacramental perspective, the virtuous cooperator will encounter individuals of other species, their habitats, and vistas of land, sea and sky cautiously to avoid degrading their capacities to mediate God, endeavor to preserve species and ecological systems so they continue to mediate God's presence and character in the future, react with restraint when individuals of other species threaten the health, domicile and of humans, and work to enable the identification and implementation of rationales for relating to ecological systems and the larger biosphere so their harmonious functioning can reflect God's empowering character.

Informed by the natural sciences and particularly by evolutionary biology and ecology, virtuous cooperators will extend Aquinas's initial model to include a sub-virtue of temperance--humility (ST 2|2.161.1, 6) toward other-than-humans. Incorporating humility into a model of the human is essential to recognize that humans had their bodily possibilities begun in the furnaces of stars, emerged from and with other entities in the cosmological-biological continuum, and are radically dependent upon other types of animate and inanimate beings for their bodily wellbeing.

Guided by the virtue of justice, the virtuous cooperator will use the goods of Earth in ways that strive to assure their availability to meet the needs of other humans near and far, now and into the future. The needs of the most vulnerable and politically powerless will be met. Non-renewable sources will not be depleted by some at the expense of others. The functioning of natural systems will not be degraded or destroyed in order to avoid adverse effects on others in the present or future. Personal property will be managed in ways that make it possible to aid others who do not have sufficient goods with which to meet their needs in life.

The virtuous cooperator will also be open to extending Aquinas's notion of justice from acting justly toward other humans within the

human community to acting justly toward all biota, recognizing their needs for sustaining themselves within their habitats, and toward all components of ecosystems so their functioning is not disrupted by human activities. The virtuous cooperator will work with other virtuous cooperators at social, economic and political levels, following the principle of subsidiarity, to bring about justice for all species and ecological systems.

Finally, fortitude will guide the virtuous cooperator to be steadfastly prudent, temperate and just when relating to other species and ecological systems, despite fatigue, cynicism, failure to bring about immediate change, and social rebuffs when deviating from self-centered societal values. The virtuous cooperator will also be propelled to stand firm in opposing the loss of biodiversity, the degradation and destruction of ecosystems, and damage to the ozone layer due to fear of present and future consequences.

Identification of Religious Motivation

Because the motivation behind acting virtuously in this life is love for God and the desire to spend eternal happiness in God's presence, the virtuous cooperator meets the final criterion for modeling the human in our ecologically endangered age. Those who profess faith in God, believe in the promise of everlasting happiness with God, and want to gear their lives accordingly are offered a compelling model. Appropriated from Aquinas's works and extended to reflect contemporary scientific findings about the world, this model explains why humans should act prudently, justly and moderately with firm resolve. Modeling the human as a virtuous cooperator makes this ultimate reward explicit.

Moreover, this model of the human provides assurance that individuals will be able to become virtuous cooperators. In Aquinas's thinking, God offers humans the grace they need to develop the moral virtues until their aptness to act steadfastly with prudence, justice and moderation is habitual. God provides this supernatural aid out of love for humans and for the whole world that God loves with the highest kind of love. God's grace operates on humans to facilitate their resolve to live in ways that are geared ultimately toward their goal of

everlasting happiness in God's presence. The grace of God also cooperates with humans so that they use their capabilities to the fullest extent to develop virtuous behavior toward the more-than-human beings that constitute God's Earth.

Conclusions

Aquinas's teachings about cooperation and the chief moral virtues provide some basic components for constructing the virtuous cooperator as a model for the human that is needed during our ecologically endangered age. When appropriated within an evolutionary view of the world and informed by contemporary scientific findings, the virtuous cooperator meets the five criteria posited for modeling the human today. The virtuous cooperator is rooted in the Christian faith tradition with special significance for Roman Catholics and others who respect Thomas Aquinas's synthesis of Judeo-Christianity and Greek philosophy. The virtuous cooperator coheres with broad scientific findings about the physical world when acknowledging the cooperative interactions of diverse biota and abiota that constitute ecological systems, the food chain through which species feed hierarchically on one another to sustain themselves, and human place in the biological-cosmological continuum. The virtuous cooperator is positively relational to other species and physical systems by positing humans as integral actors within ecological systems, rather than over or apart from them, and by celebrating the unique human capacities to identify, reflect upon and choose to implement options for acting responsibly on other-than humans. The virtuous cooperator outlines the kind of human behavior that is helpful today by acting prudently through a stepwise process of making informed decisions, using other goods of Earth moderately for actual needs and for thinking about God, acting justly by considering the needs of other humans now and into the future and assuring that their needs are met within the context of achieving the common good of all beings, and remaining steadfast about living virtuously despite fears of social pressures and in light of fears of ecological destruction that will affect humans now or in the future. Finally, the virtuous cooperator stipulates the religious motivation for acting virtuously in relation to more-than-humans, a motivation that is no less than love for God and desire to spend eternity in God's presence.

While this model needs further refinement, especially to extend the notion of justice to more-than-human species, ecological systems and the biosphere, the virtuous cooperator warrants consideration among others that have been proffered. I welcome comparisons of the virtuous cooperator with the *imago Dei*, *homo faber*, "co-creator", "steward", and "created cocreator" models. I also encourage the retrieval of other models from the Christian tradition so all promising possibilities are available for the faithful to consider and embrace during our age of ecological degradation.

Notes

- ¹Among the most notable efforts to define *imago Dei* as recorded in Genesis 1 and to make the model meaningful and relevant for our ecological age are Hall's (1986) and Gunton's (1991: 47-61).
- ²Problems with the *homo faber* model in an age of technological abuse are identified perceptively by several scholars, including Teilhardian specialist Berry (1982) and moral theologian French (1990).
- ³On "co-creator" and "steward" models juxtaposed, see the United States Catholic Conference (1991) and Ashley (1985). For reactions to the co-creator model as appropriated by some authors from Pope John Paul II's early writings, the essays in Houck and Williams (1983) are helpful. Among the many explorations of the "steward" model, Hall's (1987, 1990) is especially well grounded and developed.
- ⁴Hefner (1993) developed this impressive model to distinguish human from divine activity.
- ⁵These criteria parallel roughly Barbour's (1997: 113 and 158-9) criteria for assessing scientific theories and expressions of religious faith and Rausch's (1993: 19-20) criteria for theological statements.
- ⁶See Polkinghorne's (1987: 56) synopsis.
- ⁷McFague (1993: 27) summarizes poignantly our "common creation story" with all beings: "At some level and in a remote or intimate way, everything is related to everything else. We are distant relatives to the stars and kissing cousins with the oceans, plants, and other creatures on the earth."
- ⁸For example, see *Summae Theologiae* (hereafter cited as ST) 1.47.2, 76.3, and *Summa Contra Gentiles* (hereafter SCG) 2.68 and 3.71. Aquinas reasoned from his faith perspective that God created and ordered the many diverse, essential and valuable types of beings to one another because they are ordered ultimately to God, an arrangement that he described in *De Veritatis* (hereafter DV) 5.1 and 3 as a two-fold order

of beings. Also see *De Potentia* (hereafter DP) 3.7.9, ST 1.21.1, SCG 3.112, *Compendium Theologiae* (hereafter CT) 148, and Wright's (1957: 30-113) insightful exploration.

⁹The *Index Thomisticus* identifies 286 entries of these usages of *cooperator*: 20 regarding the cooperation of creatures; 106 on their cooperation with God; 45 in which humans cooperate freely with God or God's grace; and, 115 on divine grace operating on humans and cooperating with human actions.

¹⁰See, for example, ST 1.61.3, 111.2, 1|2.9.1 and 19.10, DV 9.2 and 27.5, CT 124, and SCG 1.70, 3.21 and 69-70.

¹¹When God works through secondary causal agents, Aquinas taught in ST 1.105.5, for example, the innate efficacy of their causal powers is left absolutely intact. God's activity in them does not displace or obviate their actions; it sustains and guides their actions lovingly toward their ultimate end. Aquinas perceived God's employing secondary causes to govern other creatures as a way of communicating the dignity of causality to creatures as indicated, for example, in ST 1.23.8 and explained by Gilson (1956: 184). In SCG 3.21, Aquinas cites (pseudo) Dionysius and 1 Cor 3.9 to support his thinking that creatures operating on others according to the innate characteristics given to them by God are *Dei cooperatorem*.

¹²For example, see DV 27.5. Also see ST 1.105.4-5 for Aquinas's understanding of God's will acting on rational creatures.

¹³According to Aquinas in DV 24.11 and 27.5, God offers grace to humans to enable their cooperation with God's intention that they seek the temporal good in this life while aiming for eternal happiness.

¹⁴Also see SCG 2.68 where Aquinas graded creatures according to their operations or capacities for acting, beginning with inanimate elements followed by mixed bodies, and the animate souls of plants, irrational animals, and rational animals. In ST 1.48.2, he graded creatures according to their incorruptible to corruptible properties as heavenly bodies, angels, humans, animals, plants, minerals and mixed bodies, and the primary elements; see also ST Supp. 91.5 and SCG 3.71. Occasionally he described them metaphorically as a ladder of forms (e.g., SCG 2.68).

¹⁵Blanchette (1992: 256) recognizes in Aquinas's work an order of instrumentality among corporeal beings. However, Aquinas's thinking seems more expansive and inclusive of the totality of reality since he also considered God's providential actions as somewhat instrumental when moving beings toward their end in God (e.g., SCG 3.100 and DP 3.7, 5.9) and humans' using one another (e.g., SCG 3.128, ST 1.96.4 and 2|2.47.10). See Weisheipl (1974: 206).

- ¹⁶In SCG 2.39 and 44, Aquinas described this orderly arrangement as the greatest good of the universe, in ST 1.15.2 as its highest good, in SCG 2.45 and CT 102 as the ultimate and noblest perfection, and in SCG 3.71 as the highest beauty. Wright (1957: 87) summarizes Aquinas's thinking about the universe as "God's masterpiece". Also see Blanchette's (1992) indispensable philosophical analysis of Aquinas's thinking about the perfection of the universe.
- ¹⁷The common good of the universe is its integrity, which results from the order and composition of all its parts, Aquinas explained in SCG 3.94; see further DP 1.6.1 and ST 1.115.3.
- ¹⁸For example, see SCG 1.85, DP 1.6.1 and ST 1.103.7.
- ¹⁹As Copleston (1955: 142) explained, Aquinas believed that every finite entity depends existentially on God at every moment of its existence; if the divine conserving or sustaining activity were withdrawn, it would immediately cease to exist.
- ²⁰For example, see Aquinas's discussions in ST 1.105.5, SCG 3.67 and DP 3.7.
- ²¹For example, see ST 1.44.3-4 and 47.1 and SCG 3.16-20. For his understanding of God's primary activity and creatures secondary causality, see SCG 3.17, CT 103 and 123-124. In SCG 3.69, he described the actions of secondary agents as a likeness to God who communicates goodness to creatures, and he taught in CT 124, for example, that goodness proliferates in the universe when the more richly endowed creature cooperates to procure the good of many.
- ²²Aquinas taught in ST 1.61.3, SCG 1.70 and 3.69 that the interactions of creatures in the orderly universe benefit the entire universe.
- ²³For example, see ST 1.65.2 and SCG 2.45.
- ²⁴For example, see ST 1.47.1, SCG 2.45, and DP 3.16.
- ²⁵For example, see ST 1|2.3.6-8 and 1|2.180.4. See further SCG 4.55 on Aquinas's teachings that the ultimate end of humans is their eternal union with God, a union that is enabled by God's incarnation, death and resurrection in the person of Jesus the Christ.
- ²⁶For example, see CT 74, 127 and 148, SCG 3.7 and 111-12, and ST 1.96.1.
- ²⁷For example, see SCG 1.92, 3.17-25 and 145, ST 2|2.118.1 and CT 173.
- ²⁸Also see ST 1|2.4.6-7, 114.10, 2|2.76.2, 83.6 and 118.1, SCG 3.22, and CT 173.
- ²⁹Aquinas considered the human use of other creatures for the necessities of life and knowing God as an exercise of natural dominion; see, for example, ST 2|2.66.1-2, CT 74, 127 and 148, SCG 3.78 and 111-112. In ST 2|2.66.1, he insisted that God retains absolute dominion over both users and used.
- ³⁰See also ST Supp. 91.1, 2|2.64.1 and 83.6, and SCG 3.22, 121, 129 and 131. The prescription that humans are intended to use only what is

needed to sustain human life and not what is *desired* beyond the necessities of life resounds throughout his works.

³¹Also see ST 2|2.83.6, 118.1 and 141.6.

³²For his understanding of the appropriate use of things by humans, see SCG 3.129. Some uses for the necessities of life are naturally fitting, he taught, whereas as immoderate uses are naturally unfitting in the scheme of the integrity of the universe and, ultimately, in the human quest for God.

³³See further ST 2|2.83.6 and SCG 4.83.

³⁴The sacramental quality of the world was explored frequently in patristic and medieval theological discourse as indicated by Schaefer (2001: 37-90).

³⁵For example, see SCG 4.1, 3.47, ST 1.65.1 and 2|2.180.4.

³⁶See further ST 2|2.180.4 and Supp. 91.1.

³⁷See further ST 1|2.77.4 and 87.3, SCG 3.6 and 9, DP 3.6, and DV 24.11.

³⁸Also see ST 1|2.19.10 and 87.3, SCG 3.6 and 9, *De malo* (hereafter DM) 1.1, and DP 3.6.

³⁹Also see SCG 3.94, DP 1.6.1, and ST 1.115.3.

⁴⁰See *De Caritate* (hereafter DC) 7 where Aquinas taught that God loves the orderly universe through which all creatures are ordered ultimately to God more than God loves the human or any other type of creature. In SCG 3.64, he explained that, among created beings, God cares most for the order of things established in relation to one another to constitute the universe.

⁴¹Also see SCG 3.112-13 and DV 1.5.6-7. According to Aquinas, God's special care is needed for individual humans who have the capacity to think about how to act and to choose to act, capacities that humans often misuse. This special divine care for individual humans contrasts with God's general care for other species because they do not have intellectual capabilities or free will with which to deviate from God's intentions. God's care for individual humans and other species should be considered in relation to Aquinas's teaching in SCG 3.64 that among God's creation God cares most for the order of all things that constitute the universe.

⁴²This follows his rationale that God governs all things to their end through God's eternal law, which God imposed on the universe in the form of natural law; see, for example, ST 1|2.91.1, 93.1-5, and DV 5.1.6. On his thinking about rational creatures who are ruled by eternal law and are rulers of themselves to whom God gives grace to seek their ultimate end, see ST 1|2.109.1 and SCG 3.1.

⁴³See, for example, ST 1.111.2 and DV 27.5.

⁴⁴Also see ST 1|2.55.1-3 and 56.4.

⁴⁵For Aquinas's understanding of the theological virtue of love *ex caritate* as motivating the moral virtues, see, for example, ST 2|2.23-23025 and DC 3 and 7.

⁴⁶Also see ST 1|2.50.3 and 63.1.

⁴⁷Also see ST 1|2.55.1-3.

⁴⁸See his discussion in ST 1|2.68.3-4 on the gifts of the Holy Spirit as habits whereby the human is perfected to obey the Holy Spirit readily in comparison with the moral virtues that dispose the human to obey what reason dictates.

⁴⁹On the role of the virtues in relation to informed decision-making, see ST 1|2.58.3, 62.1, 64.1, 66.3, 68.8, 100.1, 2|2.47.6 and 161.5.

⁵⁰Also see ST 1|2.58.4 and 2|2.47.7.

⁵¹Also see ST 1|2.57.4-6, 2|2.47.2 and 8.

⁵²Also see ST 2|2.47.1-2 and 8.

⁵³Also see ST 1.22.1 where Aquinas discussed God's providence as prudence by ordering all things in the universe to their ends which serves to underscore the need for humans to reason correctly by ordering all their actions toward their ultimate end in God.

⁵⁴Also see ST 2|2.47.9 and 1|2.57.6.

⁵⁵Any person who has the ability to reason is competent to have prudence in proportion to the person's rationality, he explained in ST 2|2.47.12.

⁵⁶This does not mean that Aquinas thought that the passions are evil. As stipulated in ST 2|2.141.6, they are good aspects of being human so long as they are controlled by the dictates of reason. See further ST 2|2.141.1-5.

⁵⁷See SCG 3.132-133, ST 2|2.184.3-4, 7 and 186.3. Aquinas chose poverty as a way of life when joining the fledgling Dominican Order of Preachers and leaving behind his family's relatively wealthy lifestyle, as Weisheipl (1974: 131) explained.

⁵⁸See, for example, SCG 3.64.

⁵⁹See also SCG 3.24 where he explains that the more perfect something is in its capabilities to act, the more it desires and acts for the common good. Creatures that are incapable of making informed decisions tend to seek their own individual good whereas the more perfect act for the good of their species, the even more perfect act for the good of their genus, and God, the most perfect, who acts for the good of the entire created world.

⁶⁰See further ST 2|2.123.11, 141.3, and 1|2.61.4.

⁶¹For example, see John Paul II (1991: #59).

⁶²See also John Paul II (1987: #34) and (1989: #7-9). The Pope frames his concerns in the interests of human persons now and into the future and considers human labor as a participation in God's creative activity (1991: #32 and 37; 1981: #25), which led some scholars to

characterize his model of the human person as a "co-creator". For a constructive response to the Pope's critics, see Vacek, (1990: 81-107).

⁶³See Vacek (1990: 81-107), essays in Houck and Williams (1983), and Pawlikowski (1998: 8-11).

⁶⁴See O'Neill et al. (1986: 30), King (1993: 19-46), and Allen and Starr (1982).

⁶⁵As Aquinas taught in ST 1.1.1 and scholars working in the burgeoning field of religion and science contend today, theology and the natural sciences do not conflict when they are practiced according to their distinct data, methods, purviews and limitations. Together they provide a more comprehensive understanding of issues at their boundaries that neither can address exclusively. See Barbour (1997: 77-98), Haught (1994: 9-26), and John Paul II (1988).

⁶⁶At the time of writing, texts are not yet available from the conference on sustainability sponsored by the United Nations and held in Johannesburg, South Africa in late August to early September 2002 to check progress made since the UN Conference on Environment and Development (1993) held in Rio de Janeiro, Brazil in June 1992 during which agreements were negotiated and enumerated under Agenda 21. An earlier international endeavor to define the term "sustainability" is the United Nations World Commission on Environment and Development (1987).

⁶⁷Conversely, the "steward" model suggests the need for humans to manage or take care of other species and ecological systems.

⁶⁸Leys (1995) provides an overview of the historical development of the principle of subsidiarity. Verstraeten (1998) explores this principle in relation to the notion of solidarity.

⁶⁹See essays in Raffensperger and Tickner (1999).

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