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SAINT AUGUSTINE ON CONJUGAL LOVE AND DIVINE LOVE

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NO PATRISTIC THEOLOGIAN has had a greater impact on Western Christianity than St. Augustine of Hippo. Wherever one goes in Western Christian intellectual tradition Augustine has been there already and has often laid the foundations for further reflection on the topics he addressed. One facet of St. Augustine's wide-ranging thought that has proved to be foundational for Western Christianity is his theology of marriage and sexuality. David Hunter has aptly written, "No Christian writer has exerted greater influence on the development of the Western theology of marriage than Augustine."[1]

The popular view is that Augustine has bequeathed to Western Christianity a highly negative view of conjugal life. Much modern scholarship has criticized Augustine for a supposed negative view of human sexuality and consequently a deficient view of marriage and marital love.[2] Several scholars have accused Augustine of

[1] David Hunter, "Augustine and the Making of Marriage in Roman North Africa," *Journal of Early Christian Studies* 11.1 (2003): 64.

[2] Examples include: David F. Kelly, "Sexuality and Concupiscence in Augustine," in *The Annual of the Society of Christian Ethics,* ed. Larry L. Rasmussen (Waterloo, Ontario, Canada: Council on Study of Religion, 1983), 81-116; David M. Thomas, *Christian Marriage: A Journey Together,* Messages of the Sacraments 5, ed. Monika K. Hellwig (Collegeville, Minn.: The Liturgical Press, 1983), 55; James A. Brundage, *Law, Sex, and Christian Society in Medieval Europe* (Chicago: University of Chicago Press, 1987), 80-82; John Mahoney, *The Making of Moral Theology* (Oxford: Clarendon Press, 1987), 45; Paul Ramsey, "Human Sexuality in the History of Redemption," in *The Ethics of St. Augustine,* ed. William S. Babcock, Journal of Religious Ethics Studies in Religion 3 (Atlanta: Scholars Press, 1991),

being opposed to sexual attraction, sexual intercourse, and sexual pleasure.[3] Some claim that his view of sexuality may even have been tainted with latent Manichaeism.[4] Others have accused him of maintaining a functionalist view of sexual intercourse according to which the conjugal act is legitimated only by procreation and has no value as an expression of love between the spouses.[5]

However, a number of scholars have pointed out positive aspects of Augustine's theology of marriage.[6] In particular, several

115-45.

[3] John T. Noonan, in his celebrated book *Contraception: A History of Its Treatment by the Catholic Theologians and Canonists* (Cambridge, Mass.: Harvard University Press, 1965), said that Augustine's understanding of marriage possesses Manichean and Stoic influences (166). Andrew Greeley has said that married couples in Western Christianity and especially in Roman Catholicism are living in the shadow of St. Augustine's negative view of sexuality ("Sex and the Married Catholic: The Shadow of St. Augustine," *America* 167 [1992]: 318). Theodore Mackin maintains that despite what Augustine claimed, for him "intercourse itself was sinful" ("Augustine on the Nature of Marriage," in *Sexuality, Marriage, and the Family: Readings in the Catholic Tradition,* ed. Paulinus Ikechukwu Odozor [Notre Dame: University of Notre Dame Press, 2001], 173). Uta Ranke-Heinemann has leveled one of the most virulent attacks on St. Augustine's view of marriage and sexuality in her book *Eunuchs for the Kingdom of Heaven: Women, Sexuality, and the Catholic Church* (New York: Penguin Books, 1991). She calls Augustine's conversion "a disaster for married people" (78), and says that Augustine was "the man who fused Christianity together with hatred of sex and pleasure into a systematic unity" (75).

[4] For examples of this critique see Bernard Häring, *Free and Faithful in Christ,* vol. 1 (1979), 512-14; Thomas C. Fox, *Sexuality and Catholicism* (New York: G. Braziller, 1995), 22; Vincent J. Genovesi, *In Pursuit of Love: Catholic Morality and Human Sexuality* (Collegeville, Minn.: The Liturgical Press, 1996), 116-18.

[5] Eric Fuchs has contended that "although he was more sensitive than others to the social dimensions of the couple, [Augustine] was unable to conceive of the possibility that sexuality could hold tenderness, friendship, spirituality, and this lack of insight was very influential on the later tradition" (*Sexual Desire and Love: Origins and History of the Christian Ethic of Sexuality and Marriage,* trans. Marsha Daigle [Cambridge: James Clarke & Co., 1983], 117). Theodore Mackin contends that Augustine left no middle ground between conception and capitulation to sexual lust for couples to engage in sexual intercourse as an expression of intimacy ("Augustine on the Nature of Marriage," 172). John T. Noonan maintains that Augustine saw procreation as the purpose of marriage (*Contraception,* 151) and that he saw "selfless love" as having a very small part in marriage (152). Uta Ranke-Heinemann holds that for Augustine "intercourse is a culpable act and needs justification: a child" (41), and she goes on to call Augustine a neurotic who "radically separates love and sexuality" (*Eunuchs for the Kingdom of Heaven,* 76).

[6] Examples of this scholarship include: Émile Schmitt, *Le mariage chrétien dans l'oeuvre de Saint Augustin. Une théologie baptismale de la vie conjugale* (Paris: Études Augustiniennes, 1983); Augustine Regan, "The Perennial Value of Augustine's Theology of the Goods of

have noted the importance of friendship and love in Augustine's theology of marriage,[7] highlighting a more personalist dimension of his thought on marriage than he is often given credit for. Building on this scholarship, I have argued that the three goods of marriage that Augustine delineated (procreation, fidelity, and the sacrament) are inseparable aspects of marital love that present us with at least a limited analog to the love of the Trinity.[8] I have also argued that Augustine's writings on marriage should be read in light of his Trinitarian theology, in which we find some of his most deeply held theological convictions.[9] In the present article, I wish to show how Augustine's theology of the Trinity provides a means for elaborating his vision of conjugal love, since for Augustine the life of the Trinity is the source of all true love, including the love between spouses.

Marriage," *Studia Moralia* 21 (1983): 351-78; John R. Connery, "The Role of Love in Christian Marriage: A Historical Overview," *Communio* 11 (1984): 244-57; Cormac Burke, "St. Augustine and Conjugal Sexuality," *Communio* 17 (1990): 545-65; Donald Burt, "Friendship and Subordination in Earthly Societies," *Augustinian Studies* 22 (1991): 83-124; Robert J. O'Connell, "Sexuality in Saint Augustine," in *Augustine Today,* Encounter Series 16 (Grand Rapids, Mich.: Eerdmans, 1993), 60-87; David G. Hunter, "Augustinian Pessimism? A New Look at Augustine's Teaching on Sex, Marriage and Celibacy," *Augustinian Studies* 25 (1994): 153-77; Carol Harrison, "Marriage and Monasticism in St. Augustine: The Bond of Friendship," *Studia Patristica* 33 (1997): 94-99; Willemien Otten, "Augustine on Marriage, Monasticism, and the Community of the Church," *Theological Studies* 59 (1998): 385-405; Mathijs Lamberigts, "A Critical Evaluation of Critiques of Augustine's View of Sexuality," in *Augustine and His Critics,* ed. Robert Dodaro and George Lawless (New York: Routledge, 1999), 176-97.

[7] Donald Burt, *Friendship and Society: An Introduction to Augustine's Practical Philosophy* (Grand Rapids, Mich.: Eerdmans, 1999), 83; ibid., "Friendship and Subordination in Earthly Societies," 83, 95; Connery, "The Role of Love in Christian Marriage," 245; Hunter, "Augustinian Pessimism?", 160; Otten, "Augustine on Marriage, Monasticism, and the Community of the Church," 398, 404.

[8] Perry J. Cahall, "The Trinitarian Structure of St. Augustine's Good of Marriage," *Augustinian Studies* 34:2 (2003): 223-32.

[9] Perry J. Cahall, "Saint Augustine on Marriage and the Trinity," *Josephinum Journal of Theology* 11.1 (Winter/Spring 2004): 82-97. Denis Faul suggested such a contextualization of Augustine's theology of marriage some thirty-seven years ago when he said that Augustine's theology of marriage and sexuality should be viewed in light of his deepest theological insights, including those regarding the Trinity, creation, the image of God in the human person, and humanity before the fall ("Saint Augustine on Marriage: Recent Views and a Critique," *Augustinus* 12 [1967]: 166).

I maintain that Augustine articulates sound principles and perennial insights for understanding and living out the mystery of married love in all its facets. Furthermore, I believe that a contextualized reading of Augustine's works on marriage shows us that spouses are called in their conjugal love to participate in the divine order of love. An indispensable part of this context is his Trinitarian theology. Although Augustine himself did not draw an explicit link between his theology of the Trinity and his theology of marriage,[10] we can allow these different strands of Augustine's thought to inform each other, and thus arrive at a more complete picture of conjugal love. In particular, implied and in many ways assumed in Augustine's writings is a vision of conjugal love that is nourished by and participates in the mystery of Trinitarian love. This vision applies to all areas of conjugal life, including the spouses' conjugal embrace. Thus, Augustine shows modern man that sex is for more than mere pleasure. The conjugal embrace is called to participate in divine love.

I. AUGUSTINE ON SEXUAL DESIRE

In order to understand God's design for sex and marriage, Augustine referred to man's prelapsarian state as outlined in the Book of Genesis. Augustine held that before the Fall all human passions and emotions would have been ordered according to the ordinance of reason and would have been subject to the control of the will. Adam and Eve would have experienced sexual desire as completely subject to the control of their reason and will.[11]

[10] That Augustine did not draw this connection explicitly should not be surprising, since he was not a systematician in the modern sense of the word and since most of his writings, including his writings on marriage, are produced in response to specific controversies and questions. Nonetheless, there is a consistency in his thinking that is the result of certain core theological principles. Peter Brown, in one of the appendices to the new edition of his celebrated biography of St. Augustine, admits that Augustine's thought is more "of a piece" than he had once thought (Peter Brown, *Augustine of Hippo: A Biography* [2d ed.; Berkeley: University of California Press, 2000], 490).

[11] *De civitate Dei* 14.23 (written around 418/419) ; *De Genesi ad litteram* 9.3-4;10 (begun around 401 and completed around 415); *De gratia Christi et de peccato originali* 2.35.40 (written in 418); *De nuptiis et concupiscentia* 2.7.17; 2.22.37; 2.31.53 (written around 419-21); *Contra Iulianum opus imperfectum* 5.16 (written around 429/430 and left unfinished at

Peter Brown says that, according to Augustine, "In Adam and Eve's first state, sexual desire was not absent, but it coincided perfectly with the conscious will: it would have introduced no disruptive element into the clear serenity of their marriage."[12] Augustine saw that this condition changed radically after the Fall: a comparison of Genesis 2:25 and Genesis 3:7 shows that Adam and Eve only experienced shame at their nakedness after the Fall.[13]

It is crucial to realize that Augustine maintained that in our present fallen state our passions tend towards disorder as an effect of original sin—a sin which he did *not* see as having been motivated by sexual attraction.[14] The first sin of humanity was an act of disobedience to God, and as a result of it men's and women's desires no longer obey them without effort. Rupturing the original order of God's creation has resulted in an interior disorder for man.[15] Augustine saw sexual lust as a prime example of the disorder present in humanity's postlapsarian desires,[16] evidence of the fact that when Adam and Eve ceased fully to obey God's will out of love their desires ceased fully to obey their own wills.[17] It is for this reason that Augustine refused to give unqualified praise to sexuality as humanity now experiences it.[18]

the time of Augustine's death). All dates for Augustine's works are taken from *Augustine through the Ages: An Encyclopedia,* ed. Allan D. Fitzgerald (Grand Rapids, Mich. : Eerdmans, 1999).

[12] Peter Brown, *The Body and Society: Men, Women, and Sexual Renunciation in Early Christianity* (New York: Columbia University Press, 1988), 402-3.

[13] *De civitate Dei* 13.13; 14.17; *De Genesi ad litteram* 9.10.16; *De gratia Christi et de peccato originali* 2.36.41; *De nuptiis et concupiscentia* 1.6.7; *Contra duas epistulas pelagianorum* 1.16.32 (written in 421); *Contra Iulianum* 4.16.82 (written in 421/422); *Contra Iulianum opus imperfectum* 3.74; 4.36.

[14] See *De Genesi ad litteram* 11.41.57; *Contra Iulianum* 6.22.68.

[15] See Mathijs Lamberigts, "Julien d'Eclane et Augustin d'Hippone: Deux conceptions d'Adam," trans. J. van Houtem, in *Collectanea Augustiniana. Mélanges T. J. Van Bavel,* ed. B. Bruning, M. Lamberigts, and J. van Houtem, Bibliotheca Ephemeridum Theologicarum Lovaniensium 92, vol. 1 (Leuven: Leuven University Press, 1990), 404-5.

[16] Ibid., 405.

[17] Peter Brown, "Augustine and Sexuality," in *Augustine and Sexuality: Protocol of the 46th Colloquy* (Berkeley: Center for Hermeneutical Studies in Hellenistic and Modern Culture, 1983), 10.

[18] Robert Innes, "Integrating the Self through the Desire of God," *Augustinian Studies* 28.1 (1997): 76.

In discussing the state of fallen humanity Augustine wrote at length about different forms of desire or concupiscence,[19] among which he included carnal concupiscence (*concupiscentia carnis*). The idea of carnal concupiscence, or desire of the flesh, comes from Galatians 5:17, where St. Paul speaks of the flesh lusting against the spirit. Augustine used this term to refer to the tendency of all our sensitive appetites, including sexual desire, to escape the control of reason.[20] In his disputes with his Pelagian adversary, Julian of Eclanum, Augustine took great pains to distinguish between carnal concupiscence that consists of a disordered desire for any sensual pleasure (including sexual lust) and sexuality as such with its attendant pleasure: "You do not know, or pretend not to know that the quality, the usefulness, and the

[19] For a good, brief discussion of different kinds of concupiscence that Augustine posits see Mathijs Lamberigts, "Augustine, Julian of Aeclanum and E. Pagels' *Adam, Eve, and the Serpent*," *Augustiniana* 39 (1989): 407-13, See also James B. Weidenaar, "Augustine's Theory of Concupiscence in *City of God, Book XIV*," *Calvin Theological Journal* 30 (1995): 52-74; Weidenaar also provides a good discussion of the distinctions Augustine makes when speaking about concupiscence (although his discussion differs somewhat from that of Lamberigts). Weidenaar makes the valuable observation: "We must first keep in mind that Augustine's primary goal in formulating most of his thoughts about concupiscence . . . was *not* to provide a Christian ethic of sex. He wrote in a context in which the Pelagian ideas about free will and sin seemed to be undermining the importance of the need for grace" (67-68). A more extended discussion of Augustine's concept of concupiscence and the evolution of his understanding of it can be found in François-Joseph Thonnard, "La notion de concupiscence en philosophie augustinienne," *Recherches Augustiniennes* 3 (1965): 59-105; and Émile Schmitt, *Le mariage chrétien dans l'oeuvre de Saint Augustin. Une théologie baptismale de la vie conjugale* (Paris: Études Augustiniennes, 1983), 96-105. A very helpful work that deals with Augustine's concept of concupiscence and the different types of concupiscence that he delineates is Jon T. Beane, "The Development of the Notion of Concupiscence in Saint Augustine" (Ph.D. diss., University of Notre Dame, 1993).

[20] *Contra Iulianum* 4.14.74; See *Contra Iulianum* 4.13, 14 where Augustine addresses carnal concupiscence at length. See M. Lamberigts, "Some Critiques on Augustine's View of Sexuality Revisited," *Studia Patristica* 33 (1997): 156. Lamberigts has focused specifically on reevaluating the debate between Augustine and Julian of Eclanum over the concept of the concupiscence of the flesh (*concupiscentia carnis*). See also Lamberigts, "A Critical Evaluation of Critiques of Augustine's View of Sexuality," 176-97. Another article that lends support to Lamberigts's insights is G. I. Bonner, "*Libido* and *Concupiscentia* in St. Augustine," *Studia Patristica* 6 (1962): 303-14. See also John Rist, "Appendix 3: Augustine and Julian: Aspects of the Debate about Sexual *concupiscentia*," in *Augustine: Ancient Thought Baptized* (Cambridge: Cambridge University Press, 1994). For a good discussion of the differing views of Augustine and Julian regarding the original state of human existence see also Lamberigts, "Julien d'Eclane et Augustin d'Hippone: deux conceptions d'Adam."

necessity of sensation through a sense of the body are not the same as lust [*libidinem*] for this sensation."[21] He clearly distinguishes between sensual pleasure and carnal concupiscence (*carnis concupiscentiam*) that includes sexual lust when he says that "pleasure can also be honest . . . it is concupiscence of the flesh or lust [*libidinem*] which is shameful."[22] This statement alone is enough to show that Augustine did not have an inherent bias against sexual pleasure. It is true that he commented little on how this pleasure contributes to or factors into a couple's relationship, but this is a modern preoccupation that Augustine should not be faulted for failing to address.

Julian of Eclanum tended to equate carnal concupiscence, sexual lust, and sensual pleasure, and therefore he refused to admit that carnal concupiscence and sexual lust were results of the Fall. Instead, Julian maintained that carnal concupiscence was necessary in order for procreation to take place and thus held that it is a naturally good part of the human condition.[23] In contrast to Julian, Augustine notes that in this life sexual intercourse is never completely free of the disordered effects of carnal concupiscence.[24] It is this insight—that human sexual desire is now such that it resists the control of reason and will—that causes many modern theologians and others to revile Augustine.

On this point Augustine can be faulted for not properly distinguishing between an act *directed by* reason and an act performed *according to* reason.[25] Saint Thomas Aquinas would

[21] Augustine, *Against Julian* [*Contra Julianum*], trans. Matthew A. Schumacher, Fathers of the Church 35 (Washington, D.C.: The Catholic University of America Press,1957), 4.14.65 (PL 44:769-770). See also *Contra Iulianum opus imperfectum* 4.69.

[22] Augustine, *De nuptiis et concupiscentia* 2.9.22 (CSEL 42:274): "potest uoluptas et honesta esse . . . carnis concupiscentiam uel libidem, quae pudenda est" (translation mine). I think Roland Teske's translation of this passage is imprecise, which reads: "pleasure can also be morally good . . . concupiscence of the flesh or sexual passion . . . is something to be ashamed of" (*Marriage and Desire,* Works of Saint Augustine 1/24 [New York: New City Press, 1998], 2.9.22]. I believe "lust" rather than "sexual passion" is a more accurate rendering of *libidem.*

[23] *Contra Iulianum* 4.3.21; 4.14.65.

[24] *De nuptiis et concupiscentia* 2.32.54; *Contra Iulianum* 3.21.43; 5.9.37, 39.

[25] Laura L. Garcia provides an excellent discussion of this distinction in "Christians and the Joy of Sex," *The National Catholic Bioethics Quarterly* 3:2 (Summer 2003): 259-61.

later make such a distinction, pointing out that certain acts, like sleeping, although they are not directed by reason at every moment can be entered into according to reason.[26] This same distinction would apply to the act of sexual intercourse, which although subject to emotional and physical reactions and responses that are not directed by reason can still be undertaken according to reason. However, even though Augustine failed to make this distinction, surely his insight regarding the tendency of fallen sexual desire to resist the control of reason and will deserves to be acknowledged. Such an acknowledgment could go a long way to cultivating a more realistic view of sex in a day and age that is obsessed with sex, encourages satisfying any and all sexual desires, and manufactures unrealistic expectations surrounding the satisfaction of these desires.

II. A Good Concupiscence of Marriage and Sexual Intercourse

While Augustine wrote more frequently about negative forms of concupiscence, toward the end of his life, in his debates with Julian of Eclanum, he also posited several types of positive concupiscible desire, such as a natural desire for spiritual goods (*concupiscentia spiritus*),[27] including the goods of wisdom (*concupiscentia sapientiae*)[28] and happiness (*concupiscentia beatitudinis*).[29] He even allowed for the possibility that a good type of carnal concupiscence or desire of the flesh could have existed in paradise, one that would have followed the dictates of the wills of the first spouses.[30] He also spoke of a good

[26] Ibid.; See *Summa Theologiae* II-II, q. 153, a. 2.

[27] *Contra Iulianum* 4.14.72; *De nuptiis et concupiscentia* 2.30.52. Lamberigts has said that the essence of good concupiscence for Augustine is "a longing for God's gift of love" ("Some Critiques on Augustine's View of Sexuality Revisited," 157).

[28] *Contra Iulianum* 4.3.17; *De nuptiis et concupiscentia* 2.10.23; 2.30.52.

[29] *Contra Iulianum opus imperfectum* 4.67; See also *Contra duas epistolas Pelagianorum* 2.8.17; 2.9.21 where Augustine references a desire for good things (*cupiditas boni*).

[30] *Contra Iulianum* 5.5.22; *Contra Iulianum opus imperfectum* 2.42.45; 3.177; 5.13.16; 6.14.22.

concupiscence (*bona concupiscentia*) in marriage that sublimates the desire for sensual pleasure to the desire for offspring.[31]

In *Epistula* 6*, a letter from late in his life, Augustine posits the possibility of a good carnal concupiscence:

> Therefore this concupiscence of the flesh, if it existed in paradise so that by means of it children were begotten to fulfill the blessing of marriage by the multiplication of human beings, was not the same kind of carnal concupiscence we experience now, when its movements covet indifferently what is licit and illicit. . . . But if concupiscence had existed in paradise, it would have to be of a different type, in which the flesh would never have lusted against the spirit [Gal 5:17].[32]

In this same letter Augustine speaks of a "concupiscence of marriage" (*concupiscentia nuptiarum*) that would have existed in paradise to maintain the peaceful love of the spouses.[33] Regarding this concupiscence of marriage Augustine writes, "What Catholic would call the carnal desire present in marriage [*concupiscentiam nuptiarum*] the work of the devil, since by means of it the human race would have been propagated even if no one had sinned."[34] He goes on to distinguish several aspects of this concupiscence of marriage:

> Because of this error they [the Pelagians] do not distinguish the concupiscence associated with marriage, i.e. the concupiscence of conjugal purity, concupiscence for the legitimate engendering of children, or the concupiscence of the social bond by which each sex is tied to the other, from the concupiscence of the flesh which hankers after the illicit as well as the licit indifferently and through the concupiscence of marriage which uses it well is restrained from the illicit and permitted only the licit.[35]

What is significant about this passage is that each aspect of the marital concupiscence that Augustine is delineating represents a desire for one of the goods of marriage that he distinguished:

[31] *Contra Iulianum* 5.16.63; 6.16.50.

[32] *Letter [Epistula] 6**, trans. Robert B. Eno, Fathers of the Church 81 (Washington, D.C.: The Catholic University of America Press, 1989), 8 (CSEL 88:38) (written around 420)

[33] Ibid.,7 (CSEL 88:36).

[34] Ibid., 3 (CSEL 88:33).

[35] Ibid.,5 (CSEL 88:34).

offspring (*proles*), fidelity (*fides*), and the sacrament (*sacramentum*).[36] The "concupiscence of conjugal purity" appears to represent the good of fidelity by signifying a desire for exclusive union in which each spouse supports the other, body and soul. The "concupiscence for the legitimate engendering of children" is obviously a reference to the good of procreation. Finally, the "concupiscence of the social bond by which each sex is tied to the other" would seem to be a reference to the desire for the indissoluble sacramental bond of marriage which binds the spouses together and provides the basis for society.

It is significant that Augustine sees each of these three desires as constitutive of the desire for marriage ("the concupiscence associated with marriage"). He illustrates that the three goods of marriage are really not separable goods, but are instead together the triune good that is marriage.[37] To desire marriage means to desire its triune good with this threefold concupiscence of marriage. One who desires marriage cannot separate any of the three goods from marriage. To attempt to do so would be to desire something other than marriage.

Further, it is noteworthy that the threefold desire for marriage that Augustine proposes in *Epistula 6** can be seen to refer simultaneously to the desire for sexual intercourse. Regarding the passage from this letter quoted above, Donald Burt posited, "In all of these cases 'concupiscence' represents the desires of a spirit in a body and in at least two of them (the desire for procreation and the desire for union of the spouses) it involves a sexual desire which clearly is not disreputable."[38] I would go further to say that

[36] Émile Schmitt, *Le mariage chrétien dans l'oeuvre de Saint Augustin. Une théologie baptismale de la vie conjugale* (Paris: Études Augustiniennes, 1983), 232-33, provides a chronological listing of Augustine's works in which he refers to the three goods of marriage: *De bono coniugali* 3.3-7.7; 24.32 (written in 401); *De sancta virginitate* 12.12 (written in 401 as a companion piece to *De bono coniugali*); *De Genesi ad litteram* 9.7.12; *De bono viduitatis* 4.5 (written in 414); *De gratia Christi et de peccato originali* 2.34.39; 37.42; *De nuptiis et concupiscentia* 1.10.11; 1.11.13; 1.17.19; 1.21.23; *Contra Iulianum* 2.7.20; 3.16.30; 3.25.57; 5.12.46.

[37] On this point see Cahall, "The Trinitarian Structure of St. Augustine's Good of Marriage," 229-32.

[38] Burt, *Friendship and Society*, 114.

all three aspects of this desire for marriage can be seen as referring to sexual desire if one sees the "concupiscence of conjugal purity" as referring to the upright desire for sexual union wherein the spouses render faithfully to each other, and to no one else, the conjugal debt according to the virtue of chastity.[39]

III. The Conjugal Embrace at the Service of Conjugal Love

It should not go unnoticed that, by delineating a threefold concupiscence of marriage that simultaneously refers to the three goods of marriage *and* the desire for sexual intercourse, Augustine places sexual relations within the context of the triune good of marriage. The logic of Augustine's thought suggests that sexual intercourse and sexual desire must simultaneously be at the service of procreation, fidelity, and indissolubility. The sexuality and the sexual desires of spouses are to serve the triune good of marriage whose essence is a special type of loving friendship.[40]

Thus Augustine "refutes in advance those who say that only in modern times has marital intercourse been seen in relation to conjugal love and the interpersonal relationship of spouses."[41] Furthermore, he seems to be saying that the friendship from which marriage and sexual intercourse draw their meaning is integrally tied to the propagation of the human race, that is, children. This propagation of the human race as a service to the loving friendship of family and society can only take place within the faithful and indissoluble union of marriage. Thus, we see Augustine insinuating that the three goods of marriage he delineates are in fact one triune good, distinct but inseparable

[39] This is supported by the fact that in *De bono coniugali* Augustine referred to the crown of marriage as "the chastity of procreation and faithfulness in rendering the conjugal debt." See Augustine, *The Good of Marriage* [*De bono coniugali*], trans. T Wilcox, Fathers of the Church 27 (Washington, D.C.: The Catholic University of America Press, 1955), 11.12 (CSEL 41:204).

[40] See Cahall, "The Trinitarian Structure of St. Augustine's Good of Marriage," 225-29, where I discuss the essence of marriage as loving friendship in Augustine's thought.

[41] John J. Hugo, *St. Augustine on Nature, Sex, and Marriage* (1969; repr. Princeton, N.J.: Scepter Publishers, 1998), 133.

aspects of conjugal love. If any one of these three elements is deliberately removed, then the good that is marriage no longer exists. The rightful delight of sexual intercourse is that which "comes from one's love reaching out to the beloved spouse and the hoped for child."[42]

This means that there can be no conflict between a truly upright desire for sexual intercourse and any of the three goods of marriage. Against those who claim that Augustine saw a conflict between love and procreation it should be noted, as John Connery has pointed out, that for Augustine the issue was rather a conflict between a desire for sexual pleasure and procreation.[43] Augustine did not see the sexual impulse, sexual intercourse, or the pleasure attendant upon sexual intercourse as being opposed to conjugal love as long as they remain ordered to the natural end of marital intercourse, which is children. The beginning of *De bono coniugali* makes it clear that "society, springing from the primitive friendship of man and woman, is continued in children—not just from their association in love and friendship but from their sexual relationship, or physical intimacy, within the context of such friendship."[44]

It must be admitted that Augustine did not write explicitly about how marital intercourse or the pleasure associated with it can enhance marital affection or the interpersonal communion between spouses. However, if for Augustine the context of sexual activity is a union typified by conjugal friendship, then logically he would have presupposed that any use of sexual intercourse would serve this love. His comments on restricting the excesses of sexual desire should be seen as ways in which he saw sexuality deviating from the fullness of love. His silence in elaborating any further relationship between sexual intercourse and marital love is simply silence. Furthermore, this silence is understandable when one realizes that Augustine's comments about sexual intercourse and sexual desire are circumscribed by his debate with Julian of Eclanum over original sin and its effects. The issues of

[42] Burt, *Friendship and Society*, 114.

[43] Connery, "The Role of Love in Christian Marriage," 246.

[44] Regan, "The Perennial Value of Augustine's Theology of the Goods of Marriage," 355.

this debate did not require Augustine explicitly to address how sexual intercourse factors into conjugal love. Regardless of this silence, Augustine was not opposed to sexual intercourse, nor did he preclude it from being an expression of conjugal love. With regard to sexuality Augustine was very clear that it is a good creation of God.[45] He also believed all fallen emotions and passions, including sexual desire, to be good in themselves, but maintained that these desires need to exist in a framework ordered by love.[46] Augustine was opposed to the satisfaction of emotions and passions in the pursuit of pleasure as an end in itself and apart from love.[47] Such a pursuit would render the spouse an object of use, used as a means to achieving the end of sexual pleasure. Augustine saw that this pursuit is ultimately selfish, shows disregard for the spouse, is opposed to love of both God and neighbor, and as such constitutes abuse.

Augustine did not deny that love or conjugal pleasure is proper to spouses.[48] Instead, his point is that "to love one's spouse means to love as a human being, body and soul, the body and soul of one's beloved."[49] That he included love of the body in marital friendship is evident when he says, "holy, therefore, are the bodies of married people who remain faithful to themselves and to the Lord."[50] The fact that Augustine was not opposed to sexual pleasure in this body-soul love of spouses is evident when he says

[45] *De gratia Christi et de peccato originali* 2.34.39.

[46] *De civitate Dei* 14.10. See William S. Babcock, "Augustine and the Spirituality of Desire," *Augustinian Studies* 25 (1994): 179-99, who notes that Augustine's spirituality is not opposed to desire but is really an endeavor to foster desires that are ordered towards God and to eradicate disordered desires that lead away from God.

[47] *De civitate Dei* 14.21. As Robert Innes has said, "It is not desire which Augustine rejects but only disordered forms of desire" (104).

[48] Burt, "Friendship and Subordination," 102. See also Tarsicius J. van Bavel, "Fruitio, delectatio and voluptas in Augustine," *Augustinus* 38 (1993): 499-510, who shows that Augustine did not deny that sexual pleasure is proper to spouses. It is not true that "for Augustine, *amor* and *coitus* were incompatible, since affection between spouses required sexless marriage" (Kari Børresen, "In Defence of Augustine: How *femina* is *homo*," in B. Bruning, M. Lamberigts, and J. van Houtem, eds., *Collectanea Augustiniana. Mélanges T. J. van Bavel*, Bibliotheca Ephemeridum Theologicarum Lovaniensium 92, vol. 1 [Leuven: Leuven University Press, 1990], 424).

[49] Burt, "Friendship and Subordination," 103.

[50] *The Good of Marriage* 11.13 (CSEL 41:204).

that "pleasure is a necessary accompaniment . . . of sexual intercourse with a view to procreation."[51] Augustine did not forbid spouses to experience or even to enjoy sexual pleasure, as long as this pleasure is not sought as an end in itself and as long as the conjugal embrace is engaged in while respecting its natural purpose. In *Contra Iulianum* Augustine clearly distinguishes between bodily sensations, which are necessary and useful, and the lustful desire for these sensations, which is sinful.[52] Earlier, in *De bono coniugali,* Augustine says that the saints of the Old Testament would have experienced a natural delight from marital intercourse.[53] He comments on this sexual delight, saying, "For what food is to the health of man, intercourse is to the health of the race, and both are not without carnal pleasure, which, however, when modified and put to its natural use with a controlling temperance, cannot be passion [*libido*]."[54] Commenting on this passage at the end of his life in his *Retractationes*, Augustine says that he had made this statement "because the good and right use of passion [*libido*] is not passion [*libidinis*]. For just as it is evil to use good things in the wrong way, so it is good to use evil things in the right way."[55]

According to the logic of Augustine's thought, a good and correct use of disordered sexual passion or lust, as a desire that tends to escape control of reason and will, would be a use that brings it into the service of love. This use would order the desire

[51] Augustine, *Concerning the City of God against the Pagans,* trans. Henry Bettenson (London: Pelican Books, 1972; Penguin Books, 1987), 19.1; *De civitate Dei* 19.1 (CSEL 40).

[52] *Contra Iulianum* 4.14.65.

[53] *De bono coniugali* 16.18.

[54] *The Good of Marriage* 16.18 (CSEL 41:210): "Quod enim est cibus ad salutem hominis, hoc est concubitus ad salutem generis, et utrumque non est sine delectatione carnali, quae tamen modificata et temperantia refrenante in usum naturalem redacta libido esse non potest." A better rendering of *libido* would be "lust."

[55] *Retractations* [*Retractiones*], trans. Mary Inez Bogan, Fathers of the Church 60 (Washington, D.C.: The Catholic University of America Press, 1968), 2.48.2 (CCL 57:108): "Quod ideo dictum est, quoniam libido non est bonus et rectus usus libidinis. Sicut enim malum est male uti bonis, ita bonum bene uti malis" (written around 426/27). It should be noted that Augustine is not saying that we may do evil to bring about good. What he is saying is that an effect of original sin or a physical evil (as opposed to a moral evil), namely our wounded human desires, may be employed for a good end.

for pleasure in service to the triune good of marriage, supporting spousal friendship and the permanence of the union through the begetting of children. This is evident in *De Genesi ad litteram,* where Augustine comments on the way procreation would have taken place in Paradise if Adam and Eve had not sinned. He states that in the union of their bodies "there would be only the devout affection of charity, and not the concupiscence associated with our corrupt flesh, in the procreation of children."[56] He asks,

> Why, therefore, may we not assume that the first couple before they sinned could have given a command to their genital organs for the purpose of procreation as they did to the other members which the soul is accustomed to move to perform various tasks without any trouble and without any craving for pleasure?[57]

In several other places Augustine refers to the ordered manner in which sexual intercourse would have occurred before the Fall.[58] Although the chief point of all these passages is that sexual intercourse before the Fall would have been engaged in only for procreation, one may safely assume that it also would have occurred within the order of the love and friendship that characterized the relationship of the primordial spouses.

Augustine did say that spouses who desire to have sexual intercourse for purposes other than procreating children are in some respect giving in to carnal concupiscence, seeking sexual pleasure as an end in itself, and are thus committing a sin.[59] This is why he says at the beginning of *De bono coniugali* that children "are the only worthy fruit, not of the joining of male and female,

[56] Augustine, *The Literal Meaning of Genesis* [*De Genesi ad litteram*], trans. John Hammond Taylor, Ancient Christian Writers 41-42 (New York: Newman Press, 1982), 3.21.33 (CSEL 28:88).

[57] Ibid., 9.10.16 (CSEL 28:279).

[58] *De civitate Dei* 14.23-24; *De gratia Christi et de peccato originali* 2.35.40; *Epistula* 6*.8; *De nuptiis et concupiscentia* 1.5.6; 2.22.37; *Contra duas epistulas Pelagianorum* 1.17.35; *Contra Iulianum* 3.25.57; 4.11.57; 4.13.62; 4.14.69; *Contra Iulianum opus imperfectum* 1.68; 2.42.45; 4.19.

[59] *De bono coniugali* 6.6; 10.11; *De civitate Dei* 19.1 (this book was written sometime between 425 and 427); *Sermo* 51.22 (written ca. 400).

but of sexual intercourse."[60] He has often been vilified for this position because it seems to leave little room for the conjugal embrace to contribute to the love of spouses. However, it must be noted that because of the good that marriage is, and in particular because of the *fides* and the *sacramentum* of marriage, this sin of spouses seeking pleasure in sexual intercourse is, according to Augustine, only venial.[61] This testifies to the goodness that Augustine saw in the married state, because "although intercourse outside marriage is gravely sinful, within lawful marriage, even when passions run out of control and there is no desire of procreation, it cannot exceed venial sin."[62]

Furthermore, Augustine Regan has pointed out that what Saint Augustine meant by "venial sin" is more correctly understood as "a moral imperfection" than as a formal sin, since he had in mind actions that would promote the greatest growth in the perfection of love between spouses.[63] For Augustine, a man and a woman (who are not necessarily Christian) are truly married even if throughout their entire married life they have intercourse motivated by incontinence instead of for the purpose of procreation, as long as they have intercourse only with each other and they do not avoid procreation when they have intercourse (attempting to refuse to have children or to prevent them from

[60] *The Good of Marriage* 1.1 (CSEL 41:187-88).

[61] Ibid., 6.6; 7.6; *De bono viduitatis* 4.5; *Sermo* 51.22; *De nuptiis et concupiscentia* 1.14.16; *Contra Iulianum* 4.3.33; 5.16.63.

[62] Hugo, *St. Augustine on Nature, Sex, and Marriage,* 123.

[63] Regan, "The Perennial Value of Augustine's Theology of the Goods of Marriage," 364: "the *peccatum veniale* in question would these days be called a *moral imperfection;* at a time when the theology of venial sin and imperfection had not been worked out, S. Augustine did not have the terminological precision to express his thought with all exactness. Seeing the spiritual life as a continual advance towards perfection according to the *ordo amoris,* this advance is slowed down when, instead of voluntary and generous abstinence, a married person seeks the pleasure of sexual relations with a lawful partner. On the other hand, to seek such as a means of remaining faithful cannot be really sinful. In the abstract, the more perfect action is, by definition, better than the less perfect: in the concrete hurley-burley of daily life, the less perfect is often the only thing the average person is capable of. To attempt more would be presumptuous, and maybe would involve danger of lapsing into the sinful. In this concrete situation, the less perfect is not only good, but, paradoxically, better than the more perfect."

being born).[64] In this case, the carnal concupiscence of the spouses has been channeled by and serves the bond of fidelity. The presence of disordered sexual desire does not lead to a condemnation of the sexual intercourse that results.[65] Augustine saw sexual intercourse, even without an explicit desire for procreation, in service to spousal fidelity, as a legitimate use of the conjugal embrace.

Dealing with Augustine's position that it is a venial sin to engage in sexual intercourse beyond that necessary for procreation, David Hunter has focused on *Sermo* 354A, written around 403-4, shortly after Augustine wrote *De bono coniugali*.[66] In this sermon Augustine condemns the adoption of celibacy by one spouse without the consent of the other. Hunter highlights a nuance of Augustine's thought on marriage, noting that Augustine says that a spouse who renders the conjugal debt when it is demanded by the other spouse, even if children are not sought, performs an act of charity, mercy, and even continence in the faithful support of his or her spouse.[67] Thus, Hunter argues that at least in this "very limited instance" Augustine is proposing sexual intercourse as an act of love.[68] Moreover, even the spouse who demands sexual intercourse beyond that necessary for procreation is guilty of a sin that is a "daily sin" so slight that it can be remitted by daily recitation of the Lord's Prayer.[69] Thus Hunter states:

> Within marriage, the inordinate enjoyment of sex (that is, sex apart from procreation) is taken for granted as a normal (though, to Augustine's mind, regrettable) feature of post-lapsarian life, that is, of life under the influence of concupiscence. While Augustine clearly regards such excess as a 'sin' (*peccatum*) or 'fault' (*culpa*), the degree of the fault, as these sermons indicate, verges on the insignificant.[70]

[64] *De bono coniugali* 5.5.

[65] *De nuptiis et concupiscentia* 2.21.36.

[66] David Hunter, "Augustine, Sermon 354A: Its Place in His Thought on Marriage and Sexuality," *Augustinian Studies* 33, no. 1 (2002): 39-60.

[67] Ibid., 47-49

[68] Ibid., 49.

[69] Ibid., 46.

[70] Ibid., 46-47.

Augustine did fail to see how a couple can be acting *according to* reason, without committing "venial sin," if they engage in sexual intercourse without an explicit intention to procreate. He distinguished, however, between a couple who willfully oppose life by distorting an act of sexual intercourse through an evil device or intention (i.e., contraceptive intercourse), and a couple who may not directly intend that their act of intercourse result in a child but nonetheless do not directly oppose the child coming to be.[71] This second case would include couples who engage in sexual intercourse even if circumstances beyond their control (i.e., intercourse during pregnancy, postmenopausal intercourse, or intercourse during infertile days of a woman's menstrual cycle) make it impossible for their act of sexual intercourse to result in the conception of a child. Augustine qualified the couple in the first case as being guilty of serious sin while the couple in the second case are guilty of "venial sin." However, he failed to note that while the contracepting couple act in a way that is contrary to reason by acting in a way that is contrary to life, the other couple acts *according to* reason, and without moral fault, because they do nothing that is opposed to or distorts God's design for sexual intercourse or the triune good of marriage.

Even though Augustine may be faulted for requiring an explicit intention to procreate for the *ideal* use of sexual intercourse and for not commenting more explicitly on how the conjugal act can serve conjugal love (outside of the limited instance noted by Hunter above), he did explicitly acknowledge the service that sexual intercourse renders to marital fidelity. Thus he saw that sexual intercourse and its attendant pleasure can be used in such a way as to support and serve one aspect of spousal friendship and love. Although he believed that the ideal use of marital intercourse is that which is engaged in with the intention of procreating, Augustine acknowledged that even marital intercourse pursued out of incontinence or engaged in without directly intending to conceive a child can support the bond of fidelity as long as procreation is not purposefully eliminated from

[71] See *De nuptiis et concupiscentia* 1.15.17.

that act by any evil device or intention.[72] Even in this less ideal instance, sexual intercourse would be serving spousal fidelity, and also (although not necessarily with an explicit intention) the totality of the triune good of marriage.

I contend that everything Augustine says about the proper use of sexual intercourse within marriage should be viewed as his attempt to show how the conjugal embrace should serve conjugal love. He believed that charity would have inspired sexual activity before the Fall and he saw with great clarity that all spousal friendship increases to the extent that postlapsarian disordered sexual desire does not intrude into the relationship.[73] He warned spouses about the effects this disordered desire can have on conjugal love (*caritas coniugalis*).[74] In fact, it was because the marriage of Mary and Joseph was based upon a deep spiritual love (possessing the fullness of the triune good of marriage)[75] free of carnal concupiscence, and *not* primarily because they abstained from sexual intercourse, that Augustine saw their marriage as the ideal Christian marriage,[76] possessing the fullness of conjugal love (*caritas coniugalis*).[77]

It is true that Augustine counseled total abstinence in marriage if both spouses agreed to live out this form of chastity.[78] He gave this counsel because he thought the "time for embracing" (Esdras 3:5) was over;[79] because he was encouraging people to embrace, if they could, the higher calling of celibacy, which is an eschatological sign of how all human beings will exist in eternity;[80] and because in a continent marriage all of the spouses'

[72] Ibid.

[73] *Contra Iulianum* 5.12; *Sermo* 51.21 (some scholars suggest a date for this sermon around 400 while others suggest a date around 418). On this point see also Connery, "The Role of Love in Christian Marriage," 245-46.

[74] *De bono coniugali* 7.6.

[75] *De nuptiis et concupiscentia* 1.11.13.

[76] Ibid., 1.11.12.

[77] *Sermo* 51.21.

[78] *De bono coniugali* 6.6; *De nuptiis et concupiscentia* 1.11.12.

[79] *De bono coniugali* 9.9; *De adulterinis coniugiis* 2.12.12 (written around 420); *De Genesi ad litteram* 9.7.12; *De nuptiis et concupiscentia* 1.13.14.

[80] *De bono coniugali* 8.8; 23.29; *De sancta virginitate* 1.1; 8.8; 11.11.

energies are directed toward a chaste union of souls[81] in prayer[82] that is ordered towards union with Christ.[83] Augustine was remaining faithful to his understanding that a union of minds and wills is more profound and intense than a physical union. He was also remaining consistent in his understanding that the bodily union of husband and wife is for this world alone because marriage is a temporal institution. However, he also saw that marital love increases to the extent that spouses are able to hold sexual lust in check by periodically forgoing sexual relations.[84] In fact, he states in *De bono coniugali* that spouses cannot learn how to use sexual intercourse well unless they are able through continence not to avail themselves of it.[85] Thus by counseling continence, either permanent or periodic, Augustine was counseling spouses on how to purify and intensify their love.

There is evidence that Augustine saw the possibility of sexual pleasure flowing from a loving union between spouses, if brought into the "order of love" (*ordo amoris*)[86] according to the virtue of marital chastity. In *Sermo* 159, written not before 418, Augustine classifies the pleasure derived from the marital embrace as licit when he states: "The embraces of husbands and wives are delightful; so too are those of harlots; the first sort lawfully, the second unlawfully. So you see, my dearest friends, that our bodily senses provide us with delights both lawful and unlawful."[87] Here, even though Augustine does not describe how the pleasure of

[81] *De sermone Domini in monte* 1.15.42 (composed around 393-95); *De bono coniugali* 3.3.

[82] *De bono coniugali* 10.11; *Sermo* 210.9 (delivered at the beginning of Lent, but the date is uncertain).

[83] *De civitate Dei* 21.26 (this book was written sometime between 425 and 427).

[84] *Sermo* 51.21.

[85] *De bono coniugali* 21.25.

[86] See ibid. 3.3. For more on the "order of love" in Augustine's thought see Cahall, "The Trinitarian Structure of St. Augustine's Good of Marriage," 231.

[87] *Sermon* 159, trans. Edmund Hill, Works of Saint Augustine 3/5 (New York: New City Press, 1992), 2; *Sermo* 159.2 (PL 38:868-69). Thus it is not true, as one author has claimed, that for Augustine "true love is possible only when the sexual element is absent" (Kari Børresen, *Subordination and Equivalence: The Nature and Role of Women in Augustine and Thomas Aquinas*, trans. Charles H. Talbot [Washington, D.C.: University Press of America, 1981], 12).

sexual union can enhance the loving union of the spouses, he does explicitly sanction the experience of sexual pleasure in the lawful embraces of husband and wife.

IV. Marriage as Healing Institution

Ultimately, Augustine's comments on sexual desire and lawful sexual pleasure insinuate that the spouses' sexuality should be ordered completely towards serving procreation, fidelity, and the sacrament, which in turn form the triune structure of the loving friendship of marriage. This is why Augustine says that even now, "Concupiscence is diminished in ever-increasing ardor of charity."[88] He saw that sexual behavior always had to be subordinated to the loving friendship that characterizes marriage.[89] It is not desire in general or sexual desire in particular that is the problem in the spouses' realization of marital friendship. The problem is the disorder of these desires.[90] Using sexual intercourse to fulfill a selfish desire for pleasure poses an obstacle to spousal friendship.[91] For Augustine, the virtue of continence, which is involved in marital chastity, is that gift of God which allows husbands and wives to resist the disordered impulses associated with fallen sexual desire as well as other disordered desires.[92] Thus, God's grace always plays a part in the human struggle against the concupiscence of the flesh.[93]

According to the logic of Augustine's thought, the threefold good concupiscence of marriage that he outlined in *Epistula 6**, which places the desire for sexual intercourse in the context of the three goods of Christian marriage, can help spouses to overcome the effects of disordered carnal concupiscence. In Christian

[88] *Against Julian* 6.16.50 (PL 44:851).

[89] Rist, *Augustine: Ancient Thought Baptized,* 197.

[90] Burt, "Friendship and Subordination in Earthly Societies," 101.

[91] Ibid., *Friendship and Society*, 114.

[92] *De continentia* 1-5 (written either around 395-96 or 418-20).

[93] *Contra duas epistulas Pelagianorum* 1.10.18; *Contra Iulianum* 2.4.9; 3.21.49; 5.16.65; *Contra Iulianum opus imperfectum* 1.70. The fact that Augustine always sees God's grace as enabling humanity to fight against carnal concupiscence is highlighted in Lamberigts, "A Critical Evaluation of Critiques of Augustine's View of Sexuality," 185.

marriage carnal concupiscence is confined to a permanent union (the effect of the *sacramentum*) and can be directed towards serving the goods of procreation (*proles*) and fidelity (*fides*),[94] according to the virtue of conjugal chastity.[95] This is what Augustine means when he says that marriage makes good use of the evil of carnal concupiscence,[96] or that marriage is a cure or remedy for the vice of incontinence.[97] He saw Christian marriage as a healing institution not primarily because it provides a legitimate outlet for sexual concupiscence but because it offers motivation for its control,[98] and empowers the couple in this effort. Benedict Ashley has explained quite succinctly that when Augustine spoke of controlling concupiscence as one of the goods of marriage,

> This must be understood not merely in a negative sense, that the married need not seek sexual satisfaction outside of marriage, but in the positive sense that the Sacrament enables the married couple to acquire the virtue of chastity as the holy and humanly fulfilling use of God's gift of sexuality.[99]

Likewise, John Hugo has said:

> The need for a "remedy for concupiscence," a phrase so offensive to modern ears, is but an implicit acknowledgment of the effects of original sin in all the activities of men, not a derogation of marriage. The "remedy" is itself a form of mutual aid intended to restore conjugal love to its divinely intended purposes.[100]

And we must remember that for Augustine the divinely intended purpose of all love is a participation in divine life.

At this point I will examine what Augustine said about the nature of love and attempt to demonstrate how he himself

[94] *De bono coniugali* 3.3; 4.4.

[95] *De nuptiis et concupiscentia* 1.3.3-4,5; *Epistula* 6*.5, 8; *Contra Iulianum opus imperfectum* 1.68.

[96] *De bono coniugali* 3.3; *De gratia Christi et de peccato originali* 2.37.42; *De continentia* 12.27; *Epistula* 6*.7; *De nuptiis et concupiscentia* 2.21.36; *Contra Iulianum* 3.20.41; 3.21.49; 3.25.57; 5.12.46; 5.16.63; *Contra Iulianum opus imperfectum* 1.68; *Retractationes* 2.79.

[97] *De adulterinis nuptiis* 2.12.12.

[98] Connery, "The Role of Love in Christian Marriage," 245.

[99] Benedict M. Ashley, *Living the Truth in Love: A Biblical Introduction to Moral Theology* (New York: Alba House, 1996), 245.

[100] Hugo, *St. Augustine on Nature, Sex, and Marriage*, 140.

provides us with the tools to elaborate his theology of conjugal love. In many respects I will be following the lead of Peter Brown, who said:

> It is the joy of Augustine scholarship precisely that it is possible to discover what Augustine might have said, but chose not to say; and it is the urgent need of the modern study of his thought to insist that the careful reconstruction of what Augustine could have said, refused to say, and finally, chose to say are infinitely to be preferred to those many attempts (by writers of all persuasions) to tell the deeply thoughtful, but determined, old bishop of Hippo what he should have said.[101]

V. The Nature of Love as Participation in Divine Life

Love is a central theme in the thought of St. Augustine. Tarsicius J. van Bavel has noted that Augustine addresses love more often than any other theme; yet, van Bavel contends that the theme of love is often overlooked in Augustine's anthropology.[102] This is an unfortunate oversight since for Augustine, "Love is the profoundest thing one can say of the human being."[103] For Augustine, "Love alone differentiates human beings, for . . . a person 'is' what he or she loves."[104]

Augustine provided several complementary definitions of love.[105] In *De diversis quaestionibus octaginta tribus* he states that

[101] Brown, "Augustine and Sexuality," 1.

[102] Johannes van Bavel, "The Anthropology of Augustine," *Louvain Studies* 5 (1974): 44.

[103] Tarsicius J. van Bavel, "Love," in *Augustine through the Ages: An Encyclopedia,* ed. Allan D. Fitzgerald (Grand Rapids, Mich.: Eerdmans, 1999), 509.

[104] Ibid. See *In epistulam Iohannis ad Parthos tractatus* 2.14 (written around 406/407).

[105] Van Bavel has noted that when writing about love "Augustine does not make an essential difference between the three Latin words *amor*, *caritas*, and *dilectio*. All three can be good or evil according to the object loved" ("Love," 509). For in-depth treatments of Augustine's theology of love see Hannah Arendt, *Love and Saint Augustine,* ed. and trans. Joanna Vecchiarelli Scott and Judith Chelius Stark (Chicago: University of Chicago Press, 1996); Gunnar Hultgren, *Le commandement d'amour chez Augustin: Interprétation philosophique et théologique d'après les écrits de la période 386-400* (Paris: Vrin, 1939); William Riordan O'Connor, "Augustine's Philosophy of Love," (Ph.D. diss., Fordham University, 1982); Oliver O'Donovan, *The Problem of Self-Love in St. Augustine* (New Haven: Yale University Press, 1980).

it is a type of motion (*motus*)[106] or appetite (*appetitus*),[107] which "is nothing other than to desire something for its own sake."[108] This highest virtue seeks the eternal happiness of the one loved without expecting anything in return.[109] In *De Trinitate* he says:

> in this question concerning the Trinity and the knowledge of God, nothing else is to be particularly considered, except what is true love, or rather what is love. For only true love may be called love, otherwise it is desire [*cupiditas*]. Therefore, it is a misuse of terms to say of those who desire that they love, just as it is a misuse of terms to say of those who love that they desire. But this is true love, that while holding fast to the truth, we may live justly, and therefore, may despise everything mortal for the sake of the love of men, whereby we wish them to live justly.[110]

Thus for Augustine true love always has reference to truth and justice, it is always disinterested, and it can ultimately be understood only with reference to God, who is Love.

Augustine therefore believed that if we are to know the meaning of love we must look to the God who is Love.

> If nothing concerning the praise of love was said in all these pages of this epistle [of John], if nothing at all through the rest of the pages of the Scriptures, and we heard this one thing alone from the voice of God's Spirit, that 'God is love' [1 John 4:8] we ought to seek nothing more.[111]

Augustine calls his readers to imitate this divine life of love in their relations with each other.[112] In a passage of *De Trinitate* that

[106] *De diversis quaestionibus octoginta tribus,* 35.1 (written between 388 and 396).

[107] Ibid., 35.2.

[108] *Eighty-Three Different Questions* [*De diversis quaestionibus octoginta tribus*], trans. David Mosher, Fathers of the Church 70 (Washington, D.C.: The Catholic University of America Press, 1982), 35.1 (PL 40:23).

[109] *In epistulam Iohannis ad Parthos tractatus,* 6.4.

[110] *The Trinity* [*De Trinitate*], trans. Stephen McKenna, Fathers of the Church 45 (1963), 8.7.10 (CCL 50:284). Augustine began work on *De Trinitate* in 399 and completed it as late as 426.

[111] *Tractates on the First Epistle of John* [*In epistulam Iohannis ad Parthos tractatus*], trans. John W. Rettig, Fathers of the Church 92 (Washington, D.C.: The Catholic University of America Press, 1995), 7.4 (PL 35:2031).

[112] See Raymond Canning, *The Unity of Love for God and Neighbor in St. Augustine* (Heverlee-Leuven: Augustinian Historical Institute, 1993), 314-30; Canning responds to scholars who claim that Augustine ignored the interpersonal nature of love.

discusses how the Father and the Son are united through the Holy Spirit, Augustine states:

> through Him [the Holy Spirit] the begotten is loved by the begetter, and in turn loves him who begot Him; in Him they preserve the unity of spirit through the bond of peace [Eph. 4:3], not by a participation but by their own essence, not by the gift of anyone superior to themselves but by their own gift. And *we are commanded by grace to imitate this unity, both in our relations with God as well as among ourselves.*[113]

Thus Augustine makes an explicit appeal for his readers to imitate the unity of the life of the Trinity, not only in their relationship with God but also in their relationships with each other.

It is apparent then that when dealing with interpersonal love on the human level, for Augustine a "merely human love for one another is not sufficient."[114] He makes it clear that we cannot truly will the good of the other, and thus love him or her with reference to God, without God's help. The love by which Christians, which includes Christian spouses, must love each other and God is ultimately a participation in the life of God, through the Person of the Holy Spirit. True love is God's love given to us by the Holy Spirit. True love is thus an infused love, a supernatural gift, a gift of grace. In *De Trinitate* Augustine states:

> When God the Holy Spirit, therefore, who proceeds from God, has been given to man, He inflames him with the love for God and his neighbor, and He Himself is love. For man does not have whence to love God, except from God. Wherefore a little later he says: 'Let us love him, because he first loved us' [1 John 4:7-19]. The Apostle Paul also says: 'The charity of God is poured in our hearts by the Holy Spirit, who has been given to us' [Rom 5:5].[115]

Augustine explicitly identifies authentic human love as being a gift of God Himself:

> Embrace love, God, and embrace God by love. It is love itself which unites all the good angels and all the servants of God by the bond of holiness, and unites us and them mutually with ourselves and makes us subject to Himself. Therefore,

[113] *The Trinity*, 6.5.7 (emphasis added) (CCL 50:235).

[114] van Bavel, "Love," 515.

[115] *The Trinity* 15.17.31 (CCL 50A:506-7).

the more we are cured of the swelling of pride, the more we are full of love, and of what, if not of God, is he full who is full of love? But one may object: "I see love and I conceive it in my mind as best I can, and I believe the Scripture when it says: 'God is love, and he who abides in love abides in God,' but when I see it I do not see the Trinity in it." But as a matter of fact you do see the Trinity if you see love. . . . "Beloved, let us love one another, because love is from God. And everyone who loves is born of God and knows God. He who does not love, does not know God, for God is Love" [1John 4:7-8,20]. This context shows sufficiently and clearly that brotherly love itself (for brotherly love is that whereby we love one another) is taught by so eminent an authority, not only to be from God, but also to be God.[116]

In a similar vein he says:

How then a little before this, 'love is of God,' and now 'love is God'? . . .If . . . the Holy Spirit is God and he in whom the Holy Spirit dwells loves, therefore love is God, but God because [it is] of God. For you have in the epistle, both 'love is of God' and 'love is God.' . . . But because the Apostle says, 'The love of God has been poured forth in our hearts by the Holy Spirit who has been given to us' [Romans 5:5], let us understand that in love is the Holy Spirit.[117]

Augustine again makes it clear that God is present in authentic human love when he writes, "So entirely is love or charity the gift of God that it is even called God, as the apostle John says: *Charity is God*, and whoever remains in charity remains in God, and God in him [1 John 4:16]."[118] Thus, through "participation or presence, the Holy Spirit is really present in human love. Our love is not independent of God nor foreign to Him, so that God is really present in our love."[119] Augustine sees that Christian love "must be inspired by divine love, and ought to mirror it."[120] This love, given to us as a gift of God, "excludes all that is sinful, namely, possessive or egoistic love, pretension, self-glorification,

[116] Ibid., 8.8.12 (CCL L:286-88).

[117] *Tractates on the First Epistle of John,* 7.6 (PL 35:2031-32).

[118] *Sermon* 156, trans. Edmund Hill, Works of Saint Augustine 3/5 (New York: New City Press, 1992), 5; *Sermo* 66.5 (PL 38:852-53), written in 417.

[119] Tarsicius van Bavel, "The Double Face of Love in St. Augustine: The Daring Inversion 'Love is God'," *Studia Ephemeridis Augustinianum* 26, Congresso Internazionale su S. Agostino nel Centenario della Conversione, Atti 3, 69-80 (Rome: Institutum Patristicum "Augustinianum", 1987), 78.

[120] van Bavel, "Love," 514.

and seeking one's own profit."[121] It is a love by which we will the ultimate good of the other, namely that he or she finds his or her fulfillment in God.

VI. Conjugal Love and Divine Love

What Augustine says about true love and love's origin in the Trinity should be kept in mind when he discusses the loving friendship between spouses. For Augustine the essence or source of all friendship is love.[122] The love of friendship is characterized by reciprocity, equality, benevolence, and openness, and is founded in the truth.[123] Furthermore, where Augustine linked friendship with love he also linked love with God: "After all, what else is friendship? It has received its name from nothing else but from love and is faithful nowhere but in Christ, in whom alone it can also be everlasting and blessed."[124] In this passage Augustine has linked the love of friendship with Christ, who is love incarnate. He points to the fact that true love is experienced by being incorporated into Christ and true love should reflect the everlasting and blessed love of Christ.[125] Elsewhere, Augustine distinguished Christian friendship from other forms of friendship by noting that Christian friendship is elevated and transformed by the Holy Spirit and the embrace of God's grace through Jesus

[121] Ibid., 514-15.

[122] For a discussion of the evolution of Augustine's concept of friendship a good resource is Marie A. McNamara, *Friends and Friendship for Saint Augustine* (New York: Alba House, 1964), 213-37. For an explanation of how Augustine's concept of friendship relates to the classical notion see Caroline White, *Christian Friendship in the Fourth Century* (Cambridge: Cambridge University Press, 1992), 185-217. A good discussion of Augustine's concept of friendship as presented in the *Confessions* is John F. Monagle, "Friendship in Saint Augustine's Biography," *Augustinian Studies* 2 (1971): 81-92.

[123] Burt, *Friendship and Society,* 62-64.

[124] "Answer to the Two Letters to the Pelagians" [*Contra duas epistolas Pelagianorum*], trans. Roland J. Teske, in *Answer to the Pelagians II,* Works of Saint Augustine 1, vol. 24 (New York: New City Press, 1998), 1.1 (CSEL 60:424). See also *Confessiones* 4.7.12; 4.9.14 (written between 397 and 401) where Augustine roots true friendship in the friends' mutual love for God.

[125] See James McEvoy, "*Anima una et cor unum*: Friendship and Spiritual Unity in Augustine," *Recherches de Théologie ancienne et médiévale* 53 (1986): 80.

Christ. Augustine saw that the love of friends is a gift of God poured into their hearts by the Holy Spirit.[126] In his *Confessiones* Augustine says that true friendship "is not possible unless you [God] bond together those who cleave to one another by the love which 'is poured into our hearts by the Holy Spirit who is given to us (Rom 5:5).'"[127]

If we apply these insights to Augustine's theology of marriage we see that the friendship that "became for Augustine the core of Christian marriage . . . [is] a friendship further transformed by divine charity."[128] The logic of Augustine's thought demands this conclusion. Christian spouses are to love each other with a love that is a participation in the life of the Trinity. The logic of Augustine's thought was not just proposing the Trinity as a model for married love. According to his understanding of divine and human love, if spouses truly love each other they are loving each other in and through God who through the Holy Spirit elevates their love to be able to participate in the love of the Trinity.

Augustine comes close to relating human sexuality to the divine life of the Trinity at the end of Book VIII of *De Trinitate* when he discusses the trinity he sees in love. He says:

> But what is love or charity, which the divine Scripture praises and proclaims so highly, if not the love of the good? Now love is of someone who loves, and something is loved with love. So then there are three: the lover, the beloved, and the love. What else is love, therefore, except a kind of life which binds or seeks to bind some two together, namely, the lover and the beloved? And this is so even in external and carnal love.[129]

It is true that Augustine goes on to search for a trinity of love in the "purer and clearer source" of the soul,[130] and that he ultimately finds this image of the Trinity in the highest part of the human person's rational soul, the mind (*mens*), which consists of

[126] *In epistulam Iohannis ad Parthos tractatus* 6.10; 10.3.

[127] *Confessions,* trans. Henry Chadwick, Oxford World's Classics (New York: Oxford University Press, 1991), 4.4.7; *Confessiones* 4.4.7 (CCL 27:43).

[128] Hugo, *St. Augustine on Nature, Sex, and Marriage,* 160.

[129] *The Trinity* 8.10.14 (CCL 50:290-91).

[130] Ibid., 8.10.14 (CCL 50:291).

remembering, knowing, and loving God.[131] Nonetheless, this trinity of love that tends toward union is apparent in external and carnal love.

Augustine sees, even in carnal love (and one is to assume that here he has in mind sexual intercourse), one of those traces or vestiges of the Trinity that he says are present throughout creation.[132] In light of what has already been said, this trace of the Trinitarian relations present in sexual intercourse would involve the spouses seeking each other's true good. This act would serve conjugal love by simultaneously serving all of the elements of the triune good that constitute marriage: indissolubility, faithfulness, and fruitfulness. This service at the very least would take the form of not opposing or ruling out any aspect of this triune good. Sexual intercourse at the service of conjugal love would also serve to draw the spouses into a communion of persons that is a temporal reflection of the eternal communion of persons of the Trinity.[133] Not only can conjugal love be a reflection of this divine life, it is called to participate in this life. Christian marriage is truly a communion of persons because the principle of communion, God the Holy Spirit, is present in the spouses' love healing, elevating, and transforming them as they love each other, body and soul. Augustine's thought on love and love's origin in the Trinity is, one might say, the assumed backdrop for everything

[131] Ibid., 14.12.15.

[132] *De Trinitate* 6.10.12. See William Riordan O'Connor, "Augustine's Philosophy of Love," (Ph.D. diss., Fordham University, 1982): "In our earthly experience of love we take delight in being united with another person. What we experience in such love is a finite participation in the loving Unity that is the Triune Creator. It is a temporal anticipation of the eternal communion we shall experience when we enjoy the vision of God together with all his angels and saints. . . . Because our experience of love is a temporal anticipation of the Love that is God, an analysis of that experience will reveal a trinity to us. For love always seeks to unite a lover and a beloved, even in the experience of sexual love. And so there are three components in any experience of love: the lover, the beloved, and the love itself that unites them" (161-62). Kim Power has said that Augustine's "understanding of the evil of sexual desire uncontrolled by the will means that there is no possibility of sexual or married love imaging God or divine love" (Kim Power, *Veiled Desire: Augustine and Women* [New York: Continuum, 1996], 161). I can agree with this statement only if the emphasis is put on "uncontrolled by the will." If sexual desire is controlled by the will with the help of grace then Augustine does not preclude this type of imaging.

[133] O'Connor, "Augustine's Philosophy of Love," 121.

he presented regarding conjugal life. Viewing Augustine's theology of marriage against this backdrop holds great promise, and perhaps even provides a corrective to some of Augustine's inadequate or incomplete statements about conjugal love while simultaneously correcting a modern myopic view of conjugal love that is obsessed with pleasure and individual satisfaction.

VII. CONCLUSION

Augustine saw that conjugal love is subject to many dangers in our present fallen condition. He approached the topics of marriage and sexuality with a profound realism that sometimes offends modern ears. He realistically saw that the communion of the spouses with each other is jeopardized and limited by that carnal concupiscence of which sexual lust is a part. Carnal concupiscence is the negative side of human passion that can distort marital friendship-love and lead one spouse to use his or her own body, or the body of the other spouse, in the selfish pursuit of pleasure. Pleasure should accompany a total giving of oneself to the other in an act of selfless love. Augustine saw that carnal concupiscence presents the danger of seeking pleasure without regard for the other. While he said little about how the conjugal embrace or its attendant pleasure can enhance the love of spouses, he provided the tools for allowing us to develop his thought in this arena. If one understands and applies what Augustine said about the nature and origin of love to his thought on marriage, then for Augustine conjugal love and the conjugal embrace should reflect and participate in divine love. It is clear that he saw that the friendship-love shared by human spouses must be totally selfless, seeking the complete and ultimate good of the other. Therefore, Augustine himself provided the material in his writings to allow us to see that the participation of human spousal love in the love of the Trinity must involve a total giving of self and must apply to all aspects of spousal life. If Augustine's comments on sexuality and conjugal love are seen in the broader context of his thought on the nature of love, and his

understanding of love as participation in divine life, then his writings lead his readers to see that with the help of God's grace conjugal love, as it is enacted in all aspects of married life, including the conjugal embrace, has the opportunity to reflect and participate in the communion of love that is the divine life of the Trinity.

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ARISTOTLE'S AETHER AND CONTEMPORARY SCIENCE

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PROPONENTS OF THE perennial philosophy tend to be embarrassed by its natural science, and this is, to some extent, understandable. That the progress of the sciences in the past four hundred years coincided with a widespread repudiation of Aristotle's philosophy in general, and his natural philosophy in particular, is not coincidental. As the natural philosophers of the 1600s looked at nature more and more closely, evidence began to accumulate that much of what Aristotle thought was true about nature was not. Perhaps, many suspected, *none* of it was true.

The most obvious instance of this challenging of Aristotelian natural philosophy came from the Copernican revolution, in which the Earth was elevated from the status of an immobile lump of dross at the center or bottom of the universe to that of "planet," one of the heavenly bodies orbiting the immobile sun.[1] Our promotion seemed to fly in the face of Aristotle's now frequently derided bifurcation of nature into two regions, the celestial and the terrestrial (or more accurately, the supra- and

[1] It is often repeated that the Copernican revolution was a *demotion* for the Earth and for mankind in general, taking him from the center of the universe, a privileged place in contemporary speech, and placing him in a position of subordination and subservience. *Now* man would realize, the story goes, his own insignificance in the great scheme of things. (I doubt I need to cite evidence of this claim; examples are legion.) Regardless of whether some may have derived an overly anthropocentric world view from the centrality of the Earth, Aristotle did not. He consistently argued that the part of the cosmos beneath the moon was the least both in quantity *and quality*. See, for example, *Meteor.*, 2.1.353a35-b6.

sublunary), each corresponding to two radically different kinds of matter: aether and the familiar Empedoclean elements. If the Earth is just another one the planets, and the planets and the other stars are the only sensible evidence of Aristotle's aethereal substance, then the case for positing aether weakens; the planets, or "wandering stars,"[2] are no more aethereal than is the ordinary kind of matter with which we are intimately familiar.

That was the beginning of the end for Aristotle's incorruptible aether. Although the notion that an aether was still needed as a medium for conveying gravitational and electromagnetic forces would occasionally surface, by the end of the nineteenth century the view prevailing among experimental scientists was that aether was superfluous. Modern-day Thomists and disciples of Aristotle were forced to choose between clinging to doctrines against which the entire scientific community was arrayed, and admitting that their masters were egregiously mistaken in a large part of their philosophy. That many have taken the latter path, trying to ameliorate the situation by claiming that Aristotle's natural philosophy is not foundational for his metaphysics or ethics, or by insisting that St. Thomas Aquinas's philosophy, unlike that of Aristotle, is essentially metaphysical or theological, is well known. This essay, however, will, in a manner of speaking, take the former path, arguing that while experimental science has indeed made a definitive case against certain particularities of Aristotle's aether, the existence of some kind of aether, one not entirely unlike his celestial matter, has not yet been refuted. Indeed, a positive case can be made in favor of it still, a case based upon recent developments within experimental science itself. In short, we will argue that there was a real insight driving the Philosopher's claim that to explain the cosmos more is needed than just the sort of matter that we can touch and grip in our

[2] Setting aside the presence or absence of twinkling, to the naked eye a planet looks no different from a star, and hence a planet was thought to be one of the stars, distinguished from the others only because its circular motion had certain irregularities, earning for it the name *planētēs*, "wanderer." Likewise, then, if the Earth is one in kind with the planets, it seems likely that it is one in kind with the stars in general.

hands, an insight of which contemporary physicists and philosophers of nature are beginning to catch a glimpse.

In order to appreciate both the degree to which Aristotle's aether has been rejected and the degree to which it has been resuscitated and modified by recent physics, this paper will be divided into three parts. We will first examine the nature and properties of Aristotle's aether, summarizing what arguments lead him to posit its existence, and evaluating the strength of these arguments, both in themselves and according to Aristotle. However, because the Copernican revolution was only an implicit attack on aether, while the most direct and successful challenge to it (via a modern stand-in, the luminiferous aether of electromagnetism) was the Michelson-Morley experiment of 1887, in the second part we will briefly recount the fate of aether in the hands of early modern natural philosophers, and its rejection as a result of this experiment and Einstein's special theory of relativity. Lastly, we will focus on the twentieth century's gradual recognition of a critical need for aether in explaining both the very small—in the so-called vacuum of quantum electrodynamics—and the very large—in the curved space-time of the general theory of relativity and astrophysics's recent postulation of a cosmological constant.

I. Aristotle's Celestial Substance

A) The Need for a New Kind of Matter

In the first book of *De Caelo,* his only extended discussion and defense of aether as such, Aristotle offers what might be characterized as four or five different arguments for aether's existence, concluding with

> Thus reasoning from all of these things, we come to believe that there is something besides the bodies nearby and around us, something other than and

separate from them, something having a more honorable nature to the degree that it is distant from the world at hand.[3]

Rather than expound each argument in detail, we will present an overview of the reasoning as Aristotle's attempt to explain certain observed facts about the heavens, facts that modern man is so habituated to explaining *away* that he finds it difficult even to notice their peculiarity.

Although Aristotle invokes premises about the perfection, simplicity, and priority of certain kinds of local motion, the principal datum of nature that he wishes to explain with aether can be experienced firsthand by spending the night under the stars and watching their motion as the night hours pass. One finds himself at the center of a perfectly circular pilgrimage of stars traveling from east to west, as though each of the heavenly bodies were embedded on a dark orb revolving around the Earth. This nightly, and a related yearly, uniform circular motion of the stars should provoke a question: Why should this apparently natural motion occur in the sky, indeed in most of the cosmos,[4] but not here below, where few things seem to move in circles without being coerced? This peculiarity is all the more striking when one notices that these same heavenly bodies and their motions are never seen to change, much less corrupt or cease—perhaps the reason why, Aristotle suggests, the heavenly matter was named aether, from *aei thein,* "always running."[5] This appearance of

[3] *De Caelo,* 1.2.269b14-17. (All translations of Aristotle and St. Thomas will be my own.) After some preliminary distinctions in the previous chapter, Aristotle presents the core of his argument for aether in 269a2-269b17. St. Thomas, in his exposition of this chapter, divides these arguments into five (I *De Caelo,* lect. 4), but notes that they may all be treated as one primary argument complemented by defenses of certain key premises and responses to natural objections; see ibid., nn. 15 and 17.

[4] In spite of the caricature one often sees of the ancient and medieval idea of the cosmos, Aristotle and all the ancient astronomers knew that the Earth and its atmosphere must be of an insignificant size relative to the cosmos as a whole. See Aristotle, *De Caelo,* 2.14.297b24-298a21; St. Thomas, I *De Caelo,* lect. 28, nn. 3-4; Ptolemy, *Almagest* 1.6.

[5] See Aristotle, *De Caelo,* 1.3.270b16-24. Aristotle may be deriving this etymology from Plato's *Cratylus,* 410b, where Socrates tells Hermogenes that "'Aether' [αἰθήρ] I would interpret as 'the always running' [ἀεί θεῖρ]; this may be correctly said, because this element is always running in a flux around the air." Plato, however, is implicitly identifying aether with

eternity and incorruptibility is strengthened by the astronomical records Aristotle has at his disposal: "For in all time gone by, according to all records handed on from one [generation] to the next, no change has ever appeared either in the whole of the containing heaven or in any proper part of it."[6] To assume that a radical difference between natural motions in the terrestrial region and those in the heavenly does not derive from a radical difference in the natures of the bodies in these regions appears foolish.

Besides clarifying the aether doctrine, however, this line of reasoning also suggests its weaknesses, especially for the modern reader. Perhaps, one could suggest to Aristotle, the Philosopher has not observed the heavenly motion long enough to make the judgment that it is moving uniformly and is incorruptible; perhaps such perfect circular motion could be accomplished by ordinary matter by way of various combinations of rectilinear motions; and, most importantly, perhaps it is the Earth itself rather than the heavens that has the daily rotation and yearly orbit.[7] While Aristotle is often accused of being insufficiently empirical in his

the sphere of fire surrounding that of air; Aristotle was the first to use the word as designating a kind of matter that is not found below the sphere of the moon. Aristotle notes that Anaxagoras and Empedocles applied the word to fire or air (*De Caelo,* 1.3.270b24-25; 2.13.294a25-27).

[6] *De Caelo,* 1.3.270b12-17. While it is unclear how many centuries of records Aristotle personally knew to show that stars do not come to be or cease to be, at his time the Egyptians and Babylonians were well known to have over a thousand years of accurate astronomical records that indicate no change in the relative positions, speeds, and number of the heavenly bodies. See D. R. Dicks, *Early Greek Astronomy to Aristotle,* ed. H. H. Scullard (Ithaca, N.Y.: Cornell University Press, 1970), 166-75.

[7] Emphasizing the dialectical character of these arguments for aether, St. Thomas notes that although all the evidence suggests that the heavenly bodies and their motions are incorruptible, it remains a possibility that we have not observed them long enough (I *De Caelo,* lect. 7, nn. 5-6). Aristotle himself does not try to show that the Earth is immobile at the center of the universe until *De Caelo,* 2.13-14, and St. Thomas points out that until this issue is settled it is possible that the Earth, not the heavens, is moving (II *De Caelo,* lect. 11, n. 2). While Aristotle could not be accused of circular reasoning here, since the later arguments against the Earth's mobility do not appear to rest on the assumption that the heaven is a different kind of matter, nevertheless these arguments are not demonstrative.

study of nature, perhaps here just the opposite is the case; perhaps he is relying too much on (mere) appearances.[8]

With this in mind it is worth recalling what kind of certitude Aristotle claims to be offering here. Unlike the core arguments and principles in the more foundational *Physics,* the arguments in *De Caelo* are consistently and explicitly characterized by Aristotle as tentative and merely probable.[9] For example, in asking why the heavens rotate from east to west rather than the opposite, he pauses:

> Now, it may be objected that to try to explain everything without distinction appears to be a sign either of excessive foolishness or of excessive zeal. But this criticism is not always equally just. Rather, one must see what cause there is for saying something, and further, what sort of belief in it one may have, whether it be [merely] human or something more unassailable. Thus, although if someone ever chances upon more strictly necessary [accounts], one must be grateful to him; nevertheless for now one must state how things appear.[10]

Sometimes we must be satisfied with a "consistent account that merely harmonizes with our suspicions," restraining these suspicions so that "the appearances are always lorded over by sense."[11]

Aristotle likewise implies, when he summarizes the conclusions reached about aether's nature in the first book, that the case for the heavenly substance in particular, while assumed throughout most of *De Caelo,* is also tenuous: "Taking belief from the things said, [we must say] that the entire heaven was not generated nor can it be destroyed (as some say), and that it is one and eternal."[12] Similar language of belief, or tentative conviction, is present in the passage quoted at the beginning of this section, when Aristotle concludes the arguments for aether by saying that we have reason

[8] As one commentator puts it, "If ever an empirical attempt was made to save the phenomena, it is to be found in the *De Caelo.* In no other Aristotelian writing is it more true that the 'mistakes' come from this implicit reliance on what 'we see' as beyond question" (John H. Randall, *Aristotle* [New York: Columbia University Press, 1960], 153).

[9] See, for example, *De Caelo,* 1.7.274a30-34; 1.8.277a9-13; 2.12.291b24-28; 2.13.294b30-295a2; and 3.1.299a1-6.

[10] *De Caelo,* 2.5.287b29-288a2.

[11] *De Caelo,* 2.1.284b4-5, and 3.7.306a17, respectively; see also 2.13.293a25-30.

[12] *De Caelo,* 2.1.283b26-28.

"to believe that there is something besides the bodies nearby and around us."[13] Aristotle refuses to characterize the case for aether as a strict demonstration, leaving open the possibility that his reader has not been convinced and may simply have to assume or hypothesize the existence of aether to understand the rest of the work. He explains this ambiguity in the same discussion, before noting the aforementioned astronomical records, when he says that the immutability of the heavenly substance "follows from the senses, at least sufficiently to speak on behalf of human belief [προ ς ἀνθρωπίνην πίστιν]."[14]

Hence, even with an imperfect foundation, Aristotle encourages us to strive to understand the nature of the heavenly bodies as best we can, given the intrinsic desirability of the subject matter:

> It is good to inquire about these things and so to deepen our understanding, although we have little to go on and we are situated at such a great distance from the attributes of these things. Nevertheless, from contemplating such things nothing [we infer] should seem to be unreasonable, holding them now as fraught with difficulties.[15]

Here Aristotle points out the reason that we are restricted to mere "human belief" when we try to discern the nature of the heavens: Like detectives without witnesses, we have little to go on. He elucidates this later when he says, "We are far away from the things we are trying to inquire into, far away not only in place but more so in that we have sensation of exceedingly few of their accidents."[16] We sense little to nothing of the heavens; with the exception of the luminous stars and planets, we perceive none of the properly sensible attributes (e.g., color, smell, and sound) in aether, but only some of the common ones (e.g., magnitude and motion), which latter are in fact difficult to detect without the

[13] *De Caelo,* 1.2.269b14; see also 1.3.269b18-20, and 270b4.

[14] Ibid., 1.3.270b13.

[15] Ibid., 2.12.292a14-18. A parallel text and *locus classicus* is at *De Partibus Animalium,* 1.5.644b23-645a7.

[16] *De Caelo,* 2.3.286a5-7. See also *De Anima,* 1.1.402b22-25.

former.[17] Nor is this limitation simply in the acuity of our sense powers; *by definition* aether, an invisible, incorruptible body, has little in common with ordinary matter. As will be shown below, it cannot be acted upon by ordinary matter and can act on ordinary matter and our senses only indirectly or in a hidden way. Thus, aether's hypothesized nature must be detectable via argument, not through mere experience.

This leads us to an implicit, and in fact more certain, reason Aristotle thinks that the four elements are insufficient to explain the heavens. In writing *De Caelo,* Aristotle assumes that the reader understands and accepts his arguments from the fourth book of the *Physics,*[18] namely, that a void, a region not filled by a material substance, is not physically possible.[19] After a careful consideration of what place is and what void would have to be, Aristotle sets out a number of arguments, some merely dialectical and others more decisive,[20] to show that it is impossible that there be

[17] On the distinction between proper and common sensibles, see *De Anima,* 2.6; on the visibility of the transparent, and therefore of its magnitude, via the colored bodies bounding it, see ibid., 2.7.418b3-15.

[18] *Physics,* 4.1-9; while only chapters 6-9 treat void directly, the previous chapters on place and the Platonic idea of space are crucial for fully appreciating the arguments in the later chapters.

[19] While there is some controversy about the chronological order of some of Aristotle's works, there is broad scholarly agreement that the traditional pedagogical order of *Physics*-before-*De Caelo* is correct; see Werner Jaeger, *Aristotle: Fundamentals of the History of His Development,* trans. Richard Robinson (Oxford: Clarendon Press, 1934), 294-306. Not only are there numerous references in *De Caelo* to matters settled already in *Physics,* but not vice versa (e.g., 272a30, 274a19-23, 275b22, 299a10); some such references are even to *Physics* 4 (e.g., 303a22). At any rate, many *De Caelo* passages indicate that Aristotle is assuming the refutation of void as an underlying principle in the aether doctrine. For example, just before making the case for aether's existence in *De Caelo,* 1.2, he argues that there are only three dimensions by invoking as a premise that every three-dimensional continuum is a material body (268a1-10), something that can be assumed only if the possibility of void (a nonmaterial three-dimensional magnitude) has been implicitly rejected already. Further, after discussing aether's properties, he denies off-handedly the possibility there is a void outside the cosmos, treating the question as though it had already been settled (279a11); see also ibid., 2.4.287a7-12, and 2.8.290a7, where he explicitly assumes that there are no empty spaces or discontinuities in the cosmos.

[20] Making this distinction is of course critical, as many commentators will take as the fundamental argument against void what is really just a preparatory dialectical argument, and will therefore ridicule the weakness of Aristotle's position. The problematic arguments about motion in a void, for example, are frequently taken to be either Aristotle's primary reasons

a place or quantity without a subject or material in which to inhere. Thus any region that appears empty must not be so. Looking to the heavens, then, we conclude that the vast expanse between the visible heavenly bodies and the world in which we live, the region that the life-giving light of the sun must traverse to allow animals to see and plants to grow, must itself be filled with an invisible or, better, a transparent medium. Not only are the *stars and planets* made of a different kind of substance, but—given that such perfect transparency is present in something that manifests no signs of ordinary matter's downward or upward tendency, but either is perfectly yielding to the visible circular motion of the stars and planets, or moves with them—so must be the subtle matter surrounding them. Thus, Aristotle applies the name "aether," or more frequently, "the first body,"[21] to whatever fills the volume of space between the moon and the outermost sphere of the fixed stars. It *is* itself "the heaven . . . the continuous body in the place after the outermost circumference of the whole,

for rejecting void or his only ones; see Randall, *Aristotle,* 127, and Friedrich Solmsen, *Aristotle's System of the World: A Comparison with His Predecessors* (Ithaca, N.Y.: Cornell University Press, 1960), 136-41. A careful survey of *Physics,* 4.8 manifests that some of the arguments pertain to motion in void, and others to void as such (the division occurring at 216a26), as most commentators will agree (e.g., Edward Hussey, in *Physics, Books III and IV,* trans. Edward Hussey [Oxford: Oxford University Press, 1993], xxxv, 133; David Furley, *The Greek Cosmologists,* vol. 1, *The Formation of the Atomic Theory and Its Early Critics* [Cambridge: Cambridge University Press, 1987], 190-91).

[21] Other than *De Caelo,* 1.3.270b22, nowhere else in *De Caelo, Physics,* or *Metaphysics* does Aristotle unambiguously use the word αἰθήρ to describe the heavenly substance, usually preferring the names "first body" (ibid., 1.3.270b2-3), or "divine body" (ibid., 2.3.286a11-12), or generically "the heaven" (ibid., 1.9.278b11-18). Occasionally he does name it from its circular motion (ibid., 1.3.269b29-30), or from its immutability (*De Anima,* 2.6.418b9). From Aristotle's medieval disciples we received the name *quinta essentia,* "fifth essence," the root of our modern words "quintessence" and "quintessential" (which will turn up in a surprising context later in this essay). This is of course the origin of the commonly heard claim that Aristotle posits a "fifth element." While he does call it the "first element" on one occasion (*Meteor.,* 1.3.340b12), he avoids calling it an element and never calls it the *fifth* element, perhaps because "element" designates only what enters into composition with other things, and because counting it as the fifth implies too much homogeneity between it and the traditional other four; calling it "first," however, follows the order of nature, whereas calling it "fifth" follows the order of coming to know. For better or for worse, however, Aristotle's first body is now referred to as aether, and it was under this appellation that it was later rejected and then more recently revised and rejuvenated. We too will follow the convention.

in which are the moon, and the sun, and some of the stars [i.e., the planets]."[22] Likewise this is the body whose existence Aristotle is trying to make probable in the opening chapters of *De Caelo*.[23]

While an adequate defense of Aristotle's critique of void would take us somewhat afield,[24] it is crucial at least to notice that this critique is not merely the scaffolding but more the infrastructure of the general case for aether. The heavens appear to be empty, yet we may offer compelling arguments that such an emptiness is physically impossible. Thus there should be a *prima facie* case in favor of an essentially insensible substance that pervades apparent voids, an aether. In the modern context this manner of interpreting *De Caelo* 1.2 is all the more noteworthy, for since Aristotle's time we have taken a closer look at the heavens, and in the past half century we have literally gotten within arm's reach of the hypothetical aether. Nonetheless, the implicit results are the same now as they were when Aristotle looked up at the night sky: We lack evidence of any tangible matter, besides stars and space dust, filling outer space.

[22] *De Caelo,* 1.9.278b16-18. Aristotle here notes two other uses of the word *ouranos*, "heaven," one more general and one more restrictive, saying that "heaven" is also used to name the universe as a whole and also the outermost sphere of the fixed stars (278b11-21). The one we have quoted, however, seems Aristotle's preferred use.

[23] If it were only the stars and planets in which Aristotle was interested, the argument for their existence would of course be quite simple: Look up. Aristotle, however, argues in a philosophical mode in *De Caelo,* 1.2, presenting multiple reasons, all based indirectly on the experience of the heavenly motion, but none simply reducible to that experience. At any rate, the nature of the stars and planets is not taken up until 2.7, where he argues from the nature of the heavenly substance in general to that of the stars, for "the most reasonable and fitting account for us [to offer] is that each of the stars is made from that sort of body in which happens its habitual motion, since we have said that there is something naturally apt to moving in a circle" (289a14-16). This implies that in the earlier treatment of aether in 1.2ff. Aristotle does not yet distinguish between stellar/planetary aether and the aether of the entire heavenly region.

[24] For a compelling exposition and defense of Aristotle's arguments against the void, see St. Thomas, IV *Phys.*, lects. 1-14. For recent critiques of the notion of void underlying the Newtonian idea of absolute space, see R. Glen Coughlin, "Immobility of Place in Aristotle," *Philosophia Perennis* 1 (1994): 3-34; idem, "Some Considerations on Aristotelian Place and Newtonian Space," *Aquinas Review* 1 (1994): 1-48.

B) The Properties and Nature of Aether

Although Aristotle admits that there is little we can sense about aether, from the arguments for its existence he finds that he can infer certain properties of it that emphasize how different it is from ordinary matter. In order better to assess its likeness with and difference from recent physics's version of aether, then, it will be helpful to sharpen our image of Aristotle's aether by summarizing some of its distinctive marks and how Aristotle is driven to them.

Since the heavenly substance is first apparent to us in virtue of its enduring circular motion, Aristotle immediately deduces three properties of the aether, two pertaining to its motion, and one pertaining to its endurance.[25] Because we clearly see that the heavens have a perpetual, and therefore probably natural, circular motion, and not an upward or downward rectilinear motion, we may take as corollaries that celestial matter is simple, that is, not a compound of elements, and that it is neither heavy nor light. Given that the circle is the simplest possible shape and that the path of this motion is perfectly circular, it seems that it would be effected by only one internal principle or cause, that is, by only one elementary nature; so, aether must be simple.[26] Likewise, defining heaviness and levity as natural inclinations toward or away from the center of the Earth, and seeing signs only of a natural inclination to rotate around the center, it seems "impossible that the body being borne in a circle has heaviness or levity."[27]

Aristotle infers a third mark of aether when he says, "Likewise, then, with good reason we may posit concerning [the heavenly

[25] See *De Caelo,* 1.3-4.

[26] The simplicity of aether is most explicitly defended in the course of manifesting aether's existence in 1.2, e.g., at 269a2-7, 269a18-28. On the perfection of circles relative to straight lines, see *De Caelo,* 1.2.269a19-25.

[27] *De Caelo,* 1.3.269b31. At 269b32-270a5 Aristotle bolsters this conclusion by noting that every nature is inclined only toward one place, and therefore toward one kind of motion to that place, and adds that it does not even appear possible that aether could be forced to move upward or downward. The reason for this will become clear shortly in discussing aether's intangibility.

substance] that it is ungenerable and incorruptible, and that it is not capable of growth or alteration."[28] Although aether is evidently subject to change in place, it is not subject to changes in substance, quantity, or quality. Whatever undergoes a substantial change, Aristotle points out, does so because it is acted upon by a body with a contrary nature, while aether, whose only positive formal attribute noted so far is its circular motion, has no contrary, since circular motion has no contrary.[29] For the same reason, since growth always involves substantial change between opposites, change in the size of aether is not possible; and since alteration is ordered toward substantial change and involves expansion or contraction, "then just as the body with circular [motion] is not capable of growth or diminution, it is quite reasonable also [to say] it is inalterable."[30] With a reminder that this depends on whether "one has trust in those things laid down before," Aristotle reinforces the conclusion that the aether is immutable by saying, "the account, it seems, bears witness to the appearances and the appearances to the account."[31] He notes that all men have thought the heavens divine, and therefore immortal, and have even named the heavens with its eternity in mind, calling it (as we said before) the *aei thein*, "the always running." Perhaps most compellingly, Aristotle emphasizes in a passage quoted earlier that in the extensive and precise Babylonian, Persian, and Greek records of the positions and risings of the various constellations, no star has been observed to deviate from its

[28] Ibid., 270a14-15.

[29] Ibid., 270a15-33. Defending the claim that there is no motion contrary to circular motion is Aristotle's sole objective in *De Caelo,* 1.4; it is easy to see when the simple motions are defined as toward the center or centripetal, away from the center or centrifugal, and around the center or orbiting. For what is the opposite of an orbit? One might think of circular motions in opposite directions—clockwise vs. counter-clockwise—as contraries, but such directions are not really opposed. For what is clockwise when viewed from above is counterclockwise when viewed from below, and since "above" and "below" taken this way have no absolute significance (whether in a geocentric or in a heliocentric cosmos), any opposition or contrariety based on them would be merely subjective.

[30] Ibid., 270a34-35.

[31] Ibid., 270b4-5.

ordinary motion, to slow down or speed up, much less simply to go out or come into existence.[32]

Besides going on to argue that the heavens are finite in extension and that the incorruptibility of the aether is part of what makes possible the eternity of the cosmos as a whole,[33] this is all Aristotle concludes about the matter of the heavens in the first book of *De Caelo*. However, from these few properties of the aether—although they are almost entirely negative (i.e., what aether *is not*)[34]—in other contexts Aristotle and his disciples, most notably St. Thomas,[35] infer more corollary attributes of this new matter. Insofar as they shed further light on this almost inscrutable substance, we will briefly enumerate and explain them.

If aether is incorruptible two conclusions follow right away, one pertaining to its substantial principles and the other pertaining to its qualities. First, aether's prime matter and substantial form must be so perfectly united that the latter must actualize and thereby exhaust the potency of the former, insofar as an incorruptible body by definition must lack the potential to become anything else; aether must possess a "certain total and universal perfection" that thoroughly fulfills its potency for existence.[36] Indeed, if one were not to distinguish fulfilled and

[32] Ibid., 270b5-26. Likewise, although the planets, or "wandering stars," do appear to admit of changes in speed and direction, these phenomena are easily accounted for in terms of combinations of regular circular motions.

[33] Ibid., 1.5-7, 10-12. Although Aristotle has already determined in *Physics*, 3.5-6, that the universe is finite, at that point he had not yet shown that there is any matter besides what is composed of the four elements; thus, because some of the arguments there are based on the nature of the four known elements, Aristotle returns to the question here to see if the exotic nature of aether changes the conclusion. See St. Thomas, III *Phys.*, lect. 8, nn. 5-9.

[34] St. Thomas points out that our knowledge of the nature of the heavenly bodies, like our knowledge of God and of anything whose existence we must prove, must be principally if not entirely negative; see *STh* I, q. 88, a. 2, ad2.

[35] While some tend to see in St. Thomas a radical divergence from his teacher on some matters, there is no evidence of this in the case of the celestial substance. Not only is St. Thomas's exposition of Aristotle's arguments for aether and its properties (I *De Caelo*, lects. 4-8) among the longest *lectiones* in the work, it is packed with nearly thirty additional objections to the doctrine (many coming from Philoponus) and St. Thomas's rebuttals of them. Clearly the Angelic Doctor is committed to defending, and sometimes even elaborating, the notion of aether.

[36] St. Thomas, I *De Caelo*, lect. 6, n. 6; see also *STh* I, q. 55, aa. 1 and 2.

unfulfilled potencies, one might be tempted to say that the heavenly substance *has no* prime matter. More accurately, however, one should conclude that, unlike sublunary composites, aether's prime matter is always perfectly fulfilled, so it is inseparable from its form, and in this sense is not really distinct from it. Likewise, since its prime matter would not be a principle of aether's coming to be, but only of its being, it would not be the same sort of prime matter that is a principle of mundane substances (which is a principle both of coming to be and of being); it would be called prime matter only analogously.[37]

Further, anything that cannot be destroyed or even altered qualitatively must somehow be intangible. Aether must lack and not be susceptible to the action of the tangible qualities of temperature and pressure. If aether were cool, for instance, then it could be heated up by the immediate contact of a hot body, and likewise pressure exerted upon it by any contiguous sublunary body over time would incline it toward destruction, or at

[37] See Aristotle, *Metaphys.*, 8.1.1042b2-8; 8.4.1044b3-8; 12.2.1069b24-27. Thus St. Thomas will say that when "Averroes denies that the celestial body has matter. . . . if he understands that the celestial body does not have matter insofar as 'matter' is said in the order to motion or change, he speaks truly. . . . But if he understands the celestial body *in no mode* to have matter or some sort of subject, then he manifestly speaks falsely" (I *De Caelo*, lect. 6, n. 6, emphasis added). As St. Thomas explains elsewhere, "it must be admitted that the [prime] matter of the celestial body, considered according to itself, is not in potency except to the form that it has. . . . Whence that form so perfects that matter that in no mode does there remain in it a potency toward being [*esse*], but only toward where [*ubi*], as Aristotle says. And thus there is not the same matter of the celestial body and of the elements except according to analogy, insofar as they agree in the notion of potency" (*STh* I, q. 66, a. 2). When he says there is no potency toward being he of course means no unfulfilled or deprived potency; the aethereal form *perfects* the matter, it does not destroy it. Prime matter is still present as a principle in aether because aether is not itself a subsistent form and it retains a potency or ordering toward its substantial form (see *De sub. sep.*, cap. 8, ¶ 86); however, its potency is exhausted by this form, thereby removing all privation from it. Thus, its matter and its form cannot exist apart from each other, and the physicist, who comes to the notion of prime matter through an analysis of substantial change and the real separation of the principles, would not even be inclined to say that there is a distinction between the principles in aether. However, the metaphysician, whose interest is being as such, would make a resolution of the heavenly substance revealing prime matter and form as really distinct principles even in aether—albeit form and matter in an equivocal sense when compared to those of mundane substances.

minimum would alter it in some measure.[38] Both of these results are impossible if the celestial body is wholly immutable, and thus elsewhere Aristotle emphasizes that wherever there is no shared matter there cannot be mutual agency.[39] But if aether cannot be pressed upon by ordinary matter, then if some body were to try to press upon it, that body would cut right through the aether unhindered; even more than the ever-present yet barely noticeable medium of air through which we walk and run, the aether would yield and be cleft without any resistance. Paradoxically put, being wholly impervious to alteration entails that aether be perfectly pervious to something trying to press upon it.[40]

These properties remain largely negative. There is a related, more positive avenue for detecting distinctive marks of aether. Besides its circular motion, one other aspect of aether might

[38] Aristotle notes elsewhere (e.g., *De Gen. et Cor.*, 1.5.320b18-21) that pressure results in heating, and so again the aether would have a degree of heat in it.

[39] See *De Gen. et Cor.*, 1.6.322b13-21; 1.10.328a18-24.

[40] Aristotle speaks of the intangibility or subtlety of aether only occasionally and in passing (e.g., *De Caelo,* 2.4.287b15-22; 4.4.382a7-21; 4.5.382a14-28), for the obvious reason that the thought-experiment of someone pushing on the heavens is imaginable to him only *per impossibile.* (On the other hand, Aristotle may be entertaining the possibility of sublunary matter somehow violently being pushed over the boundary into the lower part of the aethereal region when he speculates that the region near the orb of the moon may be filled with impure aether; see *Meteor.*, 1.3.340b6-14.) He does, however, present a simple argument that aether is perfectly yielding when he says that if aether resisted terrestrial bodies, their motion against each other would produce a tremendous sound, which is not observed; see *De Caelo,* 2.9. At any rate, St. Thomas rightly sees that this subtlety and intangibility follows from what Aristotle has said, and so dwells upon it more frequently; see IV *Phys.*, lect. 12, nn. 8, 13; I *De Caelo,* lect. 8, n. 15; II *De Caelo*, lect. 10, n. 13; III *De Anima,* lect. 17, n. 13; *STh* III, q. 54, a. 2, ad 2. Note also that it is tempting to confuse the nonresisting or yielding character of a substance with an allowance for interpenetration. They are not the same thing. Saint Thomas grants the former in the case of the aether, but rejects the latter (except by way of a miracle; cf. *STh* suppl., q. 83, aa. 1-4). One must recall that for one body to move another out of its way does not *necessarily* imply that the latter simultaneously resists being so moved—to be moved does not mean to be moved violently (*pace* Newton)—and only by equating these things would one be led to think that not resisting means not being moved, and therefore being interpenetrated. As we will show in a few pages, St. Thomas and Aristotle are more explicit in claiming that the aether can touch and move (*per se* and in all species of motion) sublunary matter without being touched and moved in return; the (in their minds) bizarre situation I am describing of aether being moved (*per accidens* and merely locally) by sublunary matter would be contrived and more of a thought-experiment for them, but not absolutely impossible.

almost be called sensible in virtue of the noticeable connection between certain heavenly and terrestrial motions, for example, seasonal changes and lunar tides. Even in Aristotle's time it was evident that these latter were the effects of the relative positions and motions of the sun and the moon, respectively.[41] In addition, the heavenly bodies' constant illumination of things here below shows that the aethereal agency emanates not only from the sun and the moon, but from the stars too, and that this agency must communicate itself across the tremendous expanse of the aether to reach us. Further, Aristotle and St. Thomas would argue, the aethereal substance would produce the seasons by being the cause not only of the changes in the length and temperature of the day, but also in some way of the cycle of life itself, the blooming of vegetation and the seasonal generation of animals. As Aristotle puts it in a well-known but cryptic passage, "Man *and the sun* generate man";[42] the heavenly substance, due to the perfection of its form, appears to be the ultimate physical cause not only of the seasons but also of *all* terrestrial change.[43]

Saint Thomas, developing Aristotle's aether doctrine and perhaps suspecting that the fact that aether both illuminates the Earth and simultaneously effects generation is not a coincidence, suggests that it is precisely in virtue of its luminescence that heavenly matter acts upon ordinary matter. Thus he states, "the powers of the heavenly bodies are participated in by the inferior bodies by the mediating of light."[44] When we recall that Aristotle and St. Thomas understood light to be the "act of the transparent as such," we see that on this account light is present not merely in

[41] On the sun's motion and relative position as the cause of seasonal changes, see *Meteor.*, 1.9, 2.2-3; *De Gen. et Cor.*, 2.10.336a32-b19; 337a1-32; on the moon's relation to the tides, see St. Thomas, *STh* I, q. 70, a. 1, ad 5.

[42] Aristotle, *Phys.*, 2.2.194b13 (emphasis added). Saint Thomas explicitly proposes that aether is the cause of substantial forms of all bodies here below, expanding on things Aristotle only hints at (II *De Caelo*, lect. 10, n. 12).

[43] *De Caelo*, 2.1.284a9-12. This is also part of the upshot of the argument in *Physics* 8 that there is a first mobile whose natural motion is circular; he is referring of course to the heavens.

[44] St. Thomas, II *Sent.*, d. 17, q. 3, a. 1; see also II *De Caelo*, lect. 10, n. 12; *STh* I, q. 67, a. 3, ad 3.

the stars but in the entirety of the aether.[45] Indeed, if we consider that nothing around us is perfectly transparent—one can see only so far even through air—and that the distance between the Earth and the stars is almost inconceivable,[46] one sees that aether must be the most perfectly transparent substance in the cosmos. Thus St. Thomas will conclude that transparency is not only the active but also the *proper* quality of the heavens; all other bodies are called transparent only by participation in the nature of aether, the way other things are hot by participation in the nature of fire.[47] Further still, if transparency, rather than being merely a privation of color, is a positive nature, as Aristotle believes,[48] we have found our first positive quasi-sensible quality in the aether: its supreme transparency and, in some cases, luminescence.[49]

Further, considering aether's universal agency in conjunction with its immutability, two critical consequences follow. First, we have implicitly granted that aether acts upon ordinary matter and, since it is inalterable, that it is not acted upon in turn by it; aether can "push" on ordinary matter without being "pushed back." Thus Aristotle will conclude that

> While usually the thing touching is touched by what it touches—for nearly all the things we come upon move while also being moved, and in these cases it is necessary and apparent that the thing touching is touched by what it touches—still it also occurs (as we sometimes say) that only the mover may touch the moved, while the thing touched does not touch the one touching it. But because things of the same kind are moved [in return] when they move others, it *seems* to be necessary that [movers] be touched by what they touch. Whence

[45] Aristotle, *De Anima,* 2.7.418b8-9; St. Thomas, II *De Anima,* lect. 14, nn. 6-7.

[46] See above, notes 1 and 4.

[47] St. Thomas, II *Sent.*, d. 13, q. 1, a. 4; *STh* I, q. 67, a. 3; II *De Anima,* lect. 14, n. 22; *De Sensu,* lect. 6, nn. 7-9.

[48] See *De Anima,* 2.7.418b4-15. Transparency is in some way more positive than color is, the latter being a deficient participation in *lumen,* whereas the former is a more perfect one. Aristotle and St. Thomas further argue that since colors can exist in an intentional mode in what is actually transparent, this too suggests that transparency is a higher, and therefore not merely privative, mode of being; see St. Thomas, *De Sensu,* lect. 6. Note also that modern science also implicitly denies that transparency is merely a privation; put simply, if darkness is the privation of light and color, transparency cannot be.

[49] See St. Thomas, II *De Caelo,* lect. 10, nn. 3 and 12-13; *STh* I, q. 66, a. 3, ad 4.

if something unmoved moves another, although it will touch the thing moved, nothing [will touch] it.[50]

Drawing on this distinction, St. Thomas notes this peculiarity of aether:

Bodies act upon each other by touching, whence it follows that they are simultaneously acted upon [in return], since what touches is acted upon. But this should be understood [only] when there is *mutual* contact [*mutuus tactus*], as happens in those things that share in a common matter, each of which is being acted upon by the other while they are touching each other. The heavenly bodies, however, because they do not share a common matter with inferior [i.e., sublunary] bodies, act upon them such that they are not acted upon by them [in return]; they touch and are not touched.[51]

This one-way contact and causality may seem absurd at first glance. While the doctrine is contrary to our Newtonian "equal and opposite reaction" prejudices, Aristotle argues persuasively that it is not impossible, as motion is an actuality not in the mover as such but in the mobile. Thus it is not essential to the notion of one thing's moving another that the latter move the former in response.[52] Indeed, the cause of such agency being only one-way is the aether's incorruptibility, and therefore, at least in part, the aforementioned difference between its prime matter and ours.

Second, while aether lacks the qualities of sublunary matter, it must be able to generate them in the latter; that is, aether must be an equivocal cause, possessing the predicates it gives its patients in an equivocal, or more accurately, *analogous,* and therefore

[50] *De Gen. et Cor.,* 1.6.323a26-32 (emphasis added). In this same passage Aristotle argues that mutual agency and mutual contact require that both bodies have position and place. If, however, place is not univocally said of celestial and terrestrial matter, again they must lack mutual contact and agency; see 322b27-323a13.

[51] III *Phys.,* lect. 4, n. 5 (emphasis added); see also II *De Caelo,* lect. 10, n. 13; *ScG* II, ch. 56, n. 5.

[52] Aristotle, *Phys.,* 3.2.202a3-12. Aristotle's application (and, implicitly, restriction) to sublunary matter of his own version of Newton's third law can be spotted at *De Motu Anim.,* 698b13-18. Obviously if it were a part of the notion of agency that every mover be moved in reaction, any argument from motion to God's existence would be doomed.

higher, or intentional, mode of existence.[53] For example, the sun induces heat in the bodies around us, but it is not itself hot (for its heat would eventually consume it, and also it would have a natural motion upward), so it must possess heat according to a different *ratio,* in such a way that heat does not inform the aethereal matter.[54] Likewise, then, St. Thomas says that aether is so radically unlike sublunary matter that any predicates that the two have in common will be only analogous:

> Many things that are not equivocal according to the abstracted consideration of either the logician or the mathematician nevertheless *are* in a certain mode said equivocally according to the concrete notion of the physicist applying [them] to matter. For such [predicates or forms] are not received according to the same notion in every matter whatsoever, just as it happens that one does not find quantity and the unity that is the principle of number according to the same notion [*rationem*] in the celestial bodies and in fire, in air, and in water. . . . Some equivocations, however, are proximate, on account of an agreement in genus, just as if "body" be said of the celestial body and of a corruptible body, it is said equivocally, speaking according to the natures of things [*naturaliter loquendo*], since their matter is not one. Nevertheless, they agree in logical genus [*in genere logico*], and on account of this agreement of genus appear not to be wholly equivocal. . . . Whence, on account of this proximity of genus or of likeness, they do not *appear* to be equivocations, while nevertheless they *are*.[55]

The student of nature, paying attention not merely to the abstracted and most generic consideration of a form—the playing field of the logician or mathematician—will study the being of the specific nature of a physical substance and, if necessary, will

[53] Although Aristotle does not seem to use the name "equivocal cause," he does insist that the cause is sometimes like the effect by being only "of the same genus. . . . For the hard is not generated by the hard" (*De Gen. et Cor.,* 1.5.320b20-22; cf. also *Metaphys.* 7.8.1033b30-1034a9). On equivocal causality in general, see St. Thomas, *STh* I. q. 4, a. 3; VII *Metaphys.,* lect. 7, nn. 16-19; lect. 8, nn. 13-27) and with reference to the heavens, see II *Phys.,* lect. 4, n. 10; lect. 6, n. 3; lect. 11, n. 2; VIII *Phys.,* lect. 10, n. 4; II *De Caelo,* lect. 1, n. 4; *De Pot.,* q. 3, a. 11, ad 14. This higher mode of possession, while necessary, is difficult to describe; St. Thomas refers to it variously as an "intentional," or "excelling," or "more eminent mode of being," or as a "total," or "less contracted and more universal" form, one that is "more dominating over matter."

[54] *De Caelo,* 2.7.289a11-35; *Meteor.,* 1.3.341a17-19; St. Thomas, II *De Caelo,* lect. 10, nn. 6-10.

[55] St. Thomas, VII *Phys.,* lect. 7, n. 9; and lect. 8, n. 8 (emphasis added).

qualify the logician's univocal predication of some terms. Although an investigation of the relationship of the logician and the physicist, and of that between logical and natural genera, is beyond the scope of this article, this much is clear: Celestial matter's heterogeneity with mundane matter requires that it be called a quantity, one, a body, and even matter and substance only by way of analogy.[56]

A provocative example of this ambiguity about how or whether the heavens possess attributes like those of ordinary matter concerns the predication of motion, place, and time. We have seen that Aristotle attributes to aethereal matter both immutability, in virtue of which it endures through all ages, and circular local motion, which reflects its perfection and by which it acts upon the sublunary world. While this appears to be almost a contradiction—a perfect lack of three kinds of change but an inalterable possession of the fourth—it is not. For while Aristotle admits that aether moves locally, by granting it *circular* motion he mitigates its existence as a motion. What Aristotle means by circular motion is not the motions of the stars and planets, which appear to be progressive motions of bodies tracing out circles. Rather, circular motion is the motion proper to a sphere, a revolution about its axis, and the motion of the aether as a whole: a stationary rotation, not an orbit.[57] On this account circular motion is not strictly a change of place, but a change *within* a place. Only the parts of the heavenly sphere, and not the whole, can leave one place and enter another.[58] The most perfect and primary source of natural motion within the physical order is least

[56] Analogy is itself analogous, and I do not mean to say that each of these is predicated according to exactly the same sort of analogy. For example, "body" (and likewise "quantity") is first said of heavenly and terrestrial bodies with the *same notion* in mind—and hence the logician predicates these terms univocally—although in the determinate natures themselves their corporeity is not the same. "Matter" said of the heavenly and sublunary, however, seems to signify different notions *and* different realities. To see the basis for this distinction, consider the passages quoted above in conjunction with *De Pot.*, q. 7, a. 10, ad 7; and *STh* I-II, q. 113, a. 5, ad 1.

[57] *De Caelo*, 2.8, and St. Thomas, II *De Caelo*, lect. 12, nn. 1-4; lect. 13, n. 3.

[58] See Aristotle, *Phys.*, 4.4.211a19-23; 4.5.212b2-13. Even the parts, the stars, do so such that they are always approaching both the end and the beginning, namely, the center, so that here too the motion is somehow static.

of all in motion, both because *local* motion is the least of all changes, and because *circular* local motion is least of all a local motion.[59] Hence there is a sort of equivocation when we predicate local motion of the heavens, and Aristotle may coherently say, as he does at the end of his discussion of place, "the periphery of that which is carried in a circle [i.e., the aether], always bearing itself in the same way, rests . . . [and] in a way moves and in a way not."[60]

For related reasons aether does not simply speaking have a location and is only analogously in place. To the extent that heavenly matter is not univocally said to be in motion we would think it is at rest, and therefore in place, but Aristotle says that we must resist or at least qualify this inference. The root of this restraint lies in his discussion and ultimate definition of place in *Physics* 4 as the "first immobile limit of the containing body."[61] Because the substance continuously filling the cosmos from the sublunary regions to the periphery obviously has no container of its own—it *is* the first container of everything else—then it must not have a place.[62] Being itself the ultimate source and measure of all other bodies' locations and local motions,[63] aether is not itself, properly speaking, located.

Place may, however, be attributed to aether in secondary or extended ways. Because the heavenly substance gives all other things place, place may be predicated of it according to the mode in which an effect is always somehow predicable of its *per se* cause, just as, for example, "healthy" is predicated of a climate conducive to health. Likewise, one can say aether is in place

[59] See Aristotle, *Phys.*, 8.8-9, especially 265a13-b15; St. Thomas, I *De Caelo*, lect. 6, n. 7; lect. 8, n. 13.

[60] Aristotle, *Phys.*, 4.4.212a24, 4.5.212a35. Saint Thomas suggests a number of reasons why the aethereal circular motion cannot be compared with the natural rectilinear motions we experience in tangible matter, all of which suggest that there is some kind of equivocation when we call the former a local motion; see VII *Phys.*, lect. 7, n. 5.

[61] See *Phys.*, 4.1-4, especially 4.212a7-21.

[62] See Aristotle, *Phys.*, 4.5.212a32-b21; St. Thomas, IV *Phys.*, lect. 7, n. 2; II *Sent.*, d. 2, q. 2, a. 1, conclusion.

[63] See St. Thomas, IV *Phys.*, lect. 3, n. 2; lect. 6, nn. 9, 14-16; lect. 8, n. 7; *STh* I, q. 66, a. 3, ad 2; I, q. 66, a. 4, ad 5.

because it is in itself, meaning merely that it is not contained by another.[64] In addition, the celestial matter can be truly said to have place, and even motion, *per accidens* and *secundum rationem,* that is, in virtue of its parts having place and motion *per se*.[65] In any of these senses, however, there is an evident loosening or extension of the meaning of the word "place"; place is being said of aether only analogously.[66]

The other external measure of natural bodies (besides location) is time, and in this case too we find that there is a degree of equivocation when it is said of the heavens. Again looking back to *Physics* 4,[67] we see that the nature of time is that it be the number or measure of motion, and the uniformity and eternity of time come from its being the measure of local motion most of all, since only this motion, specifically circular motion, can be interminable and uniform. Thus, while aether's motion is not the same thing as time, Aristotle suggests that it seems in some way to be the proper subject of time—that is, what is being counted when one distinguishes the before and after in motion.[68] But if the motion of the heavens underlies time, then time cannot itself underlie and be prior to that motion.[69] While in an analogous sense aether may be said to be in time, meaning that it is simultaneous with time and not utterly without *per se* relation to it,[70] nevertheless its infinite duration precludes its substance being bounded or limited by ordinary temporal predicates. Thus the heavenly substance is

[64] See St. Thomas, IV *Phys.,* lect. 4, nn. 9-10.

[65] On aether's *per accidens* possession of place via its parts, see St. Thomas, IV *Phys.,* lect. 7, nn. 7-9; on its *per accidens* possession of local motion via its parts, see VIII *Phys.,* lect. 7, n. 2; I *De Gen.,* lect. 11, n. 5.

[66] This becomes still more evident when one notes that the parts of aether are only potentially distinct from each other, and so have place and motion only potentially or virtually. See St. Thomas, IV *Phys.,* lect. 7, nn. 7-14.

[67] Aristotle, *Phys.,* 4.10-14, esp. 4.11.

[68] See *Phys.,* 4.14.223b13-34; St. Thomas, IV *Phys.,* lect. 19, n. 4; lect. 23, nn. 11-13.

[69] See St. Thomas, II *De Caelo,* lect. 1, n. 12; *De Malo,* q. 16, a. 4; St. Thomas adds that therefore aether is measured not by time but by *aevum,* a sort of imperfect image of the Divine eternity; see also I *Sent.,* d. 19, q. 1, a. 1.

[70] See Aristotle, *Phys.,* 4.12.221a9-21; St. Thomas, IV *Phys.,* lect. 20, n. 3.

not in time;[71] more properly speaking it transcends time, or is atemporal.[72]

Although this ambiguous predication of motion, place, and time in aether is at first perplexing, it is a necessary consequence of making the heavens an ultimate cause and measure of place and motion in sublunary matter. The unending rotary motion of the heavens must evidently be motion and not rest—for *it moves* in a circle—and yet also, not motion but rest in place—for it moves *in a circle.* Likewise, this uniform and eternal motion is the foundation of time, so it does not exist at or for a certain time. Put another way, while aether is obviously a mobile (indeed, the *primum mobile*), it is somehow immobile because it is an ultimate mover. While it is obviously somewhere, it is not in place because it somehow *is* place. While it obviously exists now and always, it does not exist within time because somehow *time* exists *in it.*

Obviously there is little in common between the matter with which we have immediate experience and this subtle and obscure celestial matter. As St. Thomas puts it,

> The celestial bodies are far away from us not only according to quantity of spatial distance, but even more so in that few of their accidents fall under our senses, while it is nevertheless connatural to us that we proceed from accidents, i.e., sensibles, to cognizing the nature of some thing. . . . But the accidents of the celestial bodies are of a different notion altogether [*alterius rationem*] and are wholly disproportionate to the accidents of inferior bodies.[73]

We may say many things negative about aether, and what positive predicates we may apply to it must be extensions of the first impositions of words—they must be analogies. As Aristotle has said, we have little to go on in determining the nature of aether; what we do have, however, is enough to make some elementary deductions about it, even if they finally must entail analogical predication. While not all of these properties have survived the

[71] See Aristotle, *Phys.*, 4.12.221a1-24, b25-31; St. Thomas, IV *Phys.*, lect. 20, nn. 2-4; II *De Caelo,* lect. 1, n. 2.

[72] St. Thomas, IV *Phys.*, lect. 20, n. 6; I *De Caelo,* lect. 6, n. 5; II *De Caelo,* lect. 1, n. 2; *De Pot.,* q. 5, a. 4, ad 1.

[73] II *De Caelo,* lect. 4, n. 3.

test of time, the aether itself and many of these distinctive marks have, specifically within the theories of twentieth-century physics. But before we turn to the recent rehabilitation of aether, we must say a few things about its precarious perpetuation, revision, and demise in early modern physics.

II. The Fate of Aether in Classical Physics and the Special Theory of Relativity

A) The Not-So-Aethereal Aether of Newtonianism

The heliocentric hypothesis in the late sixteenth and early seventeenth centuries, while it did not overturn the idea of a heavenly aether, induced a skepticism in some about its necessity. If the daily circular motion of the stars is attributable to the Earth itself, the only foothold we have on aether seems to slip. Although for Copernicus the planets and moon must still forever move in perfect circles—thus tempering the temptation to discard the argument of *De Caelo* 1.2—so must the Earth, while the outer sphere containing the so-called fixed stars must not; thus circular motion is not a peculiar property of aether *as such*. Aether, it seems, is not to be posited to explain the night sky, since its motion is as mundane as it is celestial.

This does not by itself respond to Aristotle's critique of void, and therefore of the assumed emptiness of the heavens. Granting the real possibility that the luminous part of the heavens (i.e., the stars and planets) may not be essentially different from ordinary matter, *most* of the heavenly expanse remains unaccounted for. For if nothing is in any manner detectable there, but something *must* be there, the natural suspicion would be that this physical "something" is a different order of matter, that is, is essentially aethereal.[74]

[74] Perhaps having heard an argument of this sort, Galileo takes some pains to establish the reality of a void; see *Two New Sciences*, trans. Stillman Drake, 2d ed. (Toronto: Wall and Thompson, 1989), 20-80. He even addresses the weaker *Physica* 4 arguments. While his arguments about free-fall correct some of Aristotle's views, his arguments on the whole, turning on a confused and confusing understanding of the infinite and the indivisible as principles of magnitude, are less convincing.

While this argument may have been in the background during the early modern era, Isaac Newton embraced aether by way of another. Rejecting the idea of action at a distance, calling it "inconceivable," and "so great an absurdity that I believe no man who has in philosophical matters a competent faculty of thinking can fall into it,"[75] Newton speculated about how else to explain the distant communication of gravitational forces mathematically described in his *Principia*. Following something akin to the Aristotelian recognition that an aethereal medium is needed as an instrumental agent of the action of the stars on bodies around them, Newton posited aether as the medium through which the sun holds the planets in orbit.[76] Although unsatisfied with his mechanical models of how aether could exercise its agency, and hesitant to publish his general speculations, Newton does not seem to have doubted that some such principle was necessary to complete his account of gravitational attraction.[77] Further, and again like Aristotle and his disciples, Newton saw light as additional evidence for an aether, though, unlike his predecessors, he did not see aether as the subject or medium of light. Specifically, Newton posited aether to explain certain diffractive and refractive properties of propagated light and related electrical phenomena.[78] Thus while aether was needed in the heavens, it

[75] Isaac Newton, "Letter to Bentley, Feb. 25, 1692-3," in *Isaac Newton's Papers and Letters on Natural Philosophy,* ed. I. Bernard Cohen, 2d ed. (Cambridge: Harvard University Press, 1978), 302-3.

[76] Isaac Newton, "An Hypothesis Explaining the Properties of Light," in ibid., 180-81; *Opticks,* query 21, in Great Books of the Western World, vol. 34 (Chicago: Encyclopedia Britannica, 1952). See also Ernan McMullin, *Newton on Matter and Activity* (Notre Dame, Ind.: University of Notre Dame Press, 1978), 75-109.

[77] On Newton's many attempts at formulating a mechanically sound aether theory, see G. N. Cantor and M. J. S. Hodge, "Major Themes in the Development of Ether Theories from the Ancients to 1900," in *Conceptions of Ether: Studies in the History of Ether Theories, 1740-1900,* ed. G. N. Cantor and M. J. S. Hodge (Cambridge: Cambridge University Press, 1981), 19-24. Newton's awareness of the severe wrinkles in need of ironing out of his aether theory is probably one of the primary reasons he is so noncommittal about the seat and cause of gravitational forces in the *Principia*. (Note that "ether" is an alternate spelling of "aether"; I use the latter spelling, although when authors quoted use "ether" I will not change it.)

[78] It also served in Newton's mind to explain certain chemical processes and the deceleration of the pendulum in an "evacuated" vessel. See Isaac Newton, "Letter to Boyle, Feb. 28, 1678-9," in Cohen, ed., *Isaac Newton's Papers and Letters,* 250-53.

would have to exist here below as well; in line with Copernicus, aether was no longer only celestial.

Many of Newton's contemporaries and successors, however, presented a conception of light even more like Aristotle's actuality of the transparent by arguing that light needs aether merely to exist. While Newton insisted that light is a particle, Thomas Young and others offered compelling arguments that light is a wave,[79] and, as Oliver Lodge would one day reiterate, "waves we cannot have, unless they be waves in something."[80] Implicitly invoking an Aristotelian principle at the root of Aristotle's rejection of void, Young and others inferred that if light is not a substance but an accident, it must be an accident *of something.* Looking to the expanse of apparently empty space across which light radiates, wave theorists saw the presence of a luminiferous aether. This need for a light-bearing aether was reinforced in the nineteenth century by James Maxwell's discovery that light, electricity, and magnetism are different aspects of the same physical phenomenon. The empirical data and mathematical formalism of electromagnetic theory suggest that, as Maxwell put it, "there is an aethereal medium filling space and permeating bodies."[81] The electromagnetic field is not a mere mathematical abstraction, but a description of a modality or stress in the ubiquitous and immobile aether.

Even so, early modern revisions of aether as a medium of gravitational and electromagnetic interactions should be carefully distinguished from Aristotle's heavenly substance. Unlike the latter, this new aether is in a real way *not aethereal.* Newton, for example, knew that any substance lacking inertial mass, and therefore resistance to pressure—in the language of Aristotle and St. Thomas, intangible and perfectly yielding matter—would violate his laws of motion;[82] it would not follow what came to be

[79] See Thomas Young, "On the Theory of Light and Colours," *Philosophical Transactions of the Royal Society* 92 (1802): 12-48.

[80] Oliver Lodge, *The Ether of Space* (London: Harper, 1909), 2.

[81] Quoted in K. F. Schaffner, *Nineteenth Century Aether Theories* (New York: Pergamon Press, 1972), 81.

[82] Especially his third law, that "To an action there is always a contrary and equal reaction."

called "classical" mechanics. Likewise, because inertial mass is proportional to gravitational attraction, such a body would not gravitate; universal gravitation would be not quite universal. But most importantly, a truly aethereal substance like this would in principle be experimentally undetectable, for it would not resist and thereby affect measuring devices or test-particles. Although a perfectly noninertial medium could make more substantial and intelligible Newton's problematic doctrine of absolute space, the immobile reference frame of true motions and the forces that cause them, nevertheless he was adamant: Such matter would not be "a phenomenon," and would have "no place in experimental philosophy."[83] While admitting a need for a pervasive medium—although not a truly continuous one, since he embraced atomism, and therefore also the reality of voids[84]—Newton granted it a very small, but nevertheless in principle detectable, mass, and therefore also a proportionate resistance and gravitational attraction.[85] Thus, when he retains the word "aether," he means something that differs from ordinary tangible matter not in kind but only in degree.

Young and Maxwell's medium of light and electromagnetism was likewise assumed to be minimally inertial, massive, and tangible in theory. Despite the occasional discovery of evidence challenging the hypothesis that the luminiferous aether was merely a more tenuous kind of ordinary matter, the hypothesis that all matter must be inertial was not questioned.[86] The

[83] Quoted by McMullin, *Newton on Matter and Activity*, 97. McMullin notes, however, that Newton could not consistently hold himself to this bar; Newton knew that natural science does not really offer an *understanding* of nature until it asks and tries to answer the more philosophical questions. See ibid., 125-27.

[84] See, for example, Newton, "Letter to Boyle," 250-53; *Opticks*, queries 21 and 31.

[85] See Newton, *Opticks*, query 21; McMullin, *Newton on Matter and Activity*, 96-101.

[86] For example, there was great difficulty in identifying the luminiferous aether as a solid, a liquid, or a gas; while its subtlety and minimal mass per volume suggested that it is gaseous, the swiftness with which it transmitted light suggested that it is solid. Likewise there were difficulties with saying that it transmitted light as a longitudinal (i.e., compression) wave or as a transverse wave (i.e., a displacement of the medium, like a water wave); on the one hand, light propagates spherically, suggesting a compression wave, while polarization phenomena suggest transverse displacement. See Henry Margenau, *Open Vistas: Philosophical Perspectives on Modern Science* (Woodbridge, Conn.: Ox Bow Press, 1983), 108-9. Oliver Heaviside wrote in 1889 that "It often occurs to me that we may be wrong in thinking of the aether as a kind

electromagnetic wave was understood to be a measurable force and transient attribute of the aether not unlike the stresses and strains in an elastic body or set of bodies, and therefore this aether by definition would be subject to Newtonian mechanics.[87] In addition, the luminiferous aether was posited as the reference frame in which Maxwell's electromagnetic field equations obtained perfectly, and therefore was the coordinate system or stationary container of all local motion. It was assumed to be necessarily immobile.[88] But this assumes that place and motion, or the lack thereof, are univocally present in the aether—unlike in the traditional aether.

Although Newton and the others did not invoke a full-blooded aether concept, nevertheless with the empirical success of universal gravitation and electromagnetism came the embrace of the reformed (or perhaps to Aristotle, deformed) aether among physicists. This embrace lasted until the dawn of the twentieth century and was so tight that renowned physicists would say, "We know there is an ether," and "The probability of the hypothesis of the existence of this element is extremely close to certainty."[89] The aether of classical physics had the virtue of undoing what is commonly considered an embarrassingly *ad hoc* Aristotelian

of matter ([an] elastic solid for instance) accounting for its properties by those of the matter in bulk with which we are acquainted" (quoted in Schaffner, *Nineteenth Century Aether Theories,* 90). Lodge was likewise cautious about making too strong an analogy between ordinary and aethereal matter: "Ether is often called a fluid, or a liquid, and it again has been likened to a jelly because of its rigidity; but none of these names is very much good; all are molecular groupings and therefore not like ether" (Oliver Lodge, "The Ether and its Functions," *Nature* 27 [1883]: 304). Perhaps more attention should have been paid to these cautionary remarks.

[87] Margenau, *Open Vistas,* 105-11. This dilution of aether until it becomes essentially indistinguishable from ordinary matter is confirmed in the constant tendency (in Newton, Young, Maxwell, and most nineteenth-century physicists) to imagine and treat aether, even in the mathematical formalisms, as atomic; see ibid., 110-11.

[88] See ibid., 112-13. The possibility was entertained—and then refuted (see n. 92)—that aether was dragged along by the Earth via a convection current; convection too, however, implies that luminiferous aether acts like ordinary matter.

[89] Heinrich Hertz in 1889 and J. Chwolson in 1902, respectively, the former quoted by Schaffner in *Nineteenth Century Aether Theories,* 101; the latter by Albert Einstein in "The Development of Our Conception of the Nature and Constitution of Radiation," in *The World of Physics,* vol. 2 (New York: Simon and Schuster, 1987), 295.

partitioning of nature into two essentially heterogeneous categories of substance. Nevertheless, this homogeneity and unification of the cosmos came at a price, for it required a dilution of the meaning of the word "aether." This price did not at first seem costly; indeed, it seemed to be an asset because it rendered aether more accessible to experimentation and mathematical conceptualization. But there were hidden expenses that would prove problematic and insupportable. The particular nature of classical physics' aether would make it vulnerable to a kind of refutation that Aristotle would have considered irrelevant: the Michelson-Morley experiment.

B) The Michelson-Morley Experiment and Special Relativity

On the supposition that the immobile luminiferous aether follows Newton's laws and resists the motion of other bodies, physicists after Maxwell looked for ways to measure its mass and inertial properties. In one such test at the end of the nineteenth century, Albert Michelson and Edward Morley attempted to estimate the speed of the Earth relative to Maxwell's stationary medium. The idea was that a sort of aether "wind," caused by the Earth's motion through the aether, might be detected by shining a light in the direction of the Earth's motion and comparing it with light shining in a direction less affected by the motion. Taking the absolute speed of light to be the same as its speed relative to the aether, Michelson and Morley inferred that the apparent speed of the two light beams should not be a constant; rather, when shining in the direction of the Earth's motion, it should be slower than when shining in a direction perpendicular to that motion. The experiment was done with a simple interferometer, with light rays simultaneously sent in perpendicular directions toward mirrors, which reflected them back to the source, where they would intermingle and betray signs of the anticipated unequal speed in the interference pattern. Such signs, however, did not turn up; regardless of direction, the light rays seemed to travel at the same speed. Apparently there was no

relative motion between the Earth and the aether.[90] Michelson and most of his contemporaries concluded that aether near the surface of the Earth must not be immobile but dragged along by the Earth's motion.[91] Because of this "atmosphere" of aether, no relative motion occurs in the Earth's immediate vicinity. This notion of a mobile luminiferous aether, however, was soon rejected on the basis of further experimentation.[92] How do we explain the null-result of the Michelson-Morley experiment?

H. A. Lorentz and George FitzGerald stepped in to propose an answer. A small but fixed contraction of matter in the direction of the Earth's motion would shorten one arm of the interferometer, thereby giving the light beam less distance to cover and thus allowing it to return to the source at the same time as the light beam directed along the other, uncontracted arm. Although he could not offer a precise mechanism for this phenomenon, Lorentz attributed it to some hitherto unknown influence of the aether.[93] Lorentz-FitzGerald contraction saved the appearances and was mathematically sound,[94] but was criticized as *ad hoc*, having the virtues neither of elegance nor of making new predictions.[95] And it was finally replaced by a theory that had both.

[90] Michelson and Morley's three papers, originally published in the *American Journal of Science* in 1881, 1886, and 1887, are reprinted as appendices in Lloyd S. Swenson, Jr., *The Ethereal Aether: A History of the Michelson-Morley Aether-Drift Experiments, 1880-1930* (Austin, Tex.: University of Texas Press, 1972), 247-85. Swenson offers a more detailed account of the experiment at ibid., 65ff.

[91] See Edmund Whittaker, *A History of the Theories of Aether and Electricity*, vol. 1, rev. ed. (London: Nelsen, 1951), 390-92.

[92] See Swenson, *The Ethereal Aether*, 190-233; H. A. Lorentz, "Michelson's Interference Experiment," in H. A. Lorentz et al., *The Principle of Relativity: A Collection of Original Memoirs on the Special and General Theory of Relativity*, trans. W. Perett and G. B. Jeffrey (New York: Dover, 1952), 3-4. The aether "atmosphere" idea implied that light from distant stars should undergo an aberration depending the direction from which it comes, and this aberration is not observed.

[93] See Lorentz, "Michelson's Interference Experiment," 5.

[94] Lorentz-FitzGerald contraction has been recently defended by Rudoph Peierls ("Relativity," in *The World of Physics*, 172-73) and John Bell (quoted in *The Ghost in the Atom: A Discussion of the Mysteries of Quantum Physics*, eds. P. C. W. Davies and J. R. Brown [Cambridge: Cambridge University Press, 1986], 48-49).

[95] Max Born, for example, says Lorentz's theory is full of "very artificial assumptions" ("On the Meaning of Physical Theories," in *The World of Physics*, 63). While there is merit to this criticism, it seems to me hyperbolic, given what little was then (and is still) known

In 1905 Albert Einstein published his special theory of relativity and shortly thereafter declared that the luminiferous aether is an "outdated point of view. . . . [A] satisfactory theory is only achieved by renouncing the ether hypothesis."[96] This revolutionary theory encompasses not just the Michelson-Morley null-result, but also a wide range of physical phenomena. Combining the empirically based principle that the speed of light in a vacuum is a constant in all reference frames[97] and the philosophical principle that all laws of physics are the same for all coordinate systems regardless of their states of motion changes the entire worldview or natural philosophy of mathematical physics—so much so that the advent of relativity came to mark the transition from so-called *classical* (i.e., Newtonian) to *modern* physics. Put simply, Einstein's union of these two principles denies that there is any meaning to Newton's notions of *absolute* space, motion, and time. Thereby it offers what appears to be the simplest possible explanation of the Michelson-Morley null-result: there *is no* absolute reference frame for the Earth's motion, and therefore no aether, and therefore no "aether wind," which explains why no difference in the speeds of the two beams of light is detectable in the interferometer.[98]

Reducing measurements of time, space, rest, and motion to mere relative terms, although philosophically problematic to many, then and now,[99] has its merits. Not only did special

about the nature of light. Born, after all, is writing in the wake of the success of relativity theory, which offered the account of the null-result that is still accepted; hindsight is always 20/20.

[96] Einstein, "The Development of Our Conception of the Nature and Constitution of Radiation," 295, 299.

[97] This assumption of the constancy of the speed of light "in a vacuum" does not implicitly assume that aether does not exist; I am simply following common usage. "In a vacuum," of course, would also mean "in the luminiferous aether," until after aether was rejected.

[98] There are a number of more detailed yet simple explanations of how special relativity explains the results of the Michelson-Morley experiment; see, for example, Simon Saunders and Harvey R. Brown, "Reflections on Ether," in *The Philosophy of Vacuum*, ed. Simon Saunders and Harvey R. Brown (Oxford: Oxford University Press, 1991), 44-45.

[99] Bell still insists that a Lorentz-type aether is more plausible an account of nature than relativity, which he believes allows for time-travel and destroys any hope for a realist understanding of nature; see *The Ghost in the Atom*, 48-50. Those who recognize the great insights in the perennial philosophy of Aristotle and St. Thomas, of course, and therefore start

relativity shed the artificiality of Lorentz-FitzGerald contraction, it made new predictions—the most famous of which still is the convertibility of matter and energy, empirically vindicated quite publicly less than forty years later in the nuclear fires of Hiroshima and Nagasaki. And with the removal of the privileged coordinate system, the immobile luminiferous aether lost its relevance for the physicist, for, according to the prevalent attitude of logical positivism, what cannot be measured may just as well not exist.[100] Within a few decades after 1905, aether became a "metaphysical concept in the pejorative sense,"[101] as outmoded as Aristotle's geocentric universe,[102] or his bifurcation of nature into ordinary matter and his full-blooded, though more subtle, aether. Yet the latter was about to make a comeback.

III. Contemporary Science's Resuscitation of Aether

A) The Curved Space-Time of General Relativity

According to most accounts of the history of the aether in physics, that was the end of the story. Aether is dead and the Michelson-Morley experiment and special relativity killed it.[103]

from things better known to all men, will also conclude that the "orthodox" interpretation of relativity cannot be true without qualification. Unfortunately, there are few among us who have attempted alternative interpretations; nor will I propose one here, leaving that for better minds.

[100] On the prevalence of positivism among physicists as a partial cause of the acceptance of relativity, see Swenson, *The Ethereal Aether,* 185-88, 201, 231; and Bell, quoted in *The Ghost in the Atom,* 49.

[101] Swenson, *The Ethereal Aether,* 231.

[102] In histories of science it is often forgotten that, ironically, according to relativity it is as true to say that the sun revolves around the Earth, with Aristotle, as it is to say that the Earth revolves around the sun, with Copernicus. In a real sense Einstein undoes Copernicus, for he says that Copernicus and Aristotle were both right (*and* wrong).

[103] This is true most often of popularized accounts, even by serious physicists; see, for example, Margenau, *Open Vistas,* 114-15; Louis de Broglie, *Matter and Light: The New Physics* (New York: Dover, 1939), 266. More rigorous scholarly work tends to be more evenhanded about aether's continued tenure in recent physics; see Swenson, *The Ethereal Aether,* 187ff.; and especially Ludwik Kostro, *Einstein and the Ether* (Montreal, Quebec: Apeiron, 2000), *passim.* This latter work thoroughly explodes the myth that the mature Einstein saw himself as aether's hangman; rather, Kostro shows, after 1916 Einstein

Rumors of its death, however, had been greatly exaggerated, and a closer look at the content and history of the theories that have been accepted in twentieth-century science makes this manifest. Not the least among these theories is Einstein's generalized theory of relativity, just as not the least among those who interpret this theory in terms of aether was Einstein himself.

A decade passed between the publication of the special theory of relativity and the 1915 completion of the general theory, immediately after which Einstein realized that he had overstated his case against aether. General relativity—indeed, even *special* relativity—was compatible with and, in fact, *implied* an aether;[104] aether's "story, by no means finished, is continued by the relativity theory."[105] Relativity initiated a development and further aetherealizing of the physicist's understanding of the luminiferous aether that, we will see, bespeaks a conception more reminiscent of the intangible substance proposed by Aristotle.

Because special relativity had seemed to discard the luminiferous aether, we should start with it. In spite of his hyperbole in the decade after 1905, Einstein would later temper his remarks:

> careful reflection teaches us, however, that the special theory of relativity does not compel us to deny ether. We may assume the existence of an ether; only we must give up ascribing a definite state of motion to it, i.e., we must by abstraction take away from it the last mechanical characteristic which Lorentz had still left it. . . . The special theory of relativity forbids us to assume the ether to consist of particles observable through time, but the hypothesis of ether in itself is not in conflict with the special theory of relativity.[106]

consistently understood aether to be essential to relativity theory. (Note also that many of Einstein's writings quoted below are available in English only in Kostro.)

[104] In a number of writings, both published and unpublished, Einstein expresses his regret about his overzealous claims to have eliminated aether; see Kostro, *Einstein and the Ether*, 1-2, 76.

[105] Albert Einstein and Leopold Infield, *The Evolution of Physics* (New York: Simon and Schuster, 1938), 153.

[106] Albert Einstein, *Sidelights on Relativity*, trans. G. B. Jeffrey and W. Perrett (New York: Dover, 1983), 13, 15. Lodge, a defender of aether even during the period immediately following upon relativity's alleged elimination of it, would argue that "A superstition has recently arisen that the ether is an exploded heresy and is unnecessary; but that is an absurd misunderstanding. The theory of relativity says nothing of the kind. . . . [I]gnoring a thing is

Special relativity is congenial to aether as long as one withholds from it all the properties underlying classical mechanics, such as mass, inertial resistance, atomic composition, and even a determinate state of motion or rest, in order to be consistent with the Michelson-Morley experiment and the equivalence of reference frames. Aether thereby becomes essentially unobservable and "appears at first to be an [empirically] empty hypothesis."[107] This, however, would be to ignore

> a weighty argument to be adduced in favor of the ether hypothesis. To deny the ether is ultimately to assume that empty space has no physical qualities whatever. The fundamental facts of mechanics do not harmonize with this view. . . . [B]esides observable objects, another thing, which is not perceptible, must be looked upon as real, to enable acceleration or rotation to be looked upon as something real.[108]

Insofar as certain aspects of "empty space" are elements in the equations describing accelerative motions (special relativity focuses on only uniform motions) an aether still seems necessary. The "four dimensional space[-time] of special relativity is to some extent a four-dimensional analogue of H. A. Lorentz's rigid three-dimensional aether."[109]

While special relativity is compatible with an aether (when each is properly understood), general relativity positively *demands* it in its notion of space-time curvature. Although even special relativity employs the notion of space-time—the idea that no local description of a body should be considered without specifying when it is at this location—general relativity goes further, attributing to space-time a certain quality or mutable property, dubbed "curvature" because of the likeness between the way this property and the curvature of a surface affect the speed and

not the same as putting it out of existence" (Oliver Lodge, "Speech Through the Ether," *Nature* 108 [1921]: 88).

[107] Einstein, *Sidelights on Relativity*, 15.

[108] Ibid., 16-17; see also Kostro, *Einstein and the Ether*, 95-96.

[109] Einstein, *Relativity*, 150-51.

direction of a body's motion on it.[110] Space-time curvature, mathematically described by a metric tensor and metric field,[111] is general relativity's modification and reinterpretation of Newton's gravitational force.[112] According to general relativity, then,

> the metrical qualities of the continuum of space-time differ in the environment of different points of space-time. . . . [T]he recognition of the fact that "empty space" in its physical relation is neither homogeneous nor isotropic [i.e., uncurved] . . . has, I think, finally disposed of the view that space is physically empty. But therewith the conception of ether has again acquired an intelligible content. . . . [S]pace is endowed with physical qualities; in this sense, therefore there exists an ether. *According to the general theory of relativity space without ether is unthinkable;* for in such space there not only would be no propagation of light, but also no possibility of existence for standards of space and time (measuring-rods and clocks), nor therefore any space-time intervals in the physical sense.[113]

Thus, aether is essential to general relativity, for it is ultimately what is being described by general relativity—it is what the curvature is a *curvature of.* True, it is no longer the privileged reference frame of classical physics, for it cannot, properly speaking, be said to be at rest (or in any mathematically expressible

[110] This appears to be an analogous rather than metaphorical predication, as space-time curvature is mathematically similar to the curvature of certain two-dimensional surfaces. Note that in Einstein's use of the word, the surface of a cylinder is not "curved"; his is both a looser *and* a more specific (i.e., technical) use of the word than that of common speech.

[111] A "metric" is possessed by a slice of space (or, in general relativity, space-time) describable by an equation incorporating infinitesimal differences between its endpoints. If a metric is a "tensor," it allows the components of the system or equation to be transformed from one set of endpoints to another; thus it plays the central role in general relativity of defining the geometry of space-time and giving the prescription for integrals and derivatives. (Where the space is not flat, it is said to be permeated by a "tensor field.") For an in-depth account of general relativity's metric tensor, see P. J. E. Peebles, *Principles of Physical Cosmology* (Princeton: Princeton University Press, 1993), 227-44.

[112] Curved space-time is sometimes described as *doing away with* Newton's forces and with gravitational agent causality in general; see, for example, Robert Lindsay and Henry Margenau, *Foundations of Physics* (New York: Dover, 1957), 96, 358-61. This sort of reductionism (ironically) applied to Newtonian physics may be precipitate, as forces seem rather to be the *effects* of space-time curvature; at any rate, to attempt to explain motions in nature without recourse to agent causes is to mistake physics for mathematics. See Aristotle, *Phys.*, 2.2.193b31-194b15.

[113] Einstein, *Sidelights on Relativity,* 18-19, 23 (emphasis added).

state of motion). It is, however, the substrate of the physical properties or quasi-geometrical structure that is "characterized mathematically by the components of the gravitational potential [i.e., the metric tensor], which describes the metric behavior of this part of space, as well as its gravitational field,"[114] and therefore also the motion of bodies in this part of space. This aether's "state varies continuously from point to point"[115] in space and in time, and thereby it affects the metrical properties (i.e., the measurements of space-time variables) of any body at any point in it.

The function of space-time curvature, and therefore of aether, as determining how bodies move bears emphasis. At the root of the relativistic aether's causality, like that of both the Aristotelian and Newtonian aethers, is its role as an intermediate agent, a medium through which one massive body—whether a planet or an atom—could attract or in any way act upon another. According to Einstein, no theory

> involving action-at-a-distance . . . merits serious consideration. . . . [Thus] we will not be able to do without the ether in theoretical physics, i.e., a continuum which is equipped with physical properties; for the general theory of relativity, whose basic points of view physicists surely will always maintain, excludes direct distant action. But every contiguous action theory presumes continuous fields, and therefore also the existence of an "ether."[116]

Taking the rejection of action at a distance as a philosophical first principle in interpreting the mathematical theory, Einstein maintains that agent causes will act only by contact, specifically by alterations of the space or aether surrounding distant patients, and general relativity explains how this happens. Although Einstein's aether "is itself devoid of *all* mechanical and kinematical qualities . . . [it] helps to determine mechanical (and electromagnetic)

[114] Einstein, "Dialogue concerning Accusations against Relativity Theory," in Kostro, *Einstein and the Ether*, 76.

[115] Ibid.

[116] Einstein, "On the Ether," in *The Philosophy of Vacuum*, 15, 20; see also *Sidelights on Relativity*, 4-6.

events."[117] Specifically, relativity's aether determines both inertial and gravitational motions, the former by the abstracted special theory which makes it a principle of motions in nearly flat regions of space, and the latter by the general theory which makes it a principle of motions in significantly curved space.[118] So-called empty space not only has attributes, it also has *causally active* attributes, and enters into "the causal nexus of physics, . . . [so] this ether would be a physical reality as good as matter."[119]

Unlike the aether of Aristotle, however, Einstein's aether enters into the "causal nexus of physics" by also being acted upon by ordinary matter. The degree of curvature in a region of space-time varies with—indeed, Einstein sometimes even says, "is generated and defined"[120] by—the presence of ordinary matter. A massive body curves ambient space-time, but this curvature, in turn, determines the path and speed of that same body and of bodies near it. While Einstein grants that aether has some sort of priority over ordinary bodies—sometimes he says, perhaps hyperbolically, that inertial matter is nothing more than a state or modification of the aether[121]—he nevertheless does not simply speaking attribute to it the sort of one-way causality found in the Aristotelian aether.

Still, this is not to say that the relativistic aether is simply another form of ordinary, Newtonian matter, for the way massive bodies produce this curvature in the aether is not properly explicable in terms of Newtonian mechanics. The not-so-aethereal aether of classical mechanics—which, ironically, Einstein calls "ether in the traditional sense"[122]—is indeed a dead hypothesis. The relativistic aether, however, is still radically unlike ordinary

[117] Einstein, *Sidelights on Relativity,* 19.

[118] On the inertial and gravitational causality of the aether, see Kostro, *Einstein and the Ether,* 166-67, 177-80.

[119] Einstein, "On the Ether," 13-14.

[120] Quoted in Kostro, *Einstein and the Ether,* 112; see also the "Morgan Manuscript," § 13, quoted in ibid., 78.

[121] Albert Einstein, "The Concept of Space," *Nature* 125 (1930): 897-98.

[122] Einstein, "Dialogue concerning Accusations against Relativity Theory," quoted in Kostro, *Einstein and the Ether,* 76. Einstein never compares his aether to the Aristotelian aether, apparently unaware that there was one.

matter because it does not exert a force of resistance when massive bodies enter it and begin to generate the gravitational field, and likewise massive bodies do not curve aether by exerting a force or pressure on it. Rather, just as Aristotle's aether would docilely yield to ordinary matter entering it, so Einstein's aether naturally curves with the presence of a massive body. Thus Einstein insists again that this is aether of "a more sublimated form [than the luminiferous aether] . . . [For it] differs from the one of earlier optics by the fact that it is not matter in the sense of mechanics. Not even the concept of motion can be applied to it";[123] thus, it "may not be thought of as endowed with the quality characteristic of ponderable [i.e., massive, inertial] media, to consist of parts that may be tracked through time."[124] Not unlike Aristotle's celestial matter, relativistic aether is deprived of univocal spatio-temporal predicates, is continuous, intangible, and perfectly transparent—for it is also the medium of electromagnetic energy, light. However, unlike Aristotle's aether (though not perhaps directly opposed to it), this aether possesses specific properties describable only by way of abstract mathematical formulae and geometric analogies. This substance is truly aethereal.

We find another ambiguity of predication that Aristotle and St. Thomas noted (although for only partly overlapping reasons)

[123] Einstein, "Morgan Manuscript," § 22, in Kostro, *Einstein and the Ether,* 78. Einstein frequently reiterates that his aether is devoid of all predicates pertaining to motion, place, and time, but he implicitly admits that such predicates may apply to it in an extended sense. What Einstein is saying most precisely is that aether lacks a *determinate and mathematically expressible* velocity, or state of motion or rest, or a *trackable* temporal *history* at any point within it; see, for example, *Sidelights on Relativity,* 13-15, 19. Relativistic aether is nevertheless ubiquitous and has points and spatio-temporal coordinates within it, each possessing its own distinct curvature, and which change with time—all of which are spatial and temporal predicates that must have some (perhaps nonmathematical) sense to them. Likewise, by surrounding bodies, the relativistic aether locates them or gives them place, and it is the substratum of space-time; therefore, it bears an intrinsic relation to space and time as a principle of them. Thus, distinguishing analogical (i.e., rationally equivocal) from univocal predication, and following Aristotle's account, we may rightly say that even Einstein's aether both has and does not have place, motion, and time.

[124] Einstein, *Sidelights on Relativity,* 23-24. Unlike the classical account of aether and ordinary matter, general relativity's aether is not atomic; it is strictly continuous. See, for example, ibid., 15; "On the Ether," 14.

regarding the celestial substance: Is it right to call this aether a substance or matter at all? Einstein, after all, sometimes says that in general relativity, "instead of speaking of an aether, one could equally speak of physical qualities of space," and that here "the concepts of 'space' and 'ether' merge together."[125] Has he only tagged the vacuum with the name "aether" without meaning to describe a material being of any sort? Einstein cannot simply mean this, as he just as frequently (and often in the same writings) says that relativity has "finally disposed of the view that space is physically empty," and that "space as opposed to 'what fills space' . . . has no separate existence. . . . Space-time does not claim existence on its own but only as a structural quality of the field,"[126] that is, of the aether. What is being called "space" is not a void, an expanse of nothingness, for it is not empty and it is positively causal. Whether we call it a material substance, then, seems to depend on what is meant by "matter" and "substance." On the classical assumption that matter is the same thing as massive, atomic, and inertial, or "ponderable," matter, the aether would not properly be a material substance.[127] However, keeping in mind the Aristotelian insight that matter most properly is that out of which a physical substance is composed, and therefore is the very potency for natural being,[128] we see that this subtle yet mutable physical entity is essentially a material substance—though these predicates are appropriate to it only in an extended sense.[129] As Lorentz puts it, given its function, any aether must be "endowed with a certain degree of substantiality, however different

[125] Respectively, "On the Ether," 13; and "Morgan Manuscript," § 22, quoted in Kostro, *Einstein and the Ether*, 78.

[126] Respectively, Einstein, *Sidelights on Relativity*, 18; and Albert Einstein, *Ideas and Opinions* (New York: Crown Publishers, 1960), 375-76; on p. 15 of the former he also calls aether an "extended physical object."

[127] See Margenau, *Open Vistas*, 103, 114-15.

[128] See Aristotle, *Metaphys.*, 5.12, 9.1, 9.7. On the root notion of matter as "that from which a thing is composed," see Charles DeKoninck, "Abstraction From Matter (part one)," *Laval théologique et philosophique* 13 (1957): 148-62.

[129] As we said earlier, the matter of aether is a potency for natural being, but not for natural becoming, except perhaps accidentally, whether that be considered with regard to place via the rotation of the heavenly sphere, or with regard to relativistic curvature.

it may be from ordinary matter,"[130] and according to one Einstein specialist,

> In Einstein's concept of the ether there also occurs a gradual materialization of physical space-time. . . . [But this means] ascribing it a specific type of materiality, very different from the materiality of the substances we encounter in physics, to which we refer when we [usually] use the word "matter."[131]

Matter and substance, like predicates pertaining to motion, space, and time, can be said of aether only by means of rational equivocation, that is, by analogy. Nevertheless, granting attributes, especially *causal* attributes, to "empty" space is incoherent, Einstein, Aristotle, and St. Thomas argue; void is no longer a possibility. So an underlying causal physical entity unlike those we experience daily must be posited by relativity. Aether's executioner turns out to be its savior.[132]

B) The "Vacuum" of Quantum Electrodynamics

The other pillar (besides relativity) on which modern physics is based is quantum theory. Just as Einstein saw his aether as the medium not only of gravitational fields, but also of electromagnetic ones,[133] so does the second candidate for a modern

[130] Quoted in Schaffner, *Nineteenth Century Aether Theories,* 115.

[131] Kostro, *Einstein and the Ether,* 180; on the materiality of this aether in relation to Einstein's search for a unified field theory, see ibid., 137, 143-44, 147. Some, on the other hand, tend to see in relativity a *de*materialization of aether, and of nature as a whole, such that "matter is no longer material" (Margenau, *Open Vistas,* 113-15, 126-27). Such a conclusion leads one to suspect that perhaps there has been a misunderstanding of what matter really is.

[132] Einstein is not alone in his opinion that aether is at the heart of his curved space-time. See, for example, Robert Weingard, "Making Everything out of Nothing," in *Philosophy of Vacuum,* 202-3; for an enumeration of others, see Kostro, *Einstein and the Ether,* 88-90, 98-101, 185-88. Some physicists and historians of science who are aware of Einstein's aether-interpretation of relativity tend to dismiss it as no longer tenable or "a purely artificial concept" (Max Born, "On the Meaning of Physical Theories," 64). We should note that Einstein explained relativity in terms of an aether on fewer occasions as years went on not because he changed his mind, but because of Nazi physicists' use of the aether concept and their bitter mockery of "Jewish physics," epitomized, in their eyes, by Einstein; see Kostro, *Einstein and the Ether,* 137, 147, 150-52.

[133] See Einstein, *Sidelights on Relativity,* 19, 21-23, and Kostro, *Einstein and the Ether,* 6-7, 96-97, 100, 116ff.

aether come from a branch of quantum theory called quantum *electro*dynamics. As with relativity, we will not try to explain quantum theory in detail,[134] but will restrict ourselves to salient points pertaining to the idea of aether.

During the decades surrounding the publication of Einstein's theory of relativity, evidence was accumulating and another theory developing that together indicated that all energy is transmitted in discrete units called *quanta*. One of the implications of this new theory was that the position and momentum of a particle cannot be simultaneously determined with perfect accuracy; the more precise the position measurement, the less precise that of the momentum, and vice versa. Likewise, this inverse relationship was found to apply to the combination of energy and time-interval measurements. Most importantly, however, this "uncertainty principle" was further shown to be not merely a limitation in our *knowledge* of a particle, but even to imply an indetermination in the particle itself. A precise position measurement means that the particle at that moment in fact *has no* precise momentum. While some have seen hints of an aether in various parts of quantum theory,[135] the uncertainty principle argues for it most directly and persuasively. The branch of quantum theory connected with how electromagnetic energy (i.e., a photon) interacts with electrons—namely, quantum electrodynamics, or QED[136]—posits the notion of an effervescent and active "vacuum," which looks suspiciously aethereal.

[134] Thus we will leave out discussions of Planck's constant, quantum leaps, wave-particle duality, and complementarity. Summaries and interpretations of quantum theory have been presented recently in this journal; see Wolfgang Smith, "From Schrödinger's Cat to Thomistic Ontology," *The Thomist* 63 (1999): 49-63. For more in-depth but manageable presentations that concern themselves with the philosophical interpretation of the theory, see the following: David Z. Albert, *Quantum Mechanics and Experience* (Cambridge: Harvard University Press, 1992); R. I. G. Hughes, *The Structure and Interpretation of Quantum Mechanics* (Cambridge: Harvard University Press, 1989); Werner Heisenberg, *Physics and Philosophy: The Revolution in Modern Science* (New York: Harper, 1958); Wolfgang Smith, *The Quantum Enigma: Finding the Hidden Key* (Peru, Ill.: Sherwood Sugden, 1995).

[135] See Henri Poincaré, *Mathematics and Science: Last Essays*, trans. John W. Boldoc (New York: Dover, 1963), 86ff; Whittaker, *A History of the Theories of Aether and Electricity*, 2:268ff.

[136] QED is a part of quantum field theory, which is quantum theory with a special emphasis on the fields associated with elementary particles.

A region of space in which there is no detectable matter or energy, even at the quantum level, is described by QED as possessing a quantum field that is "inactive" or "unexcited." This is the ground, or lowest possible, energy state of the field, so the quantum system here is said to be physically empty of literally everything detectable, a "quantum vacuum." However (to revise a pun from Aristotle),[137] this vacuum does not seem so vacuous. In 1925 Werner Heisenberg, who first articulated the uncertainty principle, inferred that it requires that even this vacuum must possess throughout a certain residual and irremovable energy, paradoxically named "zero-point energy."[138] Because of the irreducible minimal uncertainty we must have about the energy status of every point within a quantum system, even one apparently evacuated of all energy, Heisenberg argued, the vacuum must be allowed occasionally and spontaneously to "fluctuate," that is, to generate real particles with real effects. Hence, where QED says there is nothing, it also says that there will always be the possibility that this nothing will turn into something, even if for only an instant.[139]

This sounds of course like science fiction; the uncertainty principle must be wrong if this is what it implies. Either a quantum system is empty or it isn't, and it is inconceivable that a void would, even occasionally, spit out a body. There is something right about this objection; nonetheless, vacuum fluctuations are not objects of mere theory. Even according to theory they should be measurable—and, disturbingly, they are. Besides nearly a century of unblemished empirical success for quantum theory and its cornerstone uncertainty principle, there are many well-established phenomena apparently intelligible only in terms of

[137] See Aristotle, *Phys.*, 4.8.216a27.

[138] More specifically, he argued that the uncertainty principle implies that the mean square average of the field in its ground state is a nonvanishing value—that is, there is a tiny but irremovable probability amplitude for the presence, or rather generation, of a proportionately tiny amount of electromagnetic energy. See D. W. Sciama, "The Physical Significance of the Vacuum State of a Quantum Field," in *The Philosophy of Vacuum*, 139-42.

[139] Zero-point energy is often interpreted, obscurely, in terms of a continuous sea of "virtual particles" in the quantum field, so named because they are not in principle measurable (although their effect on real particles is measurable).

these vacuum fluctuations. While the first experimental evidence of zero-point energy turned up in the same year that Heisenberg predicted its existence, two more recent and more deeply studied examples bear singling out. In the 1940s certain unexplained permutations, dubbed "Lamb-shifts," were first observed in the spectra emitted by excited hydrogen and muonic helium. Insofar as changes in the spectral emission of an atom are directly connected to changes in electron structure or configuration, the only account that was and remains forthcoming is that the vacuum surrounding the electrons of the hydrogen and helium, in virtue of a fluctuation or actualization of some of its zero-point energy, is energizing them.[140]

A second well-established witness to the existence of zero-point energy in the vacuum is called the Casimir effect. Predicted by QED in the 1940s, only in the past decade has it been directly and accurately measured.[141] The Casimir effect is a delicate but measurable attractive force generated, without the presence of an electromagnetic field, between a pair of parallel metal conducting plates; this force is inversely proportional to their separation.[142] As with the Lamb-shifts, the measure of this force is exactly that predicted by fluctuations of the vacuum occurring around the plates, those occurring *between* the plates being overcome by those occurring *outside* of them. These and other phenomena,[143] then, indicate that zero-point energy seems to be more than a theoretical entity.

Is it right to call this a vacuum at all? One physicist, reflecting on this ambiguity in QED's use of the word, notes that

[140] See Sciama, "The Physical Significance of the Vacuum State of a Quantum Field," 144.

[141] For more detailed summaries, see C. J. Foot, "Something from Nothing," *Nature* 362 (1993): 206-7; John D. Barrow, *The Book of Nothing: Vacuums, Voids, and the Latest Ideas About the Origins of the Universe* (New York: Pantheon, 2000), 204-11.

[142] More precisely, the attraction is predicted and observed to be in a subquadruplicate ratio to the separation.

[143] For more empirical evidence of fluctuations of the quantum vacuum in fields as diverse as spectroscopy, solid-state physics, and chemical reactions, see Sciama, "The Physical Significance of the Vacuum State of a Quantum Field," 142-50, and Aitchison, "The Vacuum and Unification," 180-85.

The excitation and de-excitation of these modes [of the quantum vacuum field] are interpreted as the "creation" and "annihilation" of "particles." In this context, a new notion of a "vacuum" is introduced. . . . There are several features of these vacuum states that make it hard to conceive of them as "empty."[144]

Another concludes that QED's principles, in effect, imply

that the concept of the vacuum must be somewhat realigned. It is no longer to be associated with the idea of the void and of nothingness or empty space. Rather, it is merely the emptiest possible state . . . the state from which no further energy can be removed. . . . [The "vacuum"] is what is left when everything is removed from space that can be removed.[145]

The so-called vacuum is full—it is filled by the irremovable zero-point energy—so its name will be a contradiction in terms unless it is a vacuum only relatively or loosely speaking, that is, unless it is empty only of a certain genus of things, while it may remain full of something of another genus.[146] This need to say that it is essentially full, a plenum rather than a vacuum, increases when we recall the Presocratic dictum that is one of the first principles of natural philosophy: *ex nihilo nihil fit*—nothing comes from nothing. The sudden generation of particles or their agency is physically impossible if there is not some matter or physical potency permeating the "vacuum" already. Manifestations of zero-point energy, then, not only keep us from describing it as "empty," or a "vacuum," without further qualification, but they also tell us that it is material, for it is that which is able to become actual particles (of energy or massive particles). It is not, of course, the ordinary matter of common experience.

Is it not right to call it aether, then? Although few physicists are in the habit of calling it anything other than a vacuum—with the constant double-speak that it is *not really* empty—some think aether is a more meaningful appellation. For example, some insist

[144] B. J. Hiley, "Vacuum or Holomovement," in *The Philosophy of Vacuum*, 222-23.

[145] Barrow, *The Book of Nothing*, 205, 229.

[146] In chemistry, for example, a "vacuum" is not necessarily devoid of any matter, but rather is defined as any volume of gas that exerts less than 1/1000 of an atmosphere of pressure.

that the energy of the ground-state is "a kind of reintroduction of the ether," a "quantum field-ether," although "it is a pale and ghostly shadow of its old self," that is, of the luminiferous aether of classical physics.[147] Indeed, the best-known proponent of reappropriating the name and notion of aether is the founder of QED itself, Paul Dirac. Despite special relativity's much-sung elimination of aether, because of the enduring need to explain not only vacuum fluctuations, but also aspects of general relativity, Dirac argues, we should admit that we are implicitly invoking aether in our general account of the phenomena and the mathematical theories that pretend to be studying a void:

> Physical knowledge has advanced much since 1905, notably by the arrival of quantum mechanics, and the situation [about the scientific plausibility of aether] has again changed. If one examines the question in the light of present-day knowledge, one finds that the aether is no longer ruled out by relativity, and good reasons can now be advanced for postulating an aether. . . . We can now see that we may very well have an aether, subject to quantum mechanics and conformable to relativity, provided we are willing to consider a perfect vacuum as an idealized state, not attainable in practice. From the experimental point of view there does not seem to be any objection to this. We must make some profound alterations to the theoretical idea of the vacuum. . . . Thus, with the new theory of electrodynamics we are rather forced to have an aether.[148]

We would not be accused of reading too much into these words to say that, at minimum, the notion of the aether is anything but scientifically naive or reactionary. Outside of refusing to try to make sense of QED and phenomena like Lamb-shifts and the Casimir effect, positing a peculiarly unobservable—but inferrable—medium seems inescapable. And what is this but aether? Objecting to the reappropriation of the name in principle, as though motivated by an undue syncretism, is unreasonable. As one physicist soberly points out, in attempts to unify physics in recent decades, "Increasingly, this vacuum is reminiscent of ether . . . [and the parallels are drawn] not out of any great fondness for

[147] The first quotation is taken from Sciama, "The Physical Significance of the Vacuum State of a Quantum Field," 137; the second and third from Saunders and Brown, "Reflections on Ether," 29 and 59.

[148] P. A. M. Dirac, "Is There an Aether?" *Nature* 168 (1951): 906-7.

the concept of ether, but through the perception of its unifying role in dynamics."[149] This is aether not merely in name, but in function and in essence.[150]

C) The Vacuum Energy of the Cosmological Constant

No claim has been made that the aether implied in quantum electrodynamics is identical to the aether of relativity, as each explains a different, and apparently irreducible, form of energy

[149] Simon Saunders, "Introduction," in *The Philosophy of Vacuum,* 7-8.

[150] Perhaps the reason the name is avoided now is that there is a desire to avoid confusion, for the Michelson-Morley experiment did indeed refute the existence of what is often simply called "aether," and to say that QED and relativity vindicate aether may seem incoherent. Some physicists, however, think that there is more to the common resistance to speaking of aether now than the purely pedagogical concern, noting an instinctive hostility among other physicists to the word "aether" when interpreting zero-point energy:

> The reaction against the reintroduction of such an ether or plenum has been so strong that any theory that dared to call on such a notion was for a time [after the advent of special relativity] deemed to be unacceptable and even preposterous. In the 1960s and 1970s I often came across such a reaction when I tried to discuss de Broglie's use of a "sub-quantum medium" as a means of providing a possible explanation of the quantum formalism. The objection was not so much against the attempt to find a more physically intuitive explanation of quantum phenomenon [*sic*], but rather against the introduction of the "sub-quantum medium." The retort, "Surely Einstein has shown us that the vacuum is 'empty' and the reintroduction of such an outmoded way of thought will not provide a satisfactory understanding of the phenomena," was not uncommon. Yet in relativistic quantum field theory the notion of "vacuum polarization" had already emerged and was being used quite freely, . . . [and] Einstein himself (1924) did not react so strongly against the notion of an ether. (Hiley, "Vacuum or Holomovement," 219)

(Vacuum polarization is another phenomenon manifesting the existence of zero-point energy. The 1924 reference to Einstein is to the essay "On the Ether," cited above.) Is this refusal to countenance aether perhaps motivated by a desire to "save face," not to admit that in a sense physicists were wrong to see the Michelson-Morley experiments and special relativity as the definitive overthrow of aether? Hiley does not pursue the question much further, but he does go on to say that this visceral rejection of aether as an allegedly appropriate heuristic for the quantum vacuum and general relativity's curved space-time has been fading in the past two decades.

(electromagnetic and gravitational, respectively). Likewise, while QED's zero-point energy is postulated to explain the very small (e.g., spectral variations in an excited atom), relativity's curved space-time is postulated to explain only the very large (e.g., the precession of Mercury's orbit around the sun). Thus, assuming that there is only one aether filling a given space at a given time, it is difficult to see, barring some future unification of these forms of energy—which, admittedly, many scientists, including Einstein, have devoted much effort to finding—how these two modern aether-candidates can be fused. Harmonizing quantum theory and relativity is not my aim here, as their partial incompatibility is well known and has troubled better minds. Nevertheless, there are some signs, courtesy of recent astrophysics, of a partial overlap between the quantum and relativistic aethers.[151] In attempting to understand the macro-world (e.g., stellar motions), usually the domain of general relativity, astrophysicists are now feeling a need to posit a macro version of QED's micro-world zero-point energy. Thus, although the jury is still out among the physicists on what to make of the phenomena in question—so any evaluation must remain tentative—still the evidence should be noted.

According to accepted theory, the expansion of the universe should be decelerating due to the gravitational drag of massive bodies, such as planets and stars. However, observations on a number of distant supernovae over the past ten years are suggesting that some hitherto unknown repulsive force from an

[151] While special relativity is compatible with quantum theory, general relativity is not. However, quantum field theory, of which QED is a part, is so far the first partial harmonization of quantum theory and general relativity, for it imitates the latter's emphasis on the influence of the geometrical structure of space-time—which field or space-time structure we saw was the segue into each theory's need for an aether. Recall, however, that Einstein saw both gravitational and electromagnetic fields as aspects of one aether; see above, note 119. Note also that Dirac himself thoughtfully argues that the quantum and relativistic aethers are essentially compatible, different sides of the same coin. Pointing out that the indeterminacy of the spatio-temporal predicates that relativity implies for its aether is required by the uncertainty principle, he says that the less massive a body is, the more indeterminate its velocity becomes; thus, if aether is massless, its velocity will be perfectly indeterminate, as special relativity requires; see Dirac, "The Evolution of the Physicist's Picture of Nature," *Scientific American* 208 (May 1963): 51.

unknown energy source is accelerating the expansion.[152] And worse, this force does not appear to be coming from one region of the universe; rather, it appears to be coming from all directions, or more specifically, from space itself. The comparison with Einstein's original idea of a "cosmological constant," an irremovable repulsive force built into the texture of the universe, has been difficult to avoid, although for half a century it was common opinion that its addition to relativity theory was *ad hoc*. While little is certain about this accelerative force, one thing seems clear: As one physicist puts it, "the energy density associated with the [new] cosmological constant is not possessed by matter or radiation, but by 'empty' space."[153]

Perhaps, then, it is not coincidental that researchers have tentatively named this mysterious energy source not only "X-matter" (thereby treating it as material in some sense), but even more strikingly, "quintessence,"[154] the name used by Aristotle's medieval disciples for the fifth element, aether. As one physicist specializing in interstellar dark matter puts it,

> A decade ago, it seemed to me that dark matter was a sort of modern "fifth essence." But even closer in spirit to Aristotle's heavenly aether or "quintessence" is the currently favored possibility that a nonzero energy exists throughout empty space. . . . [P]erhaps nothing in the history of physics resembles more the quintessence of Aristotle than . . . [this] vacuum energy, comprising 50-70 percent of the energy density of the universe.[155]

[152] See J. P. Ostriker and P. J. Steinhardt, "The Observational Case for a Low Density Universe with a Non-Zero Cosmological Constant," *Nature* 377 (1995): 600-602; James Glanz, "Astronomers See a Cosmic Antigravity Force at Work," *Science* 279 (1998): 1298-99; idem, "Exploding Stars Flash New Bulletins from Distant Universe," *Science* 280 (1998): 1008-9; Barrow, *The Book of Nothing*, 184-92, 297-301; Lawrence Krauss, *Quintessence: The Mystery of Missing Mass in the Universe* (New York: Basic Books, 2000), 107-9, 332-36. Although this last work is mainly focused on astrophysics' search for dark matter, it is particularly noteworthy insofar as it enumerates and explains other phenomena besides the supernova data that suggest a need for a cosmic-scale vacuum energy; see Krauss, *Quintessence*, 222-28.

[153] Peter Coles, "The End of the Old Model Universe," *Nature* 393 (1998): 744.

[154] Glanz, "Exploding Stars Flash New Bulletins from Distant Universe," 1008-9; Krauss, *Quintessence*, 335.

[155] Krauss, *Quintessence*, xix, 222-23.

As in general relativity and QED, this use of the word "aether" does not seem to be pure metaphor. Besides apparently possessing the aethereal character of QED's vacuum, this "quintessence," *unlike all other known matter,* does not exhibit gravitational attraction, it is not pulled or pushed toward other bodies—indeed, it appears only to repulse or push upon ordinary matter, implying both its uniqueness and its causal agency. Likewise, in virtue of its dominance over ordinary matter and energy, this energy-source seems to be the single most important factor determining the shape of the universe, the arrangement of stars and galaxies within it, of space itself, and the eventual fate of the universe as a whole. Further, this mysterious energy source appears to act on ordinary matter without being acted upon in return. Empirical data suggest and general relativity theory requires both that it be accelerating the expansion of bodies in the cosmos and that it remain unaffected by their motion or presence. In short, this cosmic vacuum energy seems to be immutable, a cosmological *constant*—all of which are marks of Aristotle's weightless and intangible, but causal, celestial substance.[156] While not identical to Aristotle's conception of aether, this modern "quintessence" does appear to be its intellectual heir.

CONCLUDING REMARKS

The supernova evidence of a cosmological constant is hardly definitive. Likewise, general relativity and quantum electrodynamics are only theories—well-tested theories (especially QED), to be sure, but theories nonetheless, successful attempts at making more intelligible what is observed.[157] Just as Aristotle's geocentric universe was overturned in the sixteenth and

[156] On each of these properties of the cosmological constant, see Barrow, *The Book of Nothing,* 185, 244-45, 290-91, 297-301; Krauss, *Quintessence,* 223, 334.

[157] There remain few physicists who believe that the standard interpretation of either relativity or quantum theory is simply untrue, but many believe each is only a half-truth that will be superseded by later, more unifying fundamental physics. Certainly there are philosophical problems in the way the theories are articulated or made intelligible by their proponents, the solution of which will probably require some revision of standard interpretations.

seventeenth centuries and was replaced by Copernicanism and Newtonian universal gravitation, and just as the unthinkable happened when Newtonian physics failed at the beginning of the twentieth century, each proving unable to account for newly detected phenomena, so the same may someday occur to relativity and quantum theory. The experimental method of natural science is tentative by nature, its inductions always being only partial and incomplete.[158] However, just as Newtonian physics is an approximation to the truth, so relativity and quantum theories, if or when challenged, will turn out to have been *like* the truth. Thus, they should not be dismissed as being entirely off on the wrong track, and their different but similar needs for an aether suggest that there is something right about the aether as a principle of nature. At minimum one will grant that the foregoing excursions into relativistic, quantum, and astrophysical theory and observation amount to a powerful dialectical argument in favor of something like Aristotle's celestial substance.

Nevertheless, it seems silly, one might say, to pretend that the new aether-candidates are what Aristotle was trying to say all along. After all, there are two critical ways in which they are decidedly unlike Aristotle's aether. His first and most straightforward reason for positing a new kind of matter is his belief that he could see the heavens moving in a way that nothing else around him moves. This simple circular motion was rejected long before Einstein and Dirac formulated their revolutionary theories, and their aethers possess no such motion. Likewise, Aristotle's aether was peculiar to the celestial regions; it was not "here below," whereas space-time and vacuum energy are everywhere. Thus (the objection goes) what contemporary science has hit upon bears only a superficial, coincidental resemblance to Aristotle's aether.

There is, of course, something to be said for this. Aristotle's aether is *not* simply identical to those implied in relativity and

[158] For an illuminating discussion of the threefold distinction among the incomplete induction of the experimental scientist, the complete induction for which he hopes, and the intuitive induction of *per se nota* propositions that are the basis of natural philosophy and of knowledge in general, see DeKoninck, "Abstraction from Matter," 139-45.

quantum theories, as the most obvious marks of the former are not preserved in the latter. However, a case has been made that, while the nightly circular motion of the heavens is no doubt what first caught Aristotle's attention and made him suspect that there is an unusual kind of matter up there that is not down here, the underlying and in many ways most critical drive to posit aether is the impossibility of void. If there cannot be a void, and yet the senses detect nothing in the heavens besides a few shining lights, then we are left with good reason to believe that whatever fills the heavens is unlike any matter of which we have experience. The circular motion of the stars, then, only adds to this conviction.[159]

This situation is identical to the one in which we find ourselves today. Space still appears to be empty. Certainly it is probable that, if there were any subtle sensible attributes permeating the heavenly regions, some sign of an ubiquitous medium of ordinary matter, we would have detected something by now. What we *have* found, from random stellar dust and gas to a uniform scattering of microwaves, is not enough literally to *fill* the heavens. Sensation and even the mechanical measuring devices acting as extensions of sensation have not given us reason to believe that there is anything but emptiness. Rather, what we have done is *argue* to the existence of properties in space, properties that thereby imply a substrate. Einstein has *argued* to there being a quasi-geometric structure filling space that affects the gravitational motions of bodies in it. Heisenberg has *argued* that the uncertainty principle entails vacuum fluctuations, and therefore some kind of "vacuum energy." Thus, the consistently vacuous *appearance* of outer space, when combined with the troublesome philosophical baggage that comes with void, is itself an argument in favor of aether, just as was Aristotle's wonder at the apparent emptiness between himself and the distant stars. Modern science has only strengthened the argument. Likewise, the modern aethers and that of Aristotle have a common core: They are aethers of the same sort. Each posits an

[159] Indeed, St. Thomas argues that circular motion is not an inseparable accident of the heavens, arguing that the outermost heavenly sphere beyond the fixed stars, the "empyrean heaven," is thoroughly immobile and the most foundational of the concentric spheres of aether; see *STh* I, q. 66, a. 3, ad 1 and ad 2; I, q. 66, a. 4, ad 5.

ubiquitous, space-filling, utterly insensible medium whose existence we cannot directly measure or detect but which can be inferred from things we *can* measure and detect.

Nor are only the basics shared. In the foregoing, we have demonstrated profound similarities between the old and the new aethers that are worth reviewing. Recall Einstein's curved space-time which has no determinate velocity, location, or history; spatio-temporal predicates can be applied to it only analogically, not univocally. Likewise, Aristotle's heavenly matter has no place, no motion or rest, and does not exist in time, without some kind of loosening of the meanings of those words. Einstein's aethereal space-time, moreover, is a principle and cause of the local and temporal properties of ordinary matter and in some way determines the nature of their motions. Aristotle's "first body" is the ultimate principle in virtue of which all other bodies have place and are measured by a common time, and it is the first physical agent cause of natural motions. In both relativity and QED, one finds an ambivalence among the physicists about calling their respective aethers "material" or "immaterial"; likewise, Aristotle and St. Thomas insist that aether can be named "matter" and "substance" only equivocally, even occasionally arguing that it partakes of "immateriality."[160] Aristotle and St. Thomas, on the one hand, argue that aether seems to be immutable and impassive to ordinary matter, that is, it cannot be touched or pushed. Relativity and QED, on the other hand, while admitting that ordinary matter somehow causes curvature of space-time, and that the relative location of conducting plates can indirectly effect a net attracting force in the ambient quantum vacuum, require that aether not be a ponderable or inertial sort of matter—the quasi-agency of ordinary matter on it is not intelligible as common efficient causality, which involves an equal and opposite reaction. And lastly, Einstein, Heisenberg, Dirac, on the one hand, and Aristotle and St. Thomas, on the other, all insist that light and light-related phenomena have this medium as their proper subject.

[160] On the latter, see St. Thomas, I *De Caelo*, lect. 18, n. 7; *STh* I, q. 58, a. 3.

These likenesses seem too particular yet profound to be chalked up to coincidence.[161]

But is not Aristotle's restriction of aether to the heavens significant? Of course, and Aristotle no doubt would have second-guessed his sharply spatial bifurcation of nature if he had known what experimental science tells us now. There is even some vague evidence that he considered the possibility that the aether or some kind of participation in the nature of aether could exist in the sublunary regions.[162] Regardless, Aristotle's account would have

[161] One could reasonably respond that nevertheless in the first book of *De Caelo* Aristotle derives most of these properties from the circular motion of the heavens, which no contemporary scientist would accept, and thus the similarities noted are indeed purely coincidental. However, this would be to delineate too narrowly the sources of Aristotle's doctrine about aether. For example, we see Aristotle laying the groundwork for the idea of aether throughout the *Physics,* and especially in the fourth and eighth books in their recurring reference to the outermost container of the cosmos as the ultimate source of place and motion. Such is the source of his aether's nonlocalized, nonmoving, yet universally causal properties. Likewise, this would imply aether's one-way causality, immutability, and intangibility, all without reference to its circular motion, and these lines of reasoning are neither opposed to nor even radically unlike those that drive Einstein and the others to posit their aethers. Thus, we suggest, although the line of reasoning in *De Caelo* is in many ways the most accessible, it is not the sole path of discerning aether's properties. Nevertheless, Aristotle's emphasis on the circularity of the motion as an epistemological principle of aether's properties makes one wonder whether some kind of circularity might still be present in the aether, especially given that Aristotle speaks in *De Caelo,* 1.3, as though a natural circular motion is somehow necessary for the perfection of the cosmos. General relativity's geodesic light path is a possible candidate for such an aetherial circular motion, since in many other ways it resembles Aristotle's *primum mobile,* although to consider this in detail would take another paper.

[162] Occasionally Aristotle seems to speak of there being some quasi-admixture of aether with sublunary matter; see *Meteor.,* 1.3.340b6-341a37. Much has been made of this "sublunary aether" in recent years; see John Thorp, "The Luminousness of the Quintessence," *Phoenix* 36 (1982): 104-23; *Aristotle's De Motu Animalium,* ed. and trans. Martha C. Nussbaum (Princeton: Princeton University Press, 1978), 143-64. Still, it is difficult to see how this notion is consistent with Aristotle's overall claims that aether does not alter or corrupt, so could not enter into the constitution of a complex substance, and that aether moves only circularly, so could never get down here to begin with. As was said earlier, Einstein sometimes (intemperately) claims that ordinary matter is nothing more than a special state of aether; this precipitate conclusion derives from an ambiguity inherent in the mathematical formalism of relativity. For relativity implies that metric tensor fields can be found not only in "empty" space, but in all space; it seems that aether is literally everywhere, even where something else is. Unless one is willing to grant an interpenetration of physical substances, one must say that either the aether is the substance at that point in the field or ponderable matter is, and Einstein takes the former option. However, we know that aether

to be modified in this respect to make it compatible with better data—as he himself insisted, for he said that his account was plausible only given the information he had *at present*.[163] Thus, just as there must be some way in which, it now seems, ordinary matter can act upon aether, and that particles of dust can exist in the interstellar sea of aether, so aether seems to exist in closer proximity and interaction with the ordinary matter around us. Hence, we are not arguing that Aristotle's aether can be preserved without refining and updating it; but neither has it been simply chameleon-like, utterly changing its colors for Aristotle, then for Newton, and then again for Einstein and Heisenberg. Indeed, if modern physicists can see themselves as rehabilitating the *Newtonian* aether in quantum and relativity theories, *a fortiori* would it be appropriate to say the same about the Aristotelian aether, which is much more like what they are talking about than is the aether of classical physics.

"Nature loves to hide," Heraclitus said, and the evidence for aether is a case in point. Its existence is by no means self-evident, and is only detected by inference—sometimes lengthy and complicated inference, punctuated by many premises that are merely tentative. While the argument for aether was first made by Aristotle, and many of the fundamental insights contained in this argument are still valid, the cause of aether has now been taken up by the most empirically successful theories of contemporary science. As one physicist puts it, with relativity, quantum theory, and astrophysics, "we are going full cycle, back to the aether and quintessence of Aristotle. . . . [This is] a true 'quintessence,' in the

exists at all only because we have started with the self-evident fact that ordinary matter exists and is substantial, and to sacrifice what is evident for the sake of an hypothesis is incongruous. Thus, a more reasonable interpretation of the pervasiveness of the field would be that, just as aether seems to be able to exist in close proximity with ordinary matter, ordinary matter can participate by degrees in the nature of aether, and this participation is what is symbolized by the continuity of the mathematical formalism. Perhaps such a doctrine of aethereal participation can be made along the lines of Aristotle and St. Thomas's doctrine of participation in grades of transparency in all bodies; see Aristotle, *De Sensu et Sensato*, 3.439a21-25; and St. Thomas, *De Sensu*, lect. 5. The connection between aether and light (or electromagnetism) is not accidental.

[163] See above, note 10.

spirit of Aristotle."[164] The allegedly different subjects of natural science and natural philosophy have reached the same conclusion, though by way of somewhat different means, suggesting that perhaps the disjunction between the philosopher and the scientist has been too radical and thorough. The myth that experimental science invariably refutes the perennial natural philosophy, and that the aether in particular is a prime example of the casualties of this conflict, is itself being rethought and repudiated. Phoenix-like, the aether, after having received what appeared to be a mortal wound, is still with us in both philosophy and experimental science, and it bids fair to remain.[165]

[164] Krauss, *Quintessence,* 332, 335.

[165] Gratitude is owed to Stephen Baldner, Peter Orlowski, Ronald Richard, and my wife Rose, who read and offered many helpful comments on an earlier version of this paper. The remaining mistakes are, of course, my own.

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THOMAS AQUINAS ON CELESTIAL MATTER

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IT HAS BEEN FORTY YEARS since the publication of Thomas Litt's magisterial study of Thomas Aquinas's doctrine of the heavenly bodies.[1] That work provides a comprehensive and accurate presentation of the Thomistic understanding of the heavens: their nature, motion, causality, place, and purpose in the universe. It remains the indispensable scholarly source for understanding Thomas's teaching on these topics. Nevertheless, it has established one tenet of the Thomistic position that I wish to challenge. According to Litt,[2] and most other commentators as well,[3] Thomas Aquinas holds that the heavenly bodies are incorruptible because they are composed of a prime matter that is different from the prime matter of earthly bodies.

The problem arises as follows. Thomas as a good Aristotelian understands that all material substances are composed of form and

[1] Thomas Litt, *Les corps célestes dans l'univers de saint Thomas d'Aquin* (Louvain & Paris: Publications Universitaires, 1963).

[2] Ibid., 6-7.

[3] John Wippel, *The Metaphysical Thought of Godfrey of Fontaines* (Washington, D.C.: The Catholic University of America Press, 1981) 286-87; Edward Grant, *Planets, Stars, and Orbs: The Medieval Cosmos, 1200-1687* (Cambridge: Cambridge University Press, 1996), 250-51; Michel-Pierre Lehrner, *Le monde des spheres I: Genèse et triomphe d'une representation cosmique* (Paris: Les Belles Lettres, 1996), 142-43; Joseph Bobik, *Aquinas on Matter and Form and the Elements: A Translation and Interpretation of the* De Principiis Naturae *and the* De Mixtione Elementorum *of St. Thomas Aquinas* (Notre Dame: University of Notre Dame Press, 1998), 199-205. On the other hand, Robert Pasnau, *Thomas Aquinas on Human Nature* (Cambridge, Cambridge University Press, 2002), 137, claims that there cannot be two kinds of prime matter in Thomas's doctrine.

matter. By virtue of one and only one substantial form, any substance is what it actually is. This means that whatever is actually true about the substance, just insofar as it is substance, is caused by the substantial form. On the other hand, by virtue of matter in the most basic sense, which is prime matter, any substance is liable to substantial change; that is, it is liable to become a completely new actual thing. This means that both generation and corruption are possible because substances are not merely actual; they are potentially other, and they are so because of prime matter. To put this another way, it is because of prime matter, and only because of prime matter, that a substance is subject to substantial corruption. But if this is so, then it seems that one can claim that a material substance such as a heavenly body is incorruptible only if one says that it does not have prime matter in the sense in which other material substances have prime matter. That is, if the heavenly bodies have a *different sort* of prime matter, which has an appetite for only one substantial form, then one could explain the incorruptibility of the heavenly bodies by asserting that the prime matter of heavenly bodies is different in kind from the prime matter of earthly bodies. This is just the position attributed to Thomas Aquinas by Litt and by those who have followed Litt's interpretation of Thomas.

I intend to show, however, that Thomas's position was not always, and was not finally, what has just been described. Thomas, in fact, altered his position in important ways more than once. Under the influence of his teacher, St. Albert the Great, Thomas in his early works held an Averroistic position, that the heavenly bodies are not composed of form and matter. In his maturity, when he wrote the *Prima pars* of the *Summa Theologiae,* Thomas did hold the position attributed to him by Litt. In his last works, however, such as his commentary on the *De caelo* of Aristotle, Thomas seems to have adopted a third position, namely, that the heavenly bodies are incorruptible by virtue of form, not by virtue of matter. To show this, I shall discuss three topics: the doctrine of Averroës and Albert on the incorruptibility of the heavens,

Thomas's early position in the 1250s, and Thomas's mature position in the 1260s and 1270s.

I. Averroës and Albert on the Incorruptibility of the Heavens

The principal text for the statement of Averroës' position, and one that was certainly influential on Albert's paraphrase of *De caelo,* is *De substantia orbis,*[4] although the same position can be found elsewhere (e.g., in Averroës' *De caelo*).[5] In some general way, says Averroës, it is true that the heavenly bodies, like the earthly, are "composed." In heavenly matter, no less than in earthly, there must be "two natures," one that is passive or receiving and another than is active or giving.[6] This will clearly be the case in the heavenly bodies, for in them something must be the mover and something else must be the thing moved. The *motor* and the *motum* will be present in the heavenly bodies, but they must somehow be distinct.

It is also clear, however, that what is meant by form and matter in the heavenly bodies will be something quite different from what is meant by those terms in earthly bodies, because the heavenly bodies are incorruptible and the earthly are both

[4] Averroës, *Sermo de substantia orbis,* in *Aristotelis opera cum Averrois commentariis,* vol. 9 (Venice: Apud Junctas, 1562) f. 3-14. In giving the position of Averroës, my intention is to give only the Latin position, of which Albert was aware. I am not making claims about the historical accuracy of the attribution of this position to Averroës.

[5] Averroës, *Commentaria de Caelo,* in *Aristotelis opera cum Averrois commentariis,* vol. 5 (Venice: Apud Junctas, 1562), lib. 1, t.c. 20, f. 15C-D; lib. 1, t.c. 95, f. 63L-64A. As Edward Grant rightly points out, Averroës "bedevils" the problem by saying (*De caelo,* lib. 1, t.c., 21, f. 15K) that the "heavenly body does not have matter" (Edward Grant, "Celestial Matter: A Medieval and Galilean Cosmological Problem," *Journal of Medieval and Renaissance Studies* 13 [1983]: 161). Such a declaration by Averroës gave both Albert and Thomas some hesitation in interpreting him. Averroës does not, however (if I am correct), ever mean to say that the heavenly body is not *material;* he means to affirm that it is a material body but he wants to underscore the point that it is not a *composed* body. Hence it does not *have* matter, as any composite of matter and form could be said to have matter and to have form.

[6] Averroës, *De substantia orbis,* cap. 1, f. 3B-E.

generable and corruptible.[7] This observation leads Averroës to provide a general discussion on the difference between accidental and substantial change, with a view to bringing out what is required for substantial change.[8] In order for substantial change to occur, it is necessary that the substance that is to undergo the change not possess the form of the substance into which it will change. And in order that it not possess the form into which it will change, it is necessary that its matter be prime matter, matter that is in potency to all forms.[9]

A basic feature of all material substances is the fact that they are divisible, and this divisibility belongs to bodies insofar as they have quantity. Quantity in three dimensions is a kind of primary accident of all material substances, and having actual dimensions is a product of the substantial form.[10] In other words, the proper quantitative dimensions of a material substance are consequent upon having a certain substantial form.[11] What is true of the fundamental accident of quantity is true of the other accidents as well: they inhere in complete subjects that are composites of form and matter. By form, the subjects are actual; by matter, they are potential. Actual accidents cannot inhere in a purely simple reality (such as prime matter), because being subject to a contrary (which is required for any change) implies being already something in act.

[7] "Quod autem hae duae naturae [scilicet, forma et materia] existentes in his generabilibus et coelestibus corporibus non sint convenientes specie manifestum est, posito corpore coelesti ingenito et incorruptibili, et corporibus, quae sunt apud nos, genitis et corruptibilibus" (ibid., cap. 1, f. 3E).

[8] Ibid., cap. 1, f. 3G–4K.

[9] "[Aristoteles] invenit transmutationem individuorum in suis substantiis cogere subiectum non esse ens in actu, et non habere formam, qua substantiatur. Si enim haberet formam, nullam aliam reciperet, nisi illa destructa: unum enim subiectum habere plusquam unam formam est impossible. . . . Unde natura huius subiecti recipientis substantiales formas, videlicet primae materiae, necesse est ut sit natura potentiae, secundum quod potentia fit eius differentia substantialis. Et ideo nullam habet formam propriam et naturam existentem in actu: sed eius substantia est in posse: et ex hoc materia recipit omnes formas" (ibid., cap. 1, f. 3K-L).

[10] Ibid., cap. 1, f. 3M – 4A.

[11] Averroës means, I think, that a substance's general (proper) size is determined by its substantial form, but, of course, the exact size of *this* or *that* substance is determined by accidental considerations.

This observation, however, suggests to Averroës a conclusion that is of the greatest importance. Since what is purely simple cannot receive contraries, prime matter itself cannot be purely simple: if it were, it could not receive a form, for no form could be the contrary of a purely simple prime matter. As we have seen, dimension is fundamental to material substances. It is by dimensions that there is a fundamental contrariety among substances; the natural size or dimensions of one substance is contrary to the natural dimensions of another substance. The point is that contrariety must be directed at something actual, and dimension is the actual contrary opposition involved in all substantial change. Prime matter, the subject of substantial change, is never completely stripped of dimensions; it always possesses indeterminate dimensions.

> And because Aristotle discovered that all forms communicate in indeterminate dimensions, he knew that prime matter is never stripped of indeterminate dimensions, because, if it were so stripped, a body would come to be from a non-body, and a dimension from a non-dimension. And in that case, corporeal [substantial] forms would be contraries that succeed each other in the subject, according to its disposition to substantial forms.[12]

Averroës insists that prime matter must have in itself indeterminate dimensions in order that substantial change be able to take place. He will call this a "form of indeterminate dimension" that necessarily inheres in prime matter, without which substantial change could not take place.[13]

Averroës provides an example for us.[14] Consider the change of the substance water into the substance air. If we heat water, the

[12] "Et quia invenit [Aristoteles] omnes formas communicari in dimensionibus non terminatis, scivit quod prima materia nunquam denudatur a dimensionibus non terminatis, quia, si denudaretur, tunc corpus esset ex non corpore, et dimensio ex non-dimensione: et tunc formae corporales essent contrariae, et succedentes sibi in hoc subiecto, sicut est dispositio de formis substantialibus" (Averroës, *De substantia orbis*, cap. 1, 4B-C).

[13] "Et, quia illa forma, scilicet dimensionis non terminatae existit in prima materia primitus, et succedit sibi in ea, cum impossibile sit hoc subiectum recipere duas earum in eadem parte existentes terminatae quantitatis, ideo impossibile est a subiecto denudare formam, vel subiectum denudari ["denadari" in text] a forma, nisi per formae destructionem" (ibid., cap. 1, f. 4D).

[14] Ibid., cap. 1, f. 4C-D.

volume of water expands until such a point that the volume of the water is equal to that which air would occupy, and at that point the water changes into air. Similarly, when air is cooled, its volume decreases until it reaches the natural volume that water would occupy, and at that point the air changes into water. The natural volume of water is opposed as a contrary to the natural volume of air. And this opposition depends upon a reception of contrary quantities in the subject of substantial change, prime matter. Prime matter, thus, must possess dimensions but not in a determinate way. "Dimensions in an unqualified way, which are called 'body in an unqualified way,' are never stripped from prime matter, just as common accidents are never stripped from any two or more contrary bodies, like transparency, in which fire and water communicate."[15]

What explains the possibility of generation and corruption also explains, by its negation, incorruptibility in material substances. Corruptibility requires contrariety with respect to the form and a common subject that does not itself have a form but is in potency to other forms. The basis of all of this is a subject (prime matter) that receives in itself indeterminate dimensions and is thus many things in potency.[16] On the other hand, if the subject (prime matter) did not have dimension in itself, it would not receive a diversity of forms, neither numerically nor specifically. Rather, it would have only one form.[17] Furthermore, it *could not* receive other forms, for its subject would not be able to admit of any multiplicity of forms, neither potentially nor actually.

> And the cause of this is that [the subject, prime matter] does not receive quantity *first*, before the reception of forms, because if it had received [quantity first], it would be divisible according to form, and its form would be divisible according

[15] "Dimensiones igitur simpliciter, quae appellantur corpus simpliciter, non denudantur a prima materia, sicut nec alia accidentia communia omnibus corporibus contrariis, aut duobus, aut pluribus, v.g. diaphaneitas, in qua communicant ignis et aqua" (ibid., cap. 1, f. 4D).

[16] "Et causa huius totius est, quod hoc subiectum recipit primitus dimensiones interminatas, et quia est multum in potentia" (ibid., cap. 1, f. 4F).

[17] "Quoniam, si [subiectum] non haberet dimensionem, non reciperet insimul formas diversas numero, neque formas diversas specie ["spe ci" in text], sed in eodem tempore non inveniretur, nisi una forma" (ibid., cap. 1, f. 4F-G).

to dimensions, that is, by a division of its subject. And its acts would be finite in quantity, and its form could receive more and less, whole and part. If, therefore, there is some form that does not receive more and less, that is not divided by a division of its subject, and whose subject is not divided by a division of form (i.e, admits no diversity), it is clear that in the subject of that form dimensions do not exist *first,* but only *after* form exists.[18]

The key point then is the following. Substantial change is only possible when prime matter is in itself not absolutely simple but has a form of indeterminate dimension, by virtue of which the prime matter is able to receive a diversity of substantial forms. Averroës stresses that this quantitative form must inhere in prime matter *first,* or that it is naturally prior to substantial form, in order that substantial change be possible. If this prior quantitative form is missing from matter, then the matter is not able to receive different or other substantial forms. Such matter lacking the form of quantity would be simple and would not be liable to substantial change. Such simple matter will in fact be the matter of the heavenly bodies.

Accordingly, Averroës reports, Aristotle explains the incorruptibility of the heavenly bodies by the fact that such bodies do not have a subject that is receptive of division or dimension before the existence of a substantial form.

Since, therefore, it had been declared by Aristotle what is needed for generable and corruptible things, on the part of the subject and on the part of the form, from which there is generation and corruption in sensible beings that exist as individuals *per se,* and [since] it has been declared that heavenly bodies are neither generable nor corruptible, [Aristotle] has denied that they [the heavenly bodies] have a subject that receives number and division through the existence

[18] "Et causa in hoc est, quia [subiectum] non recipit quantitatem primo, ante receptionem formarum: quia, si reciperet, esset divisibile secundum formam, et forma divisibilis secundum eius dimensiones, scilicet per subiecti divisionem, et finiti essent actus secundum finitatem illius quantitatis, et esset possibile in ea formam recipere maius et minus, partem et totum. Si igitur aliqua forma est, quae non recipit maius et minus, neque dividitur per divisionem subiecti sui, neque subiectum dividitur per divisionem formae, scilicet per eius diversitatem, manifestum est quod in subiecto istius formae non existent dimensiones primitus, sed postquam forma existit" (ibid., cap. 1, f. 4H-I).

of simple dimensions in it first before the existence of form, and [he has denied] that they [the heavenly bodies] are potentially many and numerically one.[19]

Furthermore, when Aristotle noted that the actions of the heavenly bodies are infinite (for they move forever), he concluded that their substantial forms are not in subjects through the mediation of dimensions and that they are not the powers in bodies.[20] In other words, the forms of the heavenly bodies are not truly substantial forms but are separate movers. They are, in fact, both the efficient and the final cause of the motion of the heavenly bodies; they are that by which the heavenly bodies are moved and that to which they are moved.[21] In this the forms of the heavenly bodies are quite different from the substantial forms of earthly bodies, for in earthly bodies that by which the body is moved and that to which it is moved are always different. This difference, furthermore, explains why the movers of the heavenly bodies, unlike earthly movers, can be infinite.[22] This consideration moved Aristotle "to opine" that the forms of the heavenly bodies could not be constituted through their subjects, for otherwise their motion would have to be finite, like that of earthly substances.[23]

In the second chapter of *De substantia orbis,* Averroës elaborates on the relation between the heavenly body and its

[19] "Cum igitur fuerint declarata ab Aristotele ista propria rebus generabilibus et corruptibilibus ex parte subiecti, et ex parte formae, ex quibus accidit istis entibus sensibilibus generatio et corruptio, scilicet individuis existentibus per se, et fuit declaratum de corporibus coelestibus ipsa esse neque generabilia neque corruptibilia, negavit ea habere subiectum recipiens numerum, et divisionem per existentiam simplicium dimensionum in eo primo ante existentiam formae, et ipsa esse in potentia multa, et unum numero" (ibid., cap. 1, f. 4L-M).

[20] "Quando ergo invenit [Aristoteles] eorum actiones esse infinitas, concludit formas eorum non esse in subiecto mediantibus dimensionibus, sed eas non esse potentias in corporibus" (ibid., cap. 1, f. 4M).

[21] "necesse est ut forma, qua [corpus coeleste] movetur sit illa, ad quam movetur" (ibid., cap. 1, f. 5E).

[22] "In formis enim constitutis per sua subiecta differunt, scilicet quia forma, qua moventur, non est illa, ad quam moventur, et ideo omnis forma huiusmodi, scilicet quae movetur ad seipsam perficiendam per formam aliam, necesse est ut suum movere sit finitum, cum non movet, nisi quando movetur" (ibid., cap. 1, f. 5E-F).

[23] "Et hoc etiam est unum eorum quae moverunt Aristotelem ad opinandum quod formae corporum coelestium non sunt constitutae per sua subiecta, quoniam tunc motus eorum essent finiti" (ibid., cap. 1, f. 5F).

separate mover. Fundamentally, the relationship of heavenly body to its form is that of body to soul.[24] Yet it is clear in the case of the heavenly body that the nature of that body is quite different from the nature of its soul, because the soul of the heavenly body is a mover only and is not a form in composition with matter.[25] The heavenly body itself is a *corpus simplex* that is not composed of form and matter.[26] The soul or form of the heavenly body is a separate mover that is not itself moved, not even accidentally, as are the souls of animals on earth.[27] The "matter" of the heavenly body is in fact a subject that is actually existent.

> The heavenly body is as it were the matter of the separate form, by which the matter is existent in act. And therefore it is likened to matter only in this respect, that it is receptive of form; and therefore it is more rightly called a "subject" than "matter." Matter that is here [i.e., on earth] is called "matter" insofar as it is essentially in potency to form, but it is called "subject" insofar as it is informed, that is, insofar as it is a composite of form and matter.[28]

The separate forms are simple beings (not complicated with various sensitive and appetitive powers as are animal souls), and these separate forms are the eternal causes of motion and being in the heavenly bodies.[29]

Averroës' position then is this. Substantial change requires the presence of a "form of quantity" or a "form of dimension" to be present in prime matter before the substantial form. Prime matter

[24] Ibid., cap. 2, 6A.

[25] "Sed, quia anima, quae est in corpore coelesti, non est innata moveri circulariter ab eo, quod est innatum circulariter moveri, quia non est anima in eo, ut in corpore gravi aut levi, cum ipsum moveatur ex se ab anima, ideo animam habet tantum, and non habet aliud principium" (ibid., cap. 2, 6C).

[26] "Et quia declaratum est hoc corpus [coeleste] esse ingenerabile, et incorruptibile, apparet quod est necesse ut sit corpus simplex, non compositum ex materia, et forma" (ibid., cap. 2, 6D).

[27] Ibid., cap. 2, 6E-G.

[28] "Corpus autem coeleste est quasi materia istius formae abstractae, qua est materia existens in actu. Et ideo non assimilatur materiae, nisi in hoc tantum, quia est materia fixa ad recipiendum formam. Et ideo dignius dicitur subiectum quam materia. Materia enim quae est hic, dicitur materia, quia est in potentia forma in eo fixa, et dicitur subiectum, quia est fixa formae, et fit compositum ex materia et forma" (ibid., cap. 2, 6G-H).

[29] Ibid., cap. 2, 6H-K.

thus has quantity in an indeterminate way in itself and apart from substantial form. Such prime matter allows for substantial change, for substantial change requires an opposition in quantitative dimension before there can be an introduction of a new substantial form. If matter does not have such inherent indeterminate quantity, it is not liable to acquire new substantial forms. But such matter, lacking indeterminate quantity, is precisely the matter of the heavenly bodies. That matter is given determinate dimensions by its form and is thereby made a simple, not composed, material being, and its form is not a true substantial form. It is rather a separate mover, and as a separate mover it is able to cause an eternal (or infinite) motion. The separate mover may be called a "soul," but it is not the kind of soul that is joined to a body, for the soul that moves the heavenly body must be an eternally unmoved source of motion and being.

This Averroist position is adopted by Albert in his paraphrase of Aristotle's *De caelo,* where Albert gives in summary form Aristotelian arguments drawn from the *Physics* and the *Metaphysics* to show that there is but one system of the heavens that is moved by the Prime Mover. Albert expresses some tentativeness in attributing these arguments to Aristotle,[30] but he is confident that the position is broadly Peripatetic and that it is accurately the position of Averroës, as expressed in *De substantia orbis.*[31] In fact, the chapter in question is less a paraphrase of Aristotle than a paraphrase of Averroës.

First, says Albert, we speak about prime matter to indicate a substance existing in potency that in itself has absolutely no form in actuality.[32] Prime matter is the potential principle of a substance. If prime matter were actual or formal in any way, it would not be prime matter. By virtue of privation, prime matter

[30] Alberti Magni, *De caelo et mundo,* lib. 1, tract. 3, cap. 4, in Alberti Magni, *Opera Omnia,* tomus 5, pars 1, ed. Paul Hossfeld (Cologne: Aschendorff, 1971), 63.63-66. (The last series of numbers is a reference to page and line numbers: page 63, lines 63 to 66. The page number will be given before the point, the line number after.)

[31] *De caelo,* lib. 1, tract. 3, cap. 4 (Cologne 64.77-81).

[32] "Dicimus igitur notum esse ex his quae determinata sunt in *primo Physicorum*, materiam primam esse substantiam in potentia existentem et nullam omnino formam habentem in actu; sed est simplex substantia in potentia existens" (ibid. [Cologne 62.15-19]).

is liable to change and hence to receive a new form. Now there are two kinds of form, accidental and substantial.[33] Substantial form is naturally prior to accidental, since accidents inhere in and are dependent upon substances.

There are, however, two fundamentally different kinds of substantial form. One is divisible, subject to dimensions, and finite; such a substantial form is the act and perfection of a body, in which the form exercises its power. Such a substantial form is the form of any terrestrial, material substance.[34] It is the sort of form that we normally intend when we talk of substantial form. The other kind of substantial form, however, is neither divisible nor subject to dimensions nor finite, and it is neither the actuality nor the perfection of any body. This second kind of substantial form is called an Intelligence or an Intellect, and it is the substantial form of a heavenly body.

Let us first consider the properties of the substantial form that is the act and perfection of a body.[35] Such a form is finite, because its operation is realized through a body, and no body can be infinite. No power of any corporeal substance can, therefore, be infinite. Furthermore, such a form must also be the form of a divisible, quantitatively dimensional substance, even though prime matter in itself is not divisible. Matter must be capable of receiving dimensions, but it must not of itself have any determinate dimensions, for if it did it would itself be liable to generation and corruption. Its primary function, however, is to serve as an incorruptible substrate for generation and corruption. Prime matter, therefore, must receive a form of corporeity, prior

[33] Ibid. (Cologne 62.34-41).

[34] "Est autem duplex forma substantialis, quarum una est divisibilis et quasi dimensa et finita divisione et dimensione et finitione materiae et illa proculdubio actus et perfectio corporis est, habens virtutem in corpore, sicut diximus in *octavo Physicorum*. Altera autem nec divisibilis est nec dimensa nec finita per materiam et haec non est actus alicuius corporis nec perfectio ipsius, sicut est forma, quae dicitur intelligentia sive intellectus" (ibid. [Cologne 62.42-50]). When Albert says that the substantial form is "divisible," he cannot mean that the form itself is divisible but that it is the form of a divisible body. Form, even accidental form, is not itself divisible but is so only insofar as it is the form of something that is divisible. See Alberti Magni, *Physica,* lib. 3, tract. 2, cap. 12, in Alberti Magni, *Opera omnia,* tomus 4, pars 1, ed. Paul Hossfeld (Cologne: Aschendorff, 1987), 191:73-77.

[35] *De caelo,* lib. 1, tract. 3, cap. 4 (Cologne 62.50-77).

to receiving substantial form, by which it is rendered divisible and subject to determinate dimensions. This form of corporeity is common to all terrestrial material substances. Albert paraphrases Averroës' *De substantia orbis* (cap. 1):

> the corporeity of matter, which is like a primary form for all other forms that are corporeal perfections, remains in the substance and is never stripped from it in any corporeal change. If it were stripped away, a body would [come] to be from a non-body, and a body would come to be from nothing, which we have shown (in the First Book of the *Physics*) to be impossible according to nature.[36]

The fact that prime matter is made divisible and susceptible of determinate dimensions is attributable to the form of corporeity; but the form of corporeity does not give the substance its actual, determinate dimensions.[37] It is the substantial form that gives rise to the actual determinate dimensions, and also to the active qualities that are proper to the substance. Terrestrial substances, then, are explained by the following principles. Prime matter accounts for the basic potentiality of the substance; the fact that it can potentially acquire some new form, whether accidental or substantial, is attributable to prime matter. The fact that terrestrial substances are divisible and subject to quantity is attributed to a form that is naturally prior to the substantial form; this form is the form of corporeity, which is a common form to all terrestrial substances. The form of corporeity, however, does not specify any actual, determinate dimensions or qualities. It is the substantial form which determines specific quantities and qualities.

The substantial form that is an Intellect or an Intelligence, and that is the form of a heavenly body, has a rather different relation to its substance.[38] Such a form is a universal agent of sorts; it knows in its way all possible forms, and in its intellectual

[36] "corporeitas materiae, quae est sicut forma prima respectu omnium formarum, quae sunt perfectiones corporeae, remanet in ipsa, et numquam dedudatur ab ipsa in aliqua transmutatione quorumcumque corporum; et si denudaretur, contingeret, quod corpus esset ex omnino non-corpore et quod fieret corpus ex nihilo omnino, et hoc ostendimus impossibile esse secundum naturam in *primo Physicorum*" (ibid. [Cologne 62.80–63.6]).

[37] Ibid. (Cologne 63.7-44).

[38] Ibid. (Cologne 63.45-60).

operation is not limited by any body. It cannot, therefore, be the actuality or perfection of any body. Now prime matter, which is potentially all things, is in itself receptive of this kind of substantial form, and it is receptive of this form before any corporeity. This means that the matter of the heavenly body remains indivisible, and hence incorruptible, for it never has the form of corporeity. The heavenly body is *material* but it is so without the form of corporeity, and it is this form of corporeity that is the principle of divisibility. That which is not divisible cannot receive contrary qualities, for contrary qualities require spatially different parts, and spatially different parts imply divisibility. Since the heavenly body cannot receive contrary qualities, it is not liable to corruption. It is, therefore, incorruptible.

It would be wrong, however, to suppose that the heavenly bodies are not corporeal or do not have corporeal dimensions. They are bodies and they do have determinate dimensions, but these dimensions are given to the body by the first cause, which constitutes them in being.[39] They do not arise from the generation of a substantial form out of the potency of matter. In the case of the heavenly body, the matter is simply constituted as a body by its maker and it is given a substantial form, but the substantial form is not the act of the body. The relationship between the Intelligence and the heavenly body is compared by Albert to the relationship between the human body and the human soul. There is, it should be noted, a kind of dualism in Albert's account of human nature,[40] but this dualism makes Albert's account of the heavenly bodies more plausible.

[39] "determinavit Aristoteles, quod tales formae sunt non constitutae per subiectum sive per materiam, quemadmodum corporum formae omnes per materiam constituuntur quoad hoc quod educuntur de materia sicut actus de potentia. Sed potius omnes istae sunt constitutae a causa prima secundum omnes origines caelorum et caelestium corporum" (ibid. [Cologne 63:84-91]).

[40] Steven Baldner, "Is St. Albert the Great a Dualist on Human Nature?" *Proceedings of the American Catholic Philosophical Association* 67 (1993): 219-29; idem, "St. Albert the Great on the Union of the Human Soul and Body," *American Catholic Philosophical Quarterly* 70 (1996): 103-20.

Aristotle has said that [the Intelligences] are separate substances, and for this very reason he has also said that the intellect of man is given from outside. Every form brought from potency into actuality is restricted to the potency of matter and can only have a limited operation. When matter is made actual, it is then divided or not divided by way of corporeity, as we have said. Hence every form brought forth from the potency of matter is consequent upon corporeity.[41]

From the discussion I have given of this text, it is clear that Albert understands the Aristotelian position to be that there is one prime matter, but this one prime matter can either be liable to division, and hence corruption, or not so liable. If it is liable to corruption, it must have a presubstantial form of corporeity through which it is united to its substantial form. If it is not liable to corruption, it does not have the form of corporeity and it is simply made by God to be an actually existing thing in a certain, determinate way. It does not *become* an actually existing thing by having a substantial form brought into existence from the potency of matter. This actually existing material thing is united, not substantially, but dualistically to a "form" or intelligence or mover. Such is the incorruptible matter of the heavenly bodies.

Four chapters later in his paraphrase of *De caelo,* Albert again confirms the position expressed above, that the heavenly bodies are made of a matter that does not have any inherent indeterminate dimensions.[42] The forms of the heavenly bodies are not divisible materially and cannot be made many by matter; such forms are probably different from one another as species rather than as individuals made different by matter.[43] Albert does, however, express some doubt about the true position of Averroës. Averroës might mean that the heavenly bodies are pure forms without matter and that there really is no matter at all in the

[41] "dixit Aristoteles eas esse substantias separatas et hoc eadem de causa dixit intellectum hominis ingredi ab extrinseco, quia omnis forma de potentia ad actum secundum potestatem materiae educitur et non potest esse nisi limitatae operationis, quia cum materia efficitur actu, tunc dividitur et non dividitur nisi per corporeitatem, ut diximus, ideo omnis forma educta de materia sicut de potentia, est consequens corporeitatem" (*De caelo,* lib. 1, tract. 3, cap. 4 [Cologne 63:91-64:7]).

[42] *De caelo,* lib. 1, tract. 3, cap. 8 (Cologne 72:31-42).

[43] Ibid. (Cologne 72:76-90).

heavens.[44] Such a view, however, is absurd, for the obvious reason that the heavenly bodies are observable to our senses. Such bodies must, if we can really see them, have matter that is recognizable by its potency for local motion.

Later in *De caelo,* Albert confirms the position given above.[45] One quotation from this chapter sums up the reason for the incorruptibility of the heavenly bodies: "[the heavenly body] has matter that naturally receives form before dimension, a form that is separate and that gives being to it."[46]

II. Thomas's Early Position on the Incorruptibility of the Heavens

In the years between 1252 and 1258 (possibly as late as 1259), Thomas composed his commentary on the *Sentences* of Peter Lombard and also his commentary on Boethius's *De Trinitate.*[47] In both of these works, Thomas expresses approval of the Averroist position on the matter of the heavenly bodies.

In the commentary on the *Sentences,* Thomas asks the question (in the context of his discussion of the six days of creation), whether there is one matter for all bodily creatures.[48] There are two philosophical positions on this question, says Thomas, and each position has its followers. One position is that of Avicenna, according to whom there is only one matter for all corporeal beings, for the reason that all corporeal beings are equally *material* beings, and hence "matter" means the same thing for all corporeal beings.[49] Since matter has the same meaning wherever

[44] Ibid. (Cologne 73:35-47).

[45] *De caelo,* lib. 2, tract. 1, cap. 1 (Cologne 104.7-47).

[46] "ipsum [corpus caeleste] habet materiam, quae etiam per naturam ante dimensionem accepit formam, quae forma est separata, et illa largitur ei esse" (ibid. [Cologne 104:18-20]).

[47] Jean-Pierre Torrell, *Saint Thomas Aquinas,* vol. 1: *The Person and His Work,* trans. Robert Royal (Washington, D.C.: The Catholic University of America Press, 1996), 332, 345.

[48] II *Sent.,* d. 12, q. 1, a. 1, resp. (*Scriptum super libros Sententiarum,* ed. Pierre Mandonnet [Paris: Lethielleux, 1929] pp. 301-4).

[49] "Avicenna . . . videtur ponere unam materiam esse omnium corporum, argumentum ex ratione corporeitatis assumens, quae cum sit unius rationis, una sibi materia debetur" (II *Sent.,* d. 12, q. 1, a. 1 [Mandonnet, ed., 302]).

it is found, the reality of matter is the same reality wherever it is found.

The other position, says Thomas, is that of Averroës, who refutes the position of Avicenna. Averroës, according to Thomas, reasons as follows.[50] Since matter in itself is in potency to all forms, and since it cannot be simultaneously under all forms, it must be the case that matter is actually found under one form but is in potency to the others. But if this is the real passive potency of matter, there must also be an active potency capable of bringing that passive potency into actuality, otherwise the passive potency would be in vain. But, in fact, there is no active potency that can actualize the supposed passive potency of the matter of the heavenly bodies. The evidence that there is no such active potency is found in the fact that there is no contrary to the perfect circular motion of the heavenly bodies. Hence, as Averroës says, there is no prime matter in the heavenly bodies. This means that the heavenly bodies are simple material beings, not composed of matter and form, as are the four earthly elements and those things made of them.

One possible objection to this Averroist position is that the heavenly bodies could be composed of form and matter, provided that the form were so overwhelming that no potency would remain in the matter for some other form. A kind of super-form could completely satisfy the appetite of prime matter for form, and thus prime matter would be the ultimate substrate of all corporeal beings, both in the heavens and on earth. Against this objection, Thomas responds that the potency of matter is only

[50] "Hanc autem positionem Commentator improbare intendit in princ. *Caeli et mundi* et in pluribus aliis locis, ex eo quod cum materia, quantum in se est, sit in potentia ad omnes formas, nec posit esse sub pluribus simul, oportet quod secundum quod est sub una inveniatur in potentia ad alias. Nulla autem potentia passiva invenitur in natura cui non respondeat aliqua potentia activa, potens eam in actu reducere; alias talis potentia frustra esset. Unde cum non inveniatur aliqua potentia naturalis activa quae substantiam caeli in actum alterius formae reducat, quia non habet contrarium, sicut motus ostendit, quia motui naturali ejus, scilicet circulari, non est aliquid contrarium ut dicitur in I *Caeli et mundi*, text. 20, oportet quod in ipso nihil inveniatur de materia prima inferiorum corporum" (II *Sent.*, d. 12, q. 1, a. 1, resp. [Mandonnet, ed., 302); see also Averroës, *De caelo,* lib. 1, text. 20 f. 15C-D.

satisfied by its acquiring of the form to which it is in potency.[51] Prime matter is in potency to *all* substantial forms. Hence, the only way in which the entire potency of prime matter could be terminated by form would be for the matter to be actually united to all possible forms at once—an obvious impossibility. The fact that one substantial form is nobler than another does not mean that the more noble form removes the potency for some less noble form. Fire is a higher or nobler element than earth, and yet prime matter under the form of fire remains in potency to the form of earth. Even if we suppose that the form of the heavenly body is the most noble of corporeal forms, it would still not remove the fundamental omnipotentiality of prime matter.

Furthermore, this objection would imply that the heavens are subject to generation and corruption.[52] If one supposes that there is but one prime matter, both in the earthly elements and in the heavenly bodies, then one must also suppose that it is the form of the heavenly body that makes it a heavenly body and not an earthly element. But if the prime matter out of which both are composed is the same, then the form of the heavenly body could also make the matter of an earthly element into a heavenly body. The fact that such a thing would not happen does not remove the possibility that it could happen; but the fact that it could happen is precisely what it means to say that the heavens are generable and corruptible.

[51] "Nec potest dici, quod materiae prout est sub forma caeli, tota potentia terminetur, ita quod nihil remaneat in eadem potentia ad aliam formam; non enim terminatur potentia nisi per adeptionem formae, ad quam erat in potentia; unde, cum materia prima secundum se considerata sit in potentia ad omnes formas naturales, non poterit tota ejus potentia terminari nisi per adeptionem omnium formarum. Non enim una forma recepta in materia, etiam si sit nobilior et magis perfecta, tollit potentiam ad formam aliam minus nobilem; materia enim sub forma ignis existens, adhuc remanet in potentia ad formam terrae. Unde etsi forma caeli sit nobilissima, nihilominus tamen, recepta in materia prima, non terminabit totam potentiam ejus, nisi simul cum ipsa recipiantur omnes aliae formae; quod est impossible" (II *Sent.*, d. 12, q. 1, a. 1, resp. [Mandonnet, ed., 302]).

[52] "Et praeterea si poneretur quod forma caeli per suam perfectionem, totam materiae potentiam terminaret, adhuc oporteret quod materia stans sub forma elementari, esset in potentia ad formam caeli, et reduceretur in actum per actionem virtutis caelestis; et ita caelum esset generabile et corruptibile" (II *Sent.*, d. 12, q. 1, a. 1 [Mandonnet, ed., 302-3]).

Behind Thomas's response to this objection are two important tenets of Thomistic natural philosophy. First, if there is a real potency for something in nature, the potency must in due course be realized in act, for nature does not operate in vain.[53] Hence, it would not make sense to Thomas to say that the heavens are in principle corruptible but that they in fact will not corrupt. If the natural principle of their corruptibility is really present, then they must be corruptible and they must in fact undergo corruption. Second, prime matter is recognized to be a real principle of substantial composition because it explains substantial change.[54] When we come to recognize the reality of substantial change—that a genuinely new substance is coming into being—then we are in a position to show that there must be a subject of this change and that this subject must be completely without form or privation. Such a subject, of course, is prime matter. Would we recognize the existence of prime matter at all if there were no substantial change? Perhaps we would not, but Thomas does point out, later, when commenting on Aristotle's *Physics,* that the principles of matter and form are not only principles of *becoming* but also principles of *being.*[55] In order for a material substance to exist, Thomas will say later, it must be

[53] See above (note 50): "Nulla autem potentia passiva invenitur in natura cui non respondeat aliqua potentia activa, potens eam in actu reducere; alias talis potentia frustra esset" (II *Sent.,* d. 12, q. 1, a. 1, resp. [Mandonnet, ed., 302]). See also I *De caelo,* lect. 8, ¶ 91: "nihil est frustra in natura." One might raise an objection thus: if it is true that the passive potency of matter must always be realized in act, this would mean that all possible natural forms must exist, in the past, now, or in the future. This seems to imply that there can be no unrealized natural substance; all possible material beings must be actual beings. If, then, a unicorn or the Loch Ness Monster is a possible being, it must in due course become an actual being. The answer to this objection is that the omnipotentiality of prime matter is a potentiality for all natural forms, but not all merely possible forms (forms which involve no logical contradiction) are natural forms. Only those forms that have actually been created or will be created are natural forms. Hence, the omnipotentiality of prime matter is a potentiality for forms that natural processes could bring about. The potency of prime matter is not equivalent to mere logical possibility. I thank William E. Carroll for raising this point.

[54] Two important texts in which Thomas argues for prime matter as the subject of substantial change are *De principiis naturae,* c. 1 and 2; and I *Physic.,* lect. 13. Joseph Bobik's translation of and commentary on the first text is helpful (Bobik, *Aquinas on Matter and Form and the Elements,* 1-33).

[55] I *Physic.,* lect. 13, ¶ 111.

composed of prime matter and substantial form. In his earlier commentary on the *Sentences,* however, Thomas is of the opinion that a material substance can exist that is *not* composed of prime matter and substantial form, for such are the heavenly bodies.

Finally, Thomas makes it clear that he does not mean that indeterminate (or prime) matter is common to the heavenly and earthly bodies and that some merely determinate (secondary) matter is not common.[56] Some think, wrongly, that matter in some primary sense can be common but that matter in a secondary sense can be determined to be different by different kinds of motion. Such a view is wrong, however, because different kinds of motion are a sign, not a cause, of different kinds of matter. The very different sort of motion in the heavenly bodies—their natural circular motion—is an indication that the matter of the heavenly bodies is very different from that of the earthly. The matter of the heavenly bodies and that of the earthly bodies are simply not common at all.

We shall consider one last objection and Thomas's reply to it. The fifth of the initial objections in the article we have been examining is as follows.[57] Moving bodies are, of course, material bodies. Whenever two moving bodies have the same sort of motion, they must also have the same sort of matter. But heavenly bodies and earthly bodies do have the same sort of motion, namely, local motion. They must both, therefore, have the same sort of matter.

[56] "Nec dico, sicut quidam dicunt, quod conveniunt in materia, si sumatur pro fundamento primo, quod nec est album nec est nigrum, ut dicitur in I *Metaph.*, text. 16, sed differunt in materia secundum quod materia determinatur per motum; diversitas enim motus est signum diversitatis materiae, et non causa, sed e converso: quia motus est actus existentis in potentia; unde oportet quod ubi invenitur una materia per essentiam, inveniatur potentia respectu ejusdem motus, secundum quod materia est in potentia ad plura" (II *Sent.*, d. 12, q. 1, a. 1, resp. [Mandonnet, ed., 303]).

[57] "Praeterea, secundum Philosophum in II *Metaph.*, text. 11, necesse est imaginari materia in re mota. Ergo quaecumque conveniunt in aliquo motu, videntur in materia convenire. Sed loci mutatio communis est superioribus et inferioribus corporibus. Ergo et materia" (II *Sent.*, d. 12, q. 1, a. 1, arg. 5 [Mandonnet, ed., 301]).

Thomas's response to this objection is that matter is, in the first instance, the subject of generation and corruption.[58] Matter is the subject of other motions only insofar as it is taken in some secondary sense, that is, as it is understood to be more or less perfect (*per prius et posterius*), depending upon whether the motion for which it is a subject is more or less perfect. Hence, prime matter, matter in the most basic sense, is found only in those things that are subject to generation and corruption. But prime matter is also found, as a consequence, in things subject to increase, decrease, and alteration, for these three kinds of accidental change all presuppose generation and corruption. (True increase and decrease always involve corruption and generation, and alteration eventually results in corruption and generation.) Local motion, however, is quite different from these other accidental changes.

> Local motion, as is proven in Book VIII of the *Physics*, is the most perfect, because nothing changes in that which is intrinsic to the thing that moves. Hence, the subject of this kind of motion is a thing that is complete in substantial being and in all of the intrinsic properties of the thing. Such motion belongs to the heavenly body. Its matter, therefore, is like a complete substance among the earthly bodies, as the Commentator says in the book, *De substantia orbis*. Hence the matter is common [to the heavenly and the earthly bodies] only by analogy.[59]

In this passage Thomas makes it clear that he endorses the position of Averroës, which is that the existence of prime matter

[58] "Ad quintum dicendum, quod, sicut in I *De Gen.*, cap. iii, dicitur, materia est immediate subjectum generationis et corruptionis; aliorum autem motuum per prius et posterius, tanto plus quanto illud secundum quod est mutatio, majorem perfectionem motus praesupponit: et ideo in illis tantum est unitas materiae primae quae in generatione et corruptione conveniunt, et per consequens etiam illa quae conveniunt in tribus motibus, scilicet augmento, et diminutione, et alteratione, secundum quod augmentum et diminutio non est sine generatione er corruptione, quae etiam alterationis terminus est" (II *Sent.*, d. 12, q. 1, a. 1, ad 5 [Mandonnet, ed., 304]).

[59] "Sed loci mutatio, ut in VIII *Physicor.* probatur, est maxime perfecta, quia nihil variat de eo quod est intraneum rei; unde subjectum hujus motus est ens completum in esse primo, et in omnibus proprietatibus intraneis rei; et talis motus convenit corpori caelesti; et ideo materia ejus est sicut subjectum completum in istis inferioribus, ut dicit Commentator in lib. *De substantia orbis*; unde remanet communitas materiae secundum analogiam tantum" (II *Sent.*, d. 12, q. 1, a. 1, ad 5 [Mandonnet, ed., 304]).

necessarily implies generation and corruption. Where there is no generation and corruption, as in the heavenly bodies, there is no prime matter. Where there is no prime matter, there is no composition of matter and substantial form. The heavenly bodies, hence, are not composed of matter and form; they are of themselves simple bodies and are like complete, composed earthly substances in that they are substantially complete.

Shortly after the composition of the commentary on the *Sentences,* Thomas composed (1257-58) his commentary on Boethius's *De Trinitate.* In a question devoted to the division of speculative sciences (lect. 2, q. 1), Thomas treats the problem of whether the divine science (taken either as philosophical metaphysics or as revealed theology) treats of immaterial beings. The fourth initial objection and Thomas's reply are instructive for us.

The fourth objection is that whatever exists is either pure matter, pure form, or a composite of matter and form.[60] An angel, however, is not pure form, for if it were it would be pure act, but only God is pure act. Neither is it pure matter. It is, therefore a composite of form and matter. From this fact one must infer that divine science, which treats of angels, concerns things that *are* material.

The first part of Thomas's response to this objection is as follows.

> It ought to be said that act and potency are more common than matter and form. And thus, even if there is no composition of matter and form in the angels, one is able to find in them potency and act. Matter and form are parts of that which is composed of matter and form, and hence the composition of matter and form is only found in those things that have one part related to the other as potency to act. Furthermore, what is able to be is also able not to be, and hence it is possible to find one part with the other and also without the other. And hence, as the Commentator says in *De caelo*, book 1, and *Metaphysics*, book 8, the

[60] "Praeterea, ut videtur Commentator dicere in principio *Physic.* [comm.. 1], omne quod est, vel est materia pura, vel forma pura, vel compositum ex materia et forma. Sed Angelus non est forma pura, quia sic esset actus purus, quod est solius Dei; nec est materia pura. Ergo est compositum ex materia et forma. Et sic scientia divina non abstrahit a materia" (*In Boet. De Trin.,* lect. 2, q. 1, a. 4, arg. 4 [ed. M Calcaterra, in *Opuscula theologica,* vol. 2 (Rome: Marietti, 1954), 375]).

composition of form and matter is only found in those things that are naturally corruptible.[61]

In agreement with Averroës, Thomas holds that the composition of form and matter is found only in those beings that are naturally subject to generation and corruption. Since the heavenly bodies are not subject to generation and corruption, they are not composed of form and matter. They are, however, material beings. Averroës allows that there can be instances of pure matter—material beings not composed of form and matter—and Thomas accepts this Averroistic tenet as an explanation for the heavenly bodies.

One might object that, in the case of the heavenly bodies, accidents (such as shape) are perpetually caused to be by their subjects, for the heavenly body perpetually makes its shape to be, as shape is an accident flowing from the substantial reality of the heavenly body. If this is so, then one might think that a heavenly body could also be perpetually composed of form and matter. But the two cases, says Thomas, are not parallel. A substance causes its proper accidents as an active potency; given the existence of the substance, the accidents proper to the substance flow naturally from the essential nature of the thing. The relation of matter to substantial form, however, is very different.

> Matter is not the cause of form in the way in which [a substance is the cause of its proper accidents], and therefore any matter that is subject to some form is also able not to be subject to that form, unless, by way of exception, matter could be joined to form by some extrinsic cause. We believe, for example, that

[61] "Ad quartum dicendum, quod actus et potentia sunt communiora quam materia et forma. Et ideo in Angelis, etsi non inveniatur compositio materiae et formae, potest tamen in eis inveniri potentia et actus. Materia enim et forma sunt partes compositi ex materia et forma et ideo in illis invenitur tantum compositio materiae et formae, quarum una pars se habet ad aliam ut potentia ad actum. Quod autem potest esse, potest etiam non esse, et ideo possibile est unam partem inveniri cum alia et sine alia, et ideo compositio materiae et formae non invenitur, secundum Commentatorem in I *Caeli et Mundi* [comm. 20] et in VII *Metaph.* [comm.. 4] nisi in his, quae sunt per naturam corruptibilia" (*In Boet. De Trin.*, lect. 2, q. 1, a. 4, ad 4 [Calcaterra, ed., 377]). Litt, too, recognizes that Thomas in this text is adopting the position of Averroës. Litt, however, regards this text as an aberration from what he takes to be the consistently held position of Thomas that there are two kinds of prime matter; see Litt, *Les corps célestes*, 86-88.

by divine power the resurrected bodies, although composed of contraries, will be maintained incorruptibly.[62]

In two early works, the commentary on the *Sentences* and the commentary on Boethius's *De Trinitate,* Thomas affirms the Averroist position on the matter of the heavenly bodies. Material beings that are composed of prime matter and substantial form are by that very fact necessarily liable to generation and corruption. Since the heavenly bodies are neither generable nor corruptible, they cannot be composed of matter and form. They are clearly material bodies, for we can see them, but they must be simple, noncomposed units of matter. Thomas will often say, in his early works, that the matter of the heavens is different from the matter on earth. He does not mean that there are two kinds of prime matter. He means, rather, that the material substances here below are composed of prime matter and substantial form and that the matter of the heavenly bodies is pure, that is, without any composition at all.

III. Thomas's Mature Positions on the Incorruptibility of the Heavens

After the 1250s, Thomas did not again endorse the position of Averroës. In fact, as we shall see, when Thomas treated the problem of the matter of the heavenly bodies formally, he rejected Averroës' position as an absurdity, for he recognized that all material bodies, including the heavenly bodies, must be composed of form and matter. The problem, then, is how to explain the incorruptibility of the heavenly bodies while affirming also that they are composed of substantial form and prime matter, like all other material bodies.

I have found some difficulty in determining Thomas's position in his maturity, for reasons that will be brought forth, but there

[62] "Materia autem non est hoc modo causa formae, et ideo omnis materia quae subset alicui formae, potest etiam non subesse, nisi fortassis a causa extrinseca conteneatur, sicut virtute divina ponimus aliqua corpora, ex contrariis composita, esse incorruptibilia, ut corpora resurgentium" (*In Boet. De Trin.,* lect. 2, q. 1, a. 4, ad 4 [Calcaterra, ed., 377]).

are two things that Thomas always affirms. First, he always affirms that in some sense the matter of the heavenly bodies is different from the matter of the earthly bodies. He expresses this in various ways: the matter of the heavens is *alia et alterius rationis* or it is *omnino diversa* from that on earth; or he says that *omnium corporalium non est eadem materia* or *non est eadem materia corporis caelestis et elementorum*. On the other hand, Thomas does not say that there are two kinds of prime matter or that the prime matter of the heavens is different or diverse from that on earth. In some way the matter of the heavenly bodies is different from that on earth, but what does that mean? At the very least it means that a different sort of matter is found beyond our atmosphere from the matter that is found here. That is, the four elements (fire, air, water, and earth) are found in our realm, but the moon, the planets, the sun, and the stars are made of the fifth element, ether. None of the kinds of matter found down here are found up there; there is a complete diversity of matter in the two realms. But does the claim that the matter of the heavens is completely diverse from that on earth mean something more? Does it mean that there is a different kind of prime matter in the heavens from that on earth? To this question, as I shall show below, Thomas appears to give two answers, although perhaps they can be reconciled.

Second, Thomas always affirms that the form of the heavenly body so perfects the matter that there is no privation remaining in the heavenly body for substantial change. In some way, the form is the cause of the incorruptibility of the heavenly bodies. It is a different sort of form from that which is found in earthly substances; it is able, so to speak, to satisfy completely the desire of matter for form. But why is it able to do so? Is it because of the form alone, that is, because the form is of such eminence that it can satisfy the omnipotency of prime matter? Or is it because the prime matter of the heavens is a different sort of prime matter from that on earth, different in such a way that it is ordained to one form only?

Thus, although Thomas always says that the matter of the heavens is different from that on earth and that the form of the heavenly bodies is the reason that there is no privation in the heavenly bodies, neither of these claims determines an answer to the question of whether there are two kinds of prime matter. It is consistent with both claims both to affirm and to deny that there are two kinds of prime matter. What, then, does Thomas explicitly say about this question?

In the *Prima pars* (*STh* I, q. 66, a. 2),[63] Thomas deals with the problem of whether there is one matter for all corporeal beings. He does so, as in his commentary on the *Sentences,* in the context of his discussion of creation and the six days. In the *Summa Theologiae,* Thomas rejects the position, which he attributes to Plato, that the matter of the heavens is not really different from that below. On the basis of observation we know that the motion of the heavenly bodies is fundamentally different from that of earthly bodies. We also know that there are no motions or qualities contrary to those of the heavenly bodies. The matter of the heavenly bodies, therefore, must be different in order to explain the fundamental difference in motion and activity. Thomas also rejects the position of Avicebron, according to whom matter is one and the same for all corporeal beings, by virtue of a common "form of corporeity." This view is rejected because it implies a plurality of substantial forms and, hence, that there really is no substantial change but only accidental change.

Setting aside Plato and Avicebron, an Aristotelian would say that no form remains in the substrate of substantial change.[64] This

[63] The first part of the *Summa Theologiae* was written in 1265-68 (see Torrell, *St. Thomas Aquinas,* 333).

[64] "Supposito autem quod nulla forma quae sit in corpore corruptibili, remaneat ut substrata generationi et corruptioni, sequitur de necessitate quod non sit eadem materia corporum corruptibilium et incorruptibilium. Materia enim, secundum id quod est, est in potentia ad formam. Oportet ergo quod materia, secundum se considerata, sit in potentia ad formam omnium illorum quorum est materia communis. Per unam autem formam non fit in actu nisi quantum ad illam formam. Remanet ergo in potentia quantum ad omnes alias formas.—Nec hoc excluditur, si una illarum formarum sit perfectior et continens in se virtute alias. Quia potentia, quantum est de se indifferenter se habet ad perfectum et imperfectum; unde sicut quando est sub forma imperfecta, est in potentia ad formam perfectam, ita e converso.—Sic ergo materia, secundum quod est sub forma incorruptibilis corporis, erit adhuc

Aristotelian point, however, implies that matter as the fundamental potency for substantial form, that is, prime matter, must be different in corruptible beings from what it is in incorruptible beings. The principle is the following. Whenever matter is common to more than one thing, it must be in potency to the various forms of the different things to which it is common. If such common matter is determined by one form, it remains in potency to the other forms. No one form among those to which the matter is common, even if it should be the best of all of the forms, could remove this potency, for the potency is in the very nature of matter. Hence, the potency of the prime matter found in corruptible beings will always remain; and this potency is precisely a potency to acquire some other form than the one to which it is currently united. If such prime matter were united to the form of a heavenly body, the matter could acquire another substantial form: but that is just to say that the heavenly body would be corruptible.

Here Thomas rejects, in no uncertain terms, the proposed Averroist solution to the problem.[65] Averroës imagines (*fingit*) that the heavenly body is not a composed body and that the form of the body is something separate that nevertheless is the mover of the heavenly body. But this is an absurd position, for it implies

in potentia ad formam corruptibilis corporis. Et cum non habeat eam in actu, erit simul sub forma et privatione; quia carentia formae in eo quod est in potentia ad formam, est privatio. Haec autem dispositio est corruptibilis corporis. Impossibile ergo est quod corporis corruptibilis et incorruptibilis per naturam sit una materia" (*STh* I, q. 66, a. 2 [Ottawa: Dominican College, 1941], 404a).

[65] "Nec tamen dicendum est, ut Averroës fingit, quod ipsum corpus caeleste sit materia caeli, ens in potentia ad ubi et non ad esse; et forma eius est substantia separata quae unitur ei ut motor. Quia impossibile est ponere aliquod ens actu, quin vel ipsum totum sit actus et forma, vel habeat actum seu formam. Remota ergo per intellectum substantia separata quae ponitur motor, si corpus caeleste non est habens formam, quod est componi ex forma et subiecto formae, sequitur quod sit totum forma et actus. Omne autem tale est intellectum in actu; quod de corpore caelesti dici non potest, cum sit sensibile. Relinquitur ergo quod materia corporis caelestis, secundum se considerata, non est in potentia nisi ad formam quam habet. Nec refert ad propositum quaecumque sit illa, sive anima sive aliquid aliud. Unde illa forma sic perficit illam materiam, quod nullo modo in ea remanet potentia ad esse, sed ad ubi tantum, ut Aristoteles dicit. Et sic non est eadem materia corporis caelestis et elementorum, nisi secundum analogiam, secundum quod conveniunt in ratione potentiae" (*STh* I, q. 66, a. 2 [Ottawa 404a-b]).

that something could be actually existent and not *be* or *have* form. Form, however, is the principle of actuality, which means that whatever is actual must either *be* form or *have* form. The heavenly bodies cannot be pure forms, for pure forms are not perceptible, but heavenly bodies are. The heavenly bodies must, therefore, have forms. To *have* a form means that the capacity or potency of the substance is actualized by form. The capacity or potency for form, in turn, is what is meant by matter. Thus, the heavenly bodies must be composites of matter and form. That which is in potency to form is matter without any form, or prime matter. But here is the problem. The potency of the prime matter of the heavenly bodies must be in potency to one form only, for if it were in potency to other forms, the heavenly body would be corruptible. Since we know that the heavenly bodies are incorruptible, we know that the potency of their prime matter is a potency only for the form to which it is united and to no other form. This, however, means that the prime matter of the heavenly bodies is not the same as the prime matter of the earthly bodies. There are, then, two kinds of prime matter.

One misunderstanding should be avoided. It is, of course, misleading to speak of "two kinds" of prime matter, as though "matter" were a genus with two species, corruptible and incorruptible. This way of speaking would be wrong because it would import a notion of form into the very meaning of matter. If matter were a genus, in order to distinguish one "kind" of matter from another, each kind would have to be formally distinct. But to say that they are formally distinct is to suppose that there is a form by which they are distinct. Prime matter, of course, is understood to be pure potency. Since Thomas is committed to the position that there is only one substantial form in every substance, he is also committed to the pure potentiality of prime matter. We cannot pretend to distinguish "kinds" of prime matter by virtue of some formal determination. Rather, when Thomas claims that the matter of the heavenly bodies is of a different sort from that down here, he means that the two matters are simply different beyond any possible common genus.

The position that Thomas gives in the *Summa Theologiae,* then, is the following. The prime matter of earthly bodies is an omnipotentiality for substantial form. No one substantial form, no matter how perfect, can satisfy that potentiality. Hence, if the heavenly bodies are incorruptible, they can only be so because the prime matter in them is different. Heavenly prime matter does not have an omnipotentiality but rather a potency for one form only. This one form to which the prime matter is in potency can satisfy the potency of prime matter and therefore remove from it any privation to other substantial forms. It can do so precisely because the matter is ordained to it and to no other form.

Somewhat later in his life, when he wrote his commentary on Aristotle's *De caelo* (1272-73)[66] and *De substantiis separatis* (1271),[67] Thomas explains the incorruptibility of the heavenly bodies with an emphasis that is considerably different from that which is found in the *Summa Theologiae*. In these later works, he lays stress on the fact that it is the form of the heavenly bodies that makes them incorruptible. There is a change of emphasis from matter to form, and this change is indicative, I think, of a change in doctrine.

In lecture 6 of book 1 of the commentary on *De caelo* 1.3, Thomas comments on Aristotle's argument for the incorruptibility of the heavenly bodies.[68] From the fact that only circular motion is found in the heavens and that there is no motion that is contrary to circular motion, we infer that there is nothing contrary to the heavenly bodies. If there is nothing contrary to the heavenly bodies, we can infer that there is no generation and corruption there, for generation and corruption is always from one contrary to another. The heavenly bodies, therefore, are incorruptible.

Against this Aristotelian argument, John Philoponus, Thomas reports, has objected with three arguments, the second and third of which are relevant to our problem. Philoponus's second argument is that all heavenly bodies are finite bodies, and all finite

[66] Torrell, *St. Thomas Aquinas,* 344.

[67] Ibid., 350.

[68] Aristotle, *De caelo* 1.3.270a12-22.

bodies have finite power. But whatever has finite power can only exist for a finite amount of time. Therefore, Philoponus concludes, the heavenly bodies are temporally finite and hence corruptible.[69]

We need not pay attention to Thomas's own answer to this objection, but we will look at Thomas's rejection of Averroës' mistaken attempt to answer this objection. Because of the sort of argument that Philoponus has given, Averroës mistakenly claimed that the heavenly body does not have a power (*potentia*) for existing but only a power (*virtus sive potentia*) for local motion.[70] Hence, on Averroës' account, the heavenly body would not have its own power of existing—that is, its own form—and hence the form of the heavenly bodies must be separate.[71] Averroës, however, was deceived,

> because he thought that the power of existing belongs only to the passive potency, which is the potency of matter, whereas in fact it belongs more [or "rather"—*magis*] to the potency of form, because each thing is through its form. Hence, any thing has being to the extent and for the length of time that corresponds to the power of its form. And so it is that there is a power of being forever, not only in the heavenly bodies but also in the separate substances.[72]

A thing *is*, Thomas tells us, through its form; this is true for material things and for immaterial things. Form makes the thing to be the kind of thing that it is, and the kind of thing is either

[69] "Omnis virtus corporis finiti est finita, ut probatur in VIII *Physic.*: sed virtus finita non potest se extendere ad durationem infinitam (unde per virtutem finitam non potest aliquid moveri tempore infinito, ut ibidem probatur): ergo corpus caeleste non habet virtutem ut sit infinitum tempore" (*In Aristotelis libros De caelo et mundo*, ed P.M. Maggiolo [Rome: Marietti, 1965] lib. 1,lect. 6, ¶ 59 (pp. 29-30).

[70] "Quod autem obiicit [Philoponus] virtutem corporis caelestis esse finitam, solvit Averroës dicendo quod in corpore caelesti est virtus sive potentia ad motum secundum locum, non est autem virtus sive potentia ad esse, neque finita neque infinita" (I *De caelo*, lect. 6, ¶ 62 [Maggiolo, ed., 30]).

[71] This sentence is my completion of Thomas's argument.

[72] "Fuit autem [Averroës] deceptus per hoc quod existimavit virtutem essendi pertinere solum ad potentiam passivam, quae est potentia materiae; cum magis pertineat ad potentiam formae, quia unumquodque est per suam formam. Unde tantum et tamdiu habet unaquaeque res de esse, quanta est virtus formae eius. Et sic non solum in corporibus caelestibus, sed etiam in substantiis separatis est virtus essendi semper" (I *De caelo*, lect. 6, ¶ 62 [Maggiolo, ed., 30]).

corruptible or incorruptible. The role of matter here is either not so important or, as I think, is not important at all.

Philoponus's third argument is that any natural body must have matter and privation, and wherever there is matter and privation there must be a potency to corruption. If the matter of the heavens were different from that down here (thus explaining the incorruptibility of the heavens), such a difference in matter could only come about because there was some sort of composition in the matter. Matter would have to be composed of what is common to matter and what makes matter different in the corruptible and in the incorruptible cases.[73]

Thomas answers this objection by arguing that, whereas the objector had implied that matter and privation are necessarily correlative, the key to seeing that a heavenly body does not have privation is in the form of that body.

> It is not necessary that the subject or matter [of the heavenly body] have privation, because privation is nothing other than an absence of a form that could naturally belong to the thing. To this matter or subject [that is, of the heavenly body], however, no other form could naturally belong, because its own form completely satisfies the potentiality of matter, since it is a kind of total and universal perfection. This is clear from the fact that the [heavenly body's] active power is universal, not limited like the power of earthly bodies, whose forms, since they exist in a limited way, cannot completely satisfy the entire potentiality of matter. Hence, [in an earthly body] the privation of some other form that it could naturally acquire remains in the matter along with the form [that it does have].[74]

[73] "In omni corpore naturali est materia et privatio, ut patet ex I *Physic.*: sed ubicumque est materia cum privatione, est potentia ad corruptionem: ergo corpus caeleste est corruptible. Si quis autem dicat quod non est eadem materia caelestium corporum et inferiorum, obiicit in contrarium: quia secundum hoc oporteret quod materia esset composita, ex eo quod facit diversitatem inter materias" (I *De caelo,* lect. 6, ¶ 60 [Maggiolo, ed., 30]).

[74] "Non tamen oportet quod istud subiectum vel materia habeat privationem: quia privatio nihil aliud est quam absentia formae quae est nata inesse, huic autem materiae vel subiecto non est nata inesse alia forma, sed forma sua replet totam potentialitatem materiae, cum sit quaedam totalis et universalis perfectio. Quod patet ex hoc, quod virtus activa eius est universalis, non particularis sicut virtus inferiorum corporum; quorum formae, tanquam particulares existentes, non possunt replere totam potentialitatem materiae; unde simul cum una forma remanet in materia privatio formae alterius, quae est apta nata inesse" (I *De caelo,* cap. 3, lect. 6, ¶ 63 [Maggiolo, ed., 30]).

Thomas here seems to be affirming what he denied in the *Summa Theologiae:* that a more perfect, more universal, more powerful form could completely satisfy the potentiality of matter. The problem raised by Philoponus is about privation: does a material substance always have privation? No, says Thomas here, because some material substances have forms that are sufficiently eminent to disallow any privation. If by virtue of form the heavenly body has no privation of other forms, then it is by virtue of form that the heavenly body is incorruptible. The point of the objection had been that it is by virtue of matter that the heavenly body is corruptible; Thomas's response is that it is by virtue of the form that the heavenly body is incorruptible.

Thomas gives the heavenly bodies' inalterability as another instance of their lack of privation (for there is in the heavenly bodies only a privation of place), and then he comments on the matter of the heavenly bodies.

> From which it follows that the matter of the heavenly body is different from that of the earthly bodies, not because there is some composition [in the matter], as Philoponus thought, but through the relation [*habitudo*] of [matter] to different forms, one of which is total and the other is partial. In this way the potentialities [of matter] are diversified by the diversity of actualities to which they are related.[75]

Matter in itself, prime matter, is unknowable. It is knowable not itself but only in relation to form. The word "relation," of course, is out of place, because matter is not *related* to form, as though matter and form were two *things*. Matter is different, however, according to the different forms that we recognize. If the form is the form of an incorruptible substance, we have incorruptible matter; if the form is the form of a corruptible substance, we have corruptible matter. Thomas agrees with Philoponus that there cannot be any composition in matter, but if so, how then to

[75] "Ex quo patet quod materia caelestis corporis est alia et alterius rationis a materia inferiorum corporum, non quidem per aliquam compositionem, sicut Philoponus existimavit; sed per habitudinem ad diversas formas, quarum una est totalis et alia partialis: sic enim potentiae diversificantur secundum diversitatem actuum ad quos sunt" (I *De caelo,* cap. 3, lect. 6, ¶ 63 [Maggiolo, ed., 31]).

explain that matter is different? We cannot, so to speak, add some additional intelligible note to matter to make it different in one case from what it is in another case. If matter is different, it is because of matter's "relation" to form. But that "relation" (*habitudo*) cannot be something in matter, for that would indicate composition—and that is what Thomas and Philoponus are agreed in rejecting—and hence it must be the fact that matter in one instance is related to, or united to, an incorruptible form, but matter in another instance is related to, or united to, a corruptible form. This would mean that the diversity of matter between the heavenly bodies and earthly bodies is attributable to form.

The passage I have just quoted and commented upon is the crucial one. Can it be interpreted in a different way? I think that one could understand the *habitudo* differently from the way that I have understood (or perhaps misunderstood) it. One could say that by *habitudo* Thomas means the inherent ordination of prime matter: one sort of prime matter is ordained to an incorruptible form and another sort of prime matter is ordained to a corruptible form. In other words, it could be interpreted in accord with the text from the *Summa Theologiae*.

I do not, however, think that this is the best interpretation of this text because of Thomas's specification, again, that the *habitudo* in question is precisely one that is either to a total form or to a partial form. Potencies, Thomas points out, are diversified by the *acts* toward which they are directed. The reason for diversity seems to be on the side of the form and not on the side of the matter. When we find a diversity of matter it is because of a diversity of form, not the other way around. And in that case, "diversity of matter" means a diversity of *secondary* matter, not a diversity of prime matter. Further, the point Thomas is trying to make in this passage is that the *form* of the heavenly body is different from that of the earthly; the heavenly body's form is *total,* not *partial.* It is the fact that the matter of the heavenly body is united to a "total" form that makes it incorruptible, unlike the matter of early bodies that are united to "partial" forms.

The interpretation I have given to the text in *De caelo* is confirmed in the contemporaneous *De substantiis separatis.* In

that work, when he is responding to the position of Avicebron, Thomas explains that there are different levels of creatures. Some participate in being more fully than others. Those that most perfectly participate in being have no principle within them that is "being in potency only" (*non habent in se ipsis aliquid quod sit ens in potentia solum*).[76] These, of course, are the "separate substances," substances that are separate from matter, that is, angels or celestial movers, which are immaterial forms. A second level of creatures is the level of those that do have matter, and the matter is essentially a "being in potency only" (*ens in potentia tantum*).[77] The entire potentiality of this matter is completed by form, so that there remains in such beings no potency for some other form. Such beings—the heavenly bodies—are, therefore, incorruptible. Just as the body of a planet or star is so subject to its fixed quantity and quality that no alteration is possible, so also the matter of such a body is so subject to substantial form that no corruption is possible. Third, there are corruptible substances, which also have matter that is "being in potency only" (*ens in potentia tantum*).[78] The potency of matter in this third sort of

[76] "Illae enim substantiae quae perfectissime esse participant non habent in se ipsis aliquid quod sit ens in potentia solum, unde immateriales substantiae dicuntur" (*De substantiis separatis*, c. 8, in *Sancti Thomae de Aquino Opera omnia iussu Leonis XIII P.M. edita*, vol. 40, part D [Rome: Sancta Sabina, 1969] 54:118-21).

[77] "Sub his vero sunt substantiae quae, etsi in se ipsis huiusmodi materiam habeant quae secundum sui essentiam est ens in potentia tantum, tota tamen earum potentialitas completur per formam ut in eis non remaneat potentia ad aliam formam, unde et incorruptibiles sunt, sicut caelestia corpora; quae necesse est ex materia et forma composita esse. Manifestum est enim ea actu existere, aliquin motus subiecta esse non possent aut sensui subiacere aut alicuius actionis esse principium; nullum autem eorum est forma tantum quia, si essent formae absque materia, essent substantiae intelligibiles actu simul et intelligentes secundum se ipsas: quod esse non potest, cum intelligere actus corporis esse non posit, ut probatur in libro De anima. Relinquitur ergo quod sunt quidem ex materia et forma composita; sed sicut illud corpus ita est huic magnitudini et figurae determinatae subiectum quod tamen non est in potentia ad aliam magnitudinem vel figuram, ita caelestium corporum materia ita est huic formae subiecta quod non est in potentia ad aliam formam" (*De substantiis separatis*, c. 8 [Leonine 54:122-44]).

[78] "Sub his vero substantiis est tertius substantiarum gradus, scilicet corruptibilium corporum quae in se ipsis huiusmodi materiam habent quae est ens in potentia tantum; nec tamen tota potentialitas huiusmodi materiae completur per formam unam cui subicitur quin remaneat adhuc in potentia ad alias formas" (*De substantiis separatis*, c. 8 [Leonine ed., 54-55:145-51]).

substance is not entirely completed by the form to which it is united, and for that reason this kind of substance is corruptible.

In this text, then, Thomas compares separate substances, incorruptible material substances, and corruptible material substances with respect to the same principle: matter understood as "being in potency only." That is, he is comparing the three sorts of substance with respect to prime matter, for prime matter is "being in potency only." There is no prime matter in the separated substances, but there is prime matter in both the heavenly bodies and the earthly bodies. The only difference between the heavenly and the earthly bodies is the difference that comes from form. In the one case, the form so completes the potency of prime matter that there is no potency for some other form; in the other case, the form does not so complete the potency of prime matter and hence there remains the potency for other forms. There is no doctrine of two prime matters. It is the form and the form alone that accounts for the incorruptibility of the heavenly bodies.

IV. Conclusion

Let us summarize what we have found. Early in his academic career (in the 1250s), under the influence of Averroës and Albert, Thomas endorsed, although without much elaboration, an Averroistic view of the heavenly bodies. This view is that the heavenly bodies are not substantially composed of form and matter. Rather, the heavenly bodies are simple units of matter that are moved by separate movers. After this early period, Thomas stoutly rejects the Averroist position, affirming always that no created substance can be actual except by form. A created substance either is a form (as is a separate substance) or it has a form (as does a material substance). Since the heavenly bodies are obviously material substances (for they are visible), they must be composites of form and matter. How, then, are they incorruptible?

Here there are two possible stories. The first is that Thomas recognizes that the prime matter of the heavenly bodies must be a different sort of prime matter from that found in corruptible substances. The prime matter of a heavenly body is uniquely ordained to the form that it has, and because it is so ordained, its form naturally satisfies the entire potency of this matter. Such prime matter would not have the pure potentiality of earthly prime matter but would have a limited potentiality for one form only. The one form toward which it is in potency would have the ability to terminate that potency in such a way that there would be no privation of other substantial forms. If there is no privation, there is no corruptibility. This is the position expressed in the *Summa Theologiae*.

The second story is that of Thomas's later works, the commentary on *De caelo* and *De substantiis separatis*. In these two works Thomas attributes the incorruptibility of the heavenly bodies to the form. It is because the form of the heavenly body has a universal or perfect power that it is able to satisfy the potency of prime matter. There are not two kinds of prime matter but rather two very different kinds of substantial form, the one limited and partial, the other unlimited and universal.

The reason for the two stories would be that Thomas saw more clearly the implications of the incorruptibility of the heavenly bodies. He knew that he had to account for the heavenly bodies as *composed* bodies, but the principles of substantial composition—form and matter—are principles given in the first instance to explain substantial change. Thomas earlier considers the matter as the principle of incorruptibility, but comes later to regard the form as the principle of incorruptibility. Such is the picture of Thomas's development on this topic, as I understand it.

There is, however, another possible reading of the texts, according to which there are not really two stories, but only one. There are not two stories because Thomas always (at least in his mature period) regarded both matter and form as the principles of the incorruptibility of the heavenly bodies. The difference between a text like that in the *Summa Theologiae* and that in *De*

caelo is a difference in emphasis only, not a difference in doctrine. The earlier text emphasizes matter, but does not exclude the role of form, and the later text emphasizes the role of form, but does not exclude the role of matter. Hence Thomas's mature position can be given as one story, not two.

I cannot decisively reject this second reading of the texts. It can plausibly be defended from the texts and it has the merit of making Thomas more consistent in his maturity. As I have tried to indicate, I think that the texts are better interpreted in my way, and I think that my interpretation represents a very plausible account of Thomas's intellectual development. The texts themselves, however, are sufficiently ambiguous to allow both interpretations.

The interpretation I reject requires that *both* matter and form play a role in accounting for the incorruptibility of the heavenly bodies. Matter must be uniquely ordained to a certain form, and the form must so satisfy the potency of matter that there is no privation of other forms. It seems to me, however, that there are two problems philosophically with this interpretation. First, I find it difficult to understand how prime matter can remain indeterminate and yet *of itself* have an ordination to this form rather than that. It seems to me that if prime matter is understood not as pure potency but as some sort of restricted potency, then it is no longer prime matter, but it is matter that has some formal determination. Something must do the restricting; something must make the prime matter to be a restricted not a pure potency. But in such a case, we are no longer dealing with prime matter. Second, if it is true that prime matter in the heavenly bodies has a restricted potency to one form only, then I do not see how form has any role to play at all in accounting for incorruptibility. If the matter can by its own nature be united to one form only, then, of course, the form satisfies the entire potency of that prime matter, but that fact is really attributable to the matter. There would be no need to talk, as Thomas does, about "universal" or "more perfect" forms, as opposed to "particular" or less perfect forms, that are able to satisfy the potency of matter. Thomas's

justification of the role of form in *De caelo* and *De substantiis separatis* would not seem to have much point, if he were indeed maintaining a doctrine of two kinds of prime matter.

Aristotelian principles of form and matter are introduced, fundamentally, to account for change, both substantial and accidental. These principles are under some strain when they are used to explain material substances that are held not to be liable to substantial change. It is good news rather than not for Aristotelian principles and Thomistic philosophy that the incorruptible heavens are no longer a part of the cosmology we are trying to explain.[79]

[79] I wish to express my deep gratitude to three able scholars who contributed to this essay by providing critical commentary on earlier drafts: Prof. Christopher Byrne, Prof. William Carroll, and Prof. Christopher Decaen.

BOOK REVIEWS

Philosophy of Being: A Reconstructive Essay in Metaphysics. By OLIVA BLANCHETTE. Washington, D.C.: The Catholic University of America Press, 2003. Pp. xxiii + 563. $59.95 (cloth), $39.95 (paper). ISBN 0-8132-1095-X (cloth), 0-8132-1096-8 (paper).

Metaphysics, as many recognize these days, has fallen on hard times. Through the course of modern philosophy, it has lost its vital contact with reality and disappeared into the abstractions of "ontology." In this work, Oliva Blanchette takes up the challenge of renewing metaphysical inquiry in the third millennium by deconstructing modern ontology and reconstructing thought as it relates to the concrete. This can be accomplished, he believes, only by returning to a "more ancient view" of this science. He sees his book, accordingly, as "an effort at critical reconstruction in the philosophy of being or metaphysics as understood in the ancient sense." He begins with Heidegger, "who has done more than anyone else in our time to bring the question of being back to the forefront of philosophy," but also enlists the help of Plato, Aristotle, and Aquinas, whom he names "the last great metaphysician in the ancient mode" (xiv-xv).

Blanchette describes this massive work engagingly as a "play" or "dialog" between the author and the reader in which the reader must take an active part since "one does not do metaphysics except on one's own intellectual initiative" and through the exercise of "one's own critical reflection" (xvi). The play has six parts, dealing with the question, meaning, properties, structure, communication, and summit of being.

Part I takes up the subject and method of metaphysics. Rejecting the essentialism of Suarez, Wolff, Kant, and Heidegger, Blanchette argues that "only being taken precisely as being can be taken as the proper subject of metaphysics" (25-26). He begins by affirming that "knowing is of being" and then reviews the different ways of knowing or different sciences to arrive at "the idea of a first kind of knowing." Finally he asks "how the subject of investigation for this first kind of knowing or this first philosophy is to be conceived" (26). This does not involve any judgment about material or immaterial being since being as it "presents itself in the very first act of knowing," in the "primordial conception of being," is "neither material nor immaterial, but simply being, including both, if the two are to be distinguished" (27-28).

In describing the method of metaphysics, Blanchette analyzes the act of intelligence into "understanding" (simple apprehension) and "critical reflection" (judgment). It is in the exercise of judgment that being presents itself to our knowing, and metaphysics begins "in the reflection that occurs in any serious exercise of judgment" (45, 70). Metaphysics is "the attempt to formulate this reflective presence of being in an exercise of judgment that transcends the judgments of direct experience" (74). There is no gap between knowing and being since being is not some "thing in itself" (Kant), but is "simply what is known when knowing takes place" (76). Since being is given in the act or "actual exercise" of judgment, the task of metaphysics is to penetrate the exercise of judgment and so "elaborate the full meaning of being both conceptually and in act" (77).

In the second part of his essay, Blanchette considers the meaning of being. The notion of being involves three aspects: haecceity (this-ness), quiddity, and the act of being (115). Since being is not a category, but a concept that transcends the categories of Aristotle, it has its own transcendental order which can only be expressed through the use of analogy (117). In his discussion of analogy and its distinction from univocity and equivocation, Blanchette provides some helpful insights into the tendency (or even the duty) of the particular sciences to treat their subject matter univocally (a tendency, he notes, which opens the way to reductionism and which, we might add, often plagues the contemporary dialogue between empirical science and theology) (122, 128).

Analogy is a key element "in the reconstruction of a metaphysics that is true to the question of being in its difference and in its diversity" (120). For being is not to be seen as "some generic category in which all beings could equally fit," but rather as "an order of different beings unified conceptually by a reference to one" (119). Using Aquinas's discussion from the *Commentary on the Sentences* (I *Sent.*, d. 19, q. 5, a. 2, ad 1), Blanchette shows how both differences and similarities of meaning are built into the analogous term. He departs from Aquinas and Aristotle, however, in his argument that the "one" or the "prime analogate" for being is neither substance (Aristotle, *Metaphys.* 1003 b5-10) nor God (Aquinas, *STh* I, q. 13, aa. 5-6), but rather the human being (130-39). In this, he notes that he is following Heidegger and also intentionally beginning with what is better known to us rather than better known in itself. By limiting being to the way "it presents itself in experience," however, he does seem in danger (despite his arguments to the contrary) of limiting the metaphysical enterprise to the realm of human experience: "Only with a primary analogate properly located in the human being can we proceed to a metaphysical account of the differences of being as given in experience. For being can be understood in the full analogy of its difference only through reference to this one—*pros touto hen*" (138-40).

In part 3, Blanchette gives a careful and nuanced discussion of the transcendental modes of being, including not only being as one, true, and good, but also being as active and being as universe. Here again, "it is from human being and in relation to human being that we come to understand all of being." Being is

understood as true and good not in relation to divine being, but "from the standpoint of our own intelligence and will" (194). With this starting point, it is not clear that his attempt "to think of being in its transcendental openness, even to the point of infinity" really escapes the limits of human thought and experience in which the discussion is framed (195-96). "Truth and goodness are properties of being precisely in this relation of all being or beings to human being as both intelligence and appetite." Though admittedly not itself "the summit of being or the norm of all truth and goodness," human being remains "the being around which our conception of being as given in experience is ordered" (232-33).

Blanchette's treatment of the structure of being in part 4 begins with a discussion of the differences in being and the distinction between being and becoming and then goes on to consider substance, matter (potency), form (act), the act of being, and the real distinction between essence and the act of being. In distinguishing being from becoming, he uses the "unsurpassed" (249) arguments of Aristotle to negotiate between Parmenides and Heraclitus (and Whitehead). He also points out some helpful similarities between Aristotle's principles of change and certain features of modern science (255). His discussion of matter provides a useful corrective to the tendency to reductionism in modern science (286) and brings out an often overlooked "dynamic" aspect in the passivity of prime matter (294, 297).

In part 5, Blanchette retrieves the notion of final cause which is generally neglected by modern science and puts the notion of efficient cause into a metaphysical rather than merely mechanistic context. Final cause is explained in relation to formal cause, and efficient cause in relation to material cause. Here, accepting human being as the primary analogate of being is useful since it immediately allows the notion of intentionality (evidently a characteristic of human activity) to enter into the broader discussion of causality. Final causality explains *why* different beings tend to interact, and efficient causality explains *how* they interact in the communication of being (406). Blanchette's careful explanation of how beings constitute a "universe" only through their dynamic interactions can serve as a corrective to those who would characterize the world of Aristotle or Aquinas as "static."

The final part of the book takes up the question of God as the summit of being. Rather than starting with a particular being or a particular relationship among beings as Aquinas does in his five ways (*STh* I, q. 2, a. 3), Blanchette begins with a question about the cause of all being "in its commonality" (479). He asserts that "[u]nless we first raise the question of being as being, we cannot in any way raise the question of a universal cause of being as being" and asserts that even "when one agrees to the conclusion that God exists, say, in faith, if there is not metaphysical understanding, it can only be a non sequitur open to all sorts of misunderstandings" (493-94). Although he employs Aquinas's five ways to establish the existence of God, he tends to ground them in human experience rather than reality. He asserts, for instance, that Aquinas begins his first three ways of showing that God exists with "different aspects of being as

given in experience" (505). A careful reading of Aquinas, however, shows that he begins not with being under the aspect of experience, but with being as such: "It is certain and evident to our senses, that in the world some things *are* in motion" (*STh* I, q. 2, a. 3), not that some things are *experienced* as being in motion. Blanchette's example of a pool player who hits a ball which sinks another ball is a helpful illustration of a cause that causes the motion of another, but it does not seem an adequate representation of the "*per se* subordinated moving causes" required in the first way (508), where the last in the series cannot act unless the first is presently active.

In his discussion of transcendence and immanence, Blanchette is concerned to show the limits of philosophy. While theology may have God as its subject, metaphysics attains God only as the principle of its subject. He clearly explains that philosophy is not able to know *what* God is, but then suggests that theology is capable of such knowledge: "Let us think back to the notion of theology we have already referred to as the science that would have God as the *subject* of its consideration. We have argued that metaphysics, by itself as the science of being as being, cannot give rise to any kind of positive theology of this kind, since that would have to presuppose that it can give us an account of *what* God is as God, which, as we have also argued metaphysics cannot do" (551). For Aquinas, however, even theology cannot give an account of *what* God is: "By revelation of grace in this life we cannot know of God what he is," and "[n]either a Catholic nor a pagan knows the very nature of God as it is in itself." (*STh* I, q. 12, a. 13, ad 1; *STh* I, q. 13, a. 10, ad 5).

Blanchette has produced a book of colossal breadth and depth of erudition, and the criticisms raised here in no way diminish that accomplishment. It is a work that solidly establishes the metaphysical enterprise at the beginning of the third millennium. All contemporary philosophers will surely find profit in its careful study.

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Restoring Faith in Reason. Edited by LAURENCE PAUL HEMMING and SUSAN FRANK PARSONS. London: SCM Press, 2002. Pp. 320. $24.95 (paper). ISBN 0334028418.

The bulk of this book (pp. 1-173) consists of the Latin text of the 1998 encyclical letter *Fides et ratio,* together with a facing-page English translation. This is followed by a commentary on the encyclical by James McEvoy (175-98), and then by seven essays on various aspects and implications of the letter. The

essays, by Wayne J. Hankey, Laurence Paul Hemming, Eilert Herms, Nicholas Lash, Aristotle Papanikolaou, Robert Sokolowski, and Janet Soskice, are mostly by Catholic philosophers and theologians, but Orthodox (Papanikolaou) and Protestant (Herms) Christianity are represented as well. There are, in addition, name- and subject-indexes to the encyclical and the interpretive materials. The volume is presented by the editors as "the first in what we hope will be a number of studies which, in different ways, and from a variety of perspectives, will pay generous heed to the questions which *Fides et ratio* has raised" (xii).

The Latin text provided is the same (save one or two misprints) as the official text published in the *Acta apostolicae sedis;* but the English translation, made by Anthony Meredith and Hemming (with, the acknowledgments suggest, some help from others), differs in many minor and some major ways from the official version, released in 1998 and now available in many printed forms and at the Vatican website (www.vatican.va). The editors write that they do not intend this new English version to supplant the official translation (v); but they provide explanation neither of just why they thought a new English version necessary or useful, nor of the principles by which it was made. Discussion of these matters would have been useful and interesting. It is, after all, far from usual to offer new and competing translations of curial documents, and the fact that Hemming and Parsons chose to do so must mean that they were dissatisfied with the one already on offer. They do not here tell us why, though Hemming is on record (in *New Blackfriars*) as being dissatisfied with the official translation, and he is not alone in that.

Most of the differences between the two translations are stylistic, and in general this new translation is less wooden and more like English than the official one. It is also more gender-neutral, though not consistently so (in this matter, as in some others, it reads like the work of a committee in need of a final going-over from a single hand). But there are also places where the differences between the two translations are substantive. I have not made a systematic and complete comparison of the two versions with the Latin, but I have taken a few soundings by looking at interesting passages where the official version had seemed to me wanting. The new translation usually does better than the old. For example, in an interesting passage in the third paragraph of §13, on the signs given by revelation to aid the understanding, the old translation introduces talk of the mind's autonomy which is quite absent from the Latin, and garbles a number of distinctions that are present in the Latin. The new translation gets this right. There are similar advantages in the new translation's rendering of passages in §67 and §80. But in §23, the new translation introduces a mistake not present in the old by seeming to say that our ordinary, limited modes of thought cannot express themselves, when in fact what they cannot express is *revelatae sapientiae altitudo* (the trouble is either a typographical error in the English or a misreading of pronoun reference in the Latin).

In general, the new translation is better than the old, and its very existence usefully presses the question of how approved vernacular versions of curial texts are made, for it makes it easy to see that the official English version is sometimes

sufficiently far from the Latin to suggest that perhaps it was not made from the Latin at all, or at least not from the Latin that constitutes the official text. This thought gains substance when, as an hour or two's work comparing the official English version with the official German and French (with these we reach the limit of this reviewer's linguistic capabilities) versions (something the Vatican's website makes easy) will show, it is sometimes the case that all three (or two of the three) are closer to one another than to the Latin. There is a complicated story here, no doubt, whose details it would be interesting to know, as would be the linguistic details of the composition of this and other encyclicals. Hemming and Parsons deserve our thanks for making one part of the difficulty easier to see. But the very existence of their version also raises questions about textual authority: their volume carries no *imprimatur* or *nihil obstat,* and their version therefore has no magisterial weight. Nevertheless, its existence surely (and perhaps interestingly) reduces the magisterial significance of the official version simply by introducing a competitor.

McEvoy's commentary is a sympathetic analysis, meant not to engage the encyclical critically or to develop its lines of thought, but rather to clarify its structure, assumptions, and sources. It does all this well (though without startling insight), and is especially good on the significance of the exemplary figures discussed in the encyclical. I was taken aback, though, by the claim that among the encyclical's nineteenth- and twentieth-century exemplars, "John Henry Newman is the first . . . not unsurprisingly" (194). Is McEvoy really surprised? This is probably a typographical error, but it might also, I suppose, be a coded message.

Hankey's essay, "Practical Considerations about Teaching Philosophy and Theology Now" (199-205), is an allusive diatribe occasioned by *Fides et ratio*'s emphasis upon the need for proper philosophical education for priests (and others). Hankey does not like dogmatic neo-Scholasticism; he likes even less "theology as post-modern mythopoiesis" (205)—by this he may mean Radical Orthodoxy; and he would like the skills of reading to be better taught and more widely known. He mentions, but neither argues for nor fully explains, a view of the relation between philosophy and theology that may be like that of *Fides et ratio.* But it is hard to tell.

Herms's essay, "Objective Truth: Relations between Truth and Revelation in the Encyclical *Fides et ratio*" (206-24), provides exactly what its title suggests: a careful textual analysis of the (various) ways in which *veritas* is presented and theorized in *Fides et ratio,* with special attention to the relations between these usages and the encyclical's understanding of revelation. Herms's reading is fundamentally sympathetic: he suggests, rightly, that more is needed than *Fides et ratio* provides by way of an epistemology that explains our natural ability to know the truth—indeed, our *flagrans desiderium* (§24) for it. The encyclical is suggestive but not systematic here, and Herms points the way toward what would have to be done in order to become systematic.

Lash's essay, "Visio Unica et Ordinata Scientiae" (225-36), while fundamentally supportive of the encyclical's plea for a counter to the increasing

fragmentation of knowledge evident in university settings and public culture, protests two points: first, the encyclical's tendency to hypostatize 'philosophy' as though its identity had been stable through history; and second, the encyclical's insufficient awareness of the depth of the fragmentation of which it speaks, and the sheer unlikeliness that it can be remedied in the university. Lash identifies the distinction between faith and reason that informs the encyclical as excessively dependent upon an "endlessly misleading early modern distinction between faith and reason" (231). There is certainly something in this, but Lash is himself insufficiently historical. An Augustinian distinction between what it is to believe (*credere*) a truth and what it is to know (*cognoscere*, etc.) one is certainly not identical with (say) Locke's distinction between faith and knowledge, but neither is it quite dissimilar. About the second criticism Lash is abundantly and importantly right: the hope *Fides et ratio* expresses for unification of knowledge is best understood as eschatological.

Papanikolaou's essay, "Reasonable Faith and a Trinitarian Logic: Faith and Reason in Orthodox Theology" (237-55), has more to say about Orthodox theology than about *Fides et ratio*. Its central criticism of the latter is that the encyclical requires assent to a particular philosophy of being as a necessary condition for assent to the doctrine of the Trinity. This is not, I think, a correct reading of the encyclical. It would be better to say that what *Fides et ratio* requires is some philosophy of universal scope rather than any particular instance of such; and that the relation of philosophy to theology in the encyclical is not one of simple priority but rather one of symbiosis. But there is no doubt that Papanikolaou's criticism does apply to some among the varieties of neo-Scholasticism, and that there are deep problems with the position he criticizes even if the encyclical does not hold it.

Scola's essay, "The Integrity of Human Experience: Cultural Dimensions and Implications of the Encyclical *Fides et ratio*" (256-76), begins from §§63-71 of the encyclical, where the relation between culture and cultures is discussed. Scola's is an extraordinarily wide-ranging essay, dense with literary, historical, and artistic allusion. It uses *Fides et ratio* as a springboard for discussion of analogy, nature, the contemporary civic and political sphere, and so on, and for the most part does not closely engage the text of the encyclical. It is not susceptible to easy summary.

Sokolowski's essay, "The Autonomy of Philosophy in *Fides et ratio*" (277-91), written with his customary pellucid elegance, explores the complex view of the relation between faith and philosophy (which latter he understands as a particular form of reason) found in the encyclical. What Sokolowski does in this essay is essentially to apply his own understanding of this matter, worked out at length in, inter alia, *The God of Faith and Reason* (1995), to the encyclical as an exegetical device. This works well if one is persuaded (as I am) of the essential rightness of Sokolowski's view, but it must be admitted that the encyclical can be read in other ways, and that the density and ambiguity of some of its formulations stands in contrast to the sharp, cool elegance of Sokolowski's prose.

Soskice's essay, "*Fides et ratio*: The Postmodern Pope" (292-96), provides a brief and jaunty summary of the encyclical's main goals, with special interest in its analysis of our cultural malaise, mixed in equal parts of nihilism and despair, and in its recommendation to return philosophy to its large-scale interests in fundamental and final questions.

A task for the future, one I have yet to see taken up with the energy it deserves in the now extensive literature on the encyclical, and certainly absent from this volume, is discussion of why none of the encyclical's exemplars of philosophy done well are taken from what is sometimes (misleadingly) called the Anglo-American analytical tradition. There is a tendency among Catholic philosophers to think that the only Egyptians who need to be despoiled are the phenomenological (Husserl, Scheler, Heidegger, and after) and hermeutical (Levinas, Ricoeur) ones; and that those best equipped to do the despoiling will always be Thomists of one stripe or another. The pope's own philosophical work shows that a rich harvest can be reaped in this way. But I suspect that there is more to be said about what the *ratio* evident in the work of philosophers (some Catholic and some very much not) such as Elizabeth Anscombe, Peter Geach, Michael Dummett, Philippa Foot, Alvin Plantinga, and Peter van Inwagen might have to offer to the tasks limned by *Fides et ratio*. It may be that the editors of this volume, being as I think English, are in a good position to take up that task in future volumes in this series.

This is, then, a mixed bag, as are all such collections. Some of the individual contributions provide deep and useful insight into the encyclical and the issues it propounds. Yet the volume's truly distinctive (if somewhat puzzling) contribution is the new translation it provides.

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God, Evil, and Innocent Suffering: A Theological Reflection. By JOHN E. THIEL. New York: Crossroad Publishing Company, 2002. Pp. 192. $24.95 (paper). ISBN 0-8245-1928-0.

The modern project known as "theodicy" has been with us a long time—at least since Leibniz's book of that title published in 1710. The theological appeal of this project is undeniable. No religious person wants to believe that his or her God is a monster who sends planes crashing into buildings or wills a child's death by cancer. On the other hand, theodicy's critics—and they have been many—have wondered if the price to be paid is too great. Is not the God of theodicy a rationalized deity, constructed according to human needs and purposes? Don't pious attempts to make sense of evil tend toward rendering it

tolerable? It is understandable if some prefer to endure the mystery of evil in faith, rather than offering blasphemous explanations for its existence.

John Thiel's *God, Evil, and Innocent Suffering* is one long, determined effort to resist the temptations of theodicy. Thiel seeks to offer a theological account of evil and suffering that "move[s] within the language of scripture and tradition," its rationality governed by "the most basic Christian claims of faith" (3). At the same time, Thiel is not entirely happy with the ways in which the classical tradition has approached these issues. His book seeks to chart an alternative course within the tradition that can better address the mystery of evil.

The key term of his inquiry is found in the book's title: *innocent* suffering. Thiel argues that for much of the tradition, there is really no such thing as innocent suffering. Augustine believed that most human suffering could be accounted for on the basis of the Fall. This theological answer reflects a deep religious urge to see God as just and loving. If innocent suffering exists, then God is indeed a monster; so if God has the character we attribute to him, then suffering cannot be innocent. As Thiel rightly says, "the denial of innocent suffering lets the Christian God be the Christian God" (12). But this orthodox explanation does not sit well with our experience. We *know* there is innocent suffering in the world. From the Book of Job to Eli Wiesel's *The Trial of God,* the protest rises that some suffer all out of proportion to their supposed guilt. The usual example brought forward in modernity is the suffering of children—those we tellingly refer to as "innocents."

Yet it is not only the Augustinian tradition that has problems acknowledging innocent suffering. Thiel argues that modern theologians who construe suffering as educative, such as John Hick or Richard Swinburne, likewise evade the issue. While Hick certainly does not think people deserve to suffer, he does see them as responsible for "transforming" suffering into meaning. Here is the familiar free-will defense: a world of suffering is better than a world without, because it is better to be free than to be determined. Thiel correctly sees a problem here. Doesn't Hick's view reduce horrendous evil to an opportunity for personal growth? A different version of this problem is found in process theology, whose finite God is capable of turning the caprices of nature and history into a joyous future. Here, too, scandal dissolves within a scheme of evolutionary progress.

If both modern and premodern approaches to suffering fail, what is the alternative? Thiel's own constructive proposal seeks to hold together three assumptions: (1) traditional Christian beliefs in God's absolute goodness, omnipotence, and omnipresence are to be affirmed; (2) innocent suffering is real, and must not be softened in an attempt to render it "meaningful"; and (3) God neither permits nor wills evil in any form. This third point is crucial. More specifically, Thiel's account seeks to "reject the view that God is the cause of suffering either by permitting the evil victimization of some by others, or by willing suffering through natural means, including the limitations of the human condition such as disease, old age, and death. Indeed, I shall argue that God neither permits, nor wills, nor causes any kind of suffering and death" (59).

Against what he sees as the tradition's tendency to make God an agent of death, Thiel simply denies that this is so. Key texts within the canon portray God

as the author of life, and therefore as the enemy and overcomer of death ("he will swallow up death forever" [Isa 25:7]; "Death will be no more" [Rev 21:4]). A consistent understanding God as life-giver means that there is no "place" for suffering, even in the sense of God's permissive will. Death and suffering are simply what God resists with every power at his disposal. Thiel bolsters his case by highlighting the biblical theme of promise and by appealing to the *Christus victor* motif in the Fathers. Far more so than Anselm, the "dramatic" theory of atonement allows us to see God's relation to death as one of sheer opposition.

Thiel's penultimate chapter seeks to find a way of affirming the force of the doctrine of original sin—humanity's radical need for grace—while denying one of its corollaries: death as divine retribution. With God removed as agent of suffering and death, we are left with the suffering that innocents experience at the hands of others and from what Thiel calls "precedent evil" (his term for "natural" evil). God does not cause, but is *present to* our suffering. The final chapter attempts to rethink Christology and discipleship in light of innocent suffering. Like many contemporary theologians, Thiel places the resurrection rather than the cross at the center of God's purposes. Christ's suffering and death are not the means by which God saves the world, but show us "God's solidarity with humanity in the midst of its own innocent suffering. Jesus' suffering reveals God's judgment on death's dehumanizing power" (163).

My major worry about the book is whether the central notion of innocent suffering is made to do far too much work. On the one hand, Thiel is surely right to criticize the traditional equation between suffering and divine retribution. The Bible itself questions this view, most decisively in the teaching of Jesus himself (e.g., the tower of Siloam, the man born blind). On the other hand, Thiel's desire to distance God as much as possible from suffering and death may lead to a rather tepid doctrine of creation. God may not have created the creature's bondage to decay, but God did make creatures who were vulnerable to decay, and who therefore suffer. Death is not "natural," but finitude is—and it is difficult to imagine creatures who do not die, in at least a physical sense. God's relation to suffering and death is extraordinarily complex. I worry that Thiel's account may, despite his best intentions, result in a dualism in which God's moral purity is preserved at the cost of his concrete involvement in the world. What is needed here is a nuanced account of the relation between creation and redemption. Such an account is made difficult when a single notion ("innocent suffering") is made to bear too much weight.

Despite these problems, the book is a creative and challenging exercise in Christian theology. Thiel's intellectual clarity does not come at the expense of moral passion. He invites us to ponder how to respond faithfully to the mystery of suffering in a world created by the God of life.

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Revelation and the Church: Vatican II in the Twenty-First Century. Edited by RAYMOND A. LUCKER and WILLIAM C. MCDONOUGH. Maryknoll, N.Y.: Orbis, 2003. Pp. 283. $24.00 (paper). ISBN 1570754799.

The reception of any general council is always a slow and arduous process. Competing theological schools inevitably arise to claim fidelity to the true spirit of the previous synod. The Second Vatican Council (1962-65) has predictably engendered debate on some issues that were already neuralgic during its four sessions (e.g., the relationship between papal primacy and episcopal collegiality), and on other issues that would only surface in later years (e.g., the challenges to marriage and procreative sexuality). A group of Catholic scholars has compiled a collection of essays that seeks to move beyond the polarizations that have resulted from disagreement over the nature, structures, and competencies of Church authorities to engage those hotbed topics that continue to be ecclesially divisive. Yet the present volume clearly takes its stand within a school that seeks to correct, or at least query, current magisterial interpretations on the basis of principles allegedly embedded in Vatican II's documents.

The career of Raymond A. Lucker, the late bishop of New Ulm, Minnesota, who died of cancer in 2001, serves as the inspiration behind this collection. Throughout his episcopacy, and briefly into his retirement, Bishop Lucker sought to fulfill the council's mandate to bring core Catholic teachings to bear on contemporary realities, and in a manner persuasive to modern-day believers. In recognition of his efforts to bridge scientific theology and pastoral practice, the Catholic Theological Society of America honored him in 2000 with a lifetime achievement award. Well into the final weeks of his battle with cancer, the bishop took notes from his hospital bed on articles that addressed his favorite theme of "change" and organic development in the life and teachings of the Church.

The authors of this volume take up a number of Raymond Lucker's key theological interests, and reflect on them in the light of the bishop's published writings and private notes. Under the rubric of "revelation," the evolutionary character of Catholic doctrine is discussed with a view to showing that no pope or council ever achieves a final interpretation of an article of faith. In the other three sections the essays treat a wide variety of themes having to do with episcopal leadership, liturgy, life issues, and just war. Consistently, the authors seek to widen the possibilities of acceptable positions against a perceived narrowing of options by the Vatican over the last quarter century.

Among the many topics discussed, four may be highlighted as having exacerbated tensions between the majority of the theological establishment and the magisterium, but also between certain elements within the hierarchy itself. Regardless of who Pope John Paul II's successor may be, the next papacy will still be occupied with the issues of (1) the proper function of the Church's teaching organs, (2) levels of authority in what the Church teaches, and (3) the relationship between universal structures and local structures in carrying out the Church's mission of evangelization.

In matters such as the ordination of women and the Church's opposition to same-sex unions, none of the authors—as far as I can tell—directly endorse positions opposed by the magisterium. Their criticism rather takes aim at the processes by which the magisterium arrives at its determinations. Bishops Lucker, in the essay that opens the volume, calls for a "free and open discussion" by *all* bishops, theologians, and other lay faithful before Rome insists on submission to its teaching on women and the priesthood. The implication to be drawn from his statement is that the pope somehow failed to consult the broader church when he issued the 1994 declaration *Ordinatio sacerdotalis,* which called for a "firm assent" to the teaching that only men can be ordained. Along with Susan Wood, Bishop Lucker finds the authoritative weight given to this teaching by the Vatican rather dubious. Cardinal Ratzinger's 1995 "Response" to a query from an episcopal conference states that the declaration merely confirms a nonreformable teaching of the *ordinary* magisterium, which is to say, a definitive exercise of the entire episcopate scattered throughout the world but teaching in concert. The clarification of the Congregation for the Doctrine of the Faith, however, did little to dispel confusion for Bishop Lucker. He finds it questionable that the magisterium could teach definitively outside of an ecumenical council or an *ex cathedra* statement by a pope on a matter that does not touch on the core of revelation. Within Bishop Lucker's categories, a definitive teaching on matters that pertain to safeguarding the integrity of the deposit of faith—what is traditionally referred to as "secondary object"—would seemingly have to be generated by the *extraordinary* magisterium. In other words, the issue of women's ordination ought to have been left for an ecumenical council, in which bishops meet on a even playing field to adjudicate matters of great import for the entire ecclesial body.

The problem in applying Bishop Lucker's categories to the teaching on women and the priesthood—as well as other rulings of the Holy See on such matters as artificial birth control and the status of Anglican orders—lies with the categories themselves. Since Vatican II there has been an expansion of the purview of the ordinary magisterium in regard to definitive, nonreformable teaching—partly due, I would suggest, to the need for the hierarchy to respond quickly to pressing moral developments in both the scientific and political arenas. Bishop Lucker wants an extended debate on matters that have polarized portions of the faithful in the Western countries, while leaving definitive pronouncements to rare exercises of conciliar or papal infallibility. But such self-imposed constraints could end up paralyzing the Church at precisely those moments when her voice is needed to defend human dignity and human life against the assaults of technology and certain deleterious trends in the culture.

As a shepherd who fostered many kinds of dialogue within his local church, Bishop Lucker places great confidence in the capacity of the laity to recognize Catholic truth. He is right to argue on the basis of Vatican II that the lay faithful must be "consulted" in the development of teaching on faith and morals, and that all definitively taught doctrine must undergo a "reception" "by the whole body of the faithful" (*Lumen gentium* 12). Unless the teachings on marriage and

family life are recognized as in accord with the faith by a preponderance of devout Catholics, they will eventually be dismissed as mere hollow utterances. But Cardinal Newman, in his defense of the need to consult the laity, carefully distinguishes between "seeking their opinion"—as if the whole body had specialized knowledge—and determining their deeper resonance, often expressed devotionally, with what is being proposed *de fide*. In acknowledging the laity's prophetic charism of truth, the contributors to this volume tend to underplay the prophetic aspect of the bishop's ministry, which can be beneficially collaborative and dialogical, but may at times also require taking a firm stand against the flow of public opinion into which the more vocal portions of the laity are sometimes swept.

In reading through the essays one also hesitates to go along with the way in which certain concepts are employed philosophically. "We are always advancing toward the full truth," Bishop Lucker asserts. "We do not yet have the fullness of truth. No one does." Statements to this effect draw support from those biblical exegetes and historians who apply critical methods to show up the time-conditioned character of past and present formulations of faith. Within the dominant framework of this volume, truth becomes the hard-fought attainment of the present generation that has the courage to pursue critical research and dialogue to their limits. Only through communal discernment can the problems of local adaptation of the liturgy, the moral limits of war, and the demands for more participatory structures of church government be resolved. Our history has taught us that the Church changes in her life and self-understanding, and to remain a dynamic presence in the lives of today's Catholics it will have to become more conscious of the hard lessons learned in regard to flexibility, adaptability, and diversity.

While these values do indeed correspond to an authentic aspect of the Church's mission, they can perhaps too easily tend to underwrite an inadequate concept of truth that ultimately undermines credibility. If our understanding of truth is to be fully Catholic, it cannot fail to do justice to our past inheritance that makes possible any real advance in doctrinal or moral understanding. Catholic engagement in either its own inner-ecclesial arena or the public square begins with the premise that certain infallible truths make discussion possible. We do not create them, for they precede us. Any discussion of the terrorist attacks of September 11th, for instance, that does not presuppose the principle that innocent human life can never be directly targeted for destruction is not worthy of the Catholic's engagement. And while we may never exhaust nor perfectly express the meanings of these non-negotiable truths, they come to us adequately formulated by the authentic tradition whose guardians continue to be the Church's pastors.

A major difficulty with several of the essays in this volume is that their understanding of catholicity seems somewhat truncated. The ongoing postconciliar debate over the legitimate autonomy of local churches, and their corresponding episcopal conferences, reflects a larger problem of how we conceive the catholicity of local communities. Squabbles over Rome's right to

certify and withhold approval of liturgical texts and other pastoral initiatives of the local hierarchy will continue to be a source of irritation until local bodies—from the parochial to the national level—cultivate a proper sense of communion that acknowledges that the Eucharist demands of every community that celebrates it ("in union with John Paul our Pope . . .") a desire for direction and confirmation from the organs of the universal Church.

William C. McDonough, in honor of his late friend and esteemed bishop, has put together a series of essays that seek to advance contemporary discussion on issues that divide Catholics. Some attempt faithfully to sum up official Church teaching, and then respectfully invite reflection on the means by which it is generated and disseminated. Others seem to read into papal and other magisterial texts positions that are difficulty to justify—as when William McDonough and Catherine Michaud assert that John Paul II's Jubilee "apologies" constituted an actual "development of doctrine." Terence Nichols's piece on evolutionary science and faith stands out as an example of Catholicism's proper engagement with culture.

Raymond A. Lucker chose for his episcopal motto the words of the distraught father whose sick son Jesus' disciples were unable to cure: "Lord, I do believe. Help my lack of faith" (Mark 9:24). Bishop Lucker and his academic colleagues who have honored him with this volume show themselves to be men and women deeply committed to passing on the faith in these troubled times for the Catholic Church. Would that their efforts, however, had widened the conversation to include other voices more resonant with the less trendy convictions of John Paul II and his coworkers at the Vatican. Then we might have had a conversation even more "catholic."

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Meister Eckhart: Analogy, Univocity and Unity. By BURKHARD MOJSISCH. Translated by ORRIN F. SUMMERELL. Philadelphia: B. R. Grüner Publishing Co., 2001. Pp. 215. $95.00 (cloth). ISBN 90-6032-465-X.

One of the main currents in German scholarship on Eckhart over the past few decades has been to show how deeply Eckhart's thought was rooted in the life-world of medieval religious praxis and the thought-world of high Scholasticism. Mojsisch's book is among the best-researched and best-argued products of this trend that, far from depreciating the originality of Eckhart, has only made more striking Eckhart's originality and profundity by laying bare his debt to Scholastic thought. It is therefore good to see this work available in

English translation, since perhaps it will, from now on, receive more attention from English-speaking scholars who can only benefit from its often dense, but always illuminating, analyses.

Mojsisch remarks near the outset that, for Eckhart, as for all Scholastic theologians, faith and Scripture form the basis of all genuine thinking. For Eckhart, human reasoning attains to truth not by its own power but only insofar as it is applied to unlocking the inner meaning of Scripture. By the same token, the inner meaning of Scripture becomes intelligible only insofar as it is framed in terms of *rationes naturales* or "natural reasonings" that express the parabolic content of Scripture in rational, conceptual form. As Mojsisch puts it, "Eckhart's methodological demand consists in showing how the godly (divina) and the human (humana) realms—the realm of the divine and that of the naturalia (res naturales), artificialia and moralia—reciprocally illuminate one another" (8). Eckhart, moreover—and this is the thesis of Mojsisch's book—articulates this mutual illumination in terms of the Scholastic language of analogy, univocity, and unity. Analogy articulates the relation of *res naturales* (and of the soul qua *res naturalis*) to God; univocity articulates the relations immanent without the Godhead (such as the Trinity and other divine mysteries). Both relations, however, are grounded in the divine unity where, qua intellect, the soul is reborn from analogically differentiated creature to univocally related son of God.

The strong influences of Thomas Aquinas, Albert the Great, and the German Dominican School of Scholastic theology are evident on Eckhart's thinking, as Mojsisch immediately makes clear. Particularly noteworthy is the concept of the *causa essentialis* developed by Theodoric of Freiburg, an older contemporary of Eckhart. In Proclean fashion, Theodoric argues that there is a hierarchy of essential causality in which each essential effect is contained immanently in the essential cause above it. To the extent that an effect is independent from its cause, it is related to its cause analogically; but to the extent that it is still in its cause, it is related to it univocally. Eckhart's insight was to apply this notion of *causa essentialis* to the nature of the intellect, which both essentially is and is not what it knows. Eckhart develops this insight in the first two *Parisian Questions*, which Mojsisch explains in this way:

> Beings are not beings in their cause, since the cause, insofar as it is in itself, is thought as a causa univoca, which does not *effect* something in the manner of a causa analoga, but instead *founds* it in the manner of a principium (causa essentialis primo-prima as principium). . . . As a causa univoca, God is not a being, since as such a cause he is reason and not the cause of beings. Solely as a causa analoga does God make it possible for being to be beings at all. (40)

As such, the intellect qua intellect, insofar as it is the principle or *causa essentialis* of all existents, cannot be an existent itself. Thus, insofar as something is its

intelligible essence, it is in its cause univocally speaking; but as existent, it is outside of its cause and thus can only be spoken of analogically with its cause.

In his analysis of Eckhart's theory of analogy, Mojsisch concentrates on the prologues to the *Opus tripartitum*—particularly on the thesis "Esse est deus." By the thesis "Esse est deus" Eckhart means that all transcendental perfections belong to God alone. Creatures themselves, insofar as they are limited and conditioned, cannot be the source of these perfections; they must derive them directly from God. Insofar as it is "this or that" existent, the creature has nothing of existence, oneness, truth, or goodness in itself. These perfections can be predicated of it only in the same way that "health" can be predicated of food or urine: not formally but by imputation. "As Eckhart himself remarks, his doctrine of analogy serves the sole purpose of underscoring the weakness of the creature over against the sublimity of God, the sole purpose of demarcating the nullity of the creature in itself" (59). Thus, the creature always "hungers and thirsts" after God precisely because it lacks within itself any of the transcendental perfections: in an argument very reminiscent of Plato's *Symposium,* Eckhart asserts that the creature's very analogically delimited "being" is the desire and not the possession of the fullness of existence.

But this is not the whole story: the creature qua human soul is capable of a univocal relation with God not despite but precisely because of the "nullity" of the creature in itself. The two paradigms that Eckhart uses to explain this relation between the soul and God are those of justice and the just man, on the one hand, and archetype and image, on the other. The just man, insofar as he is just, is related to justice in itself (i.e., God) not analogically but univocally. Empty of himself, the just man does not appropriate the divine in-working in a limited analogically way but in a fully univocal way in which God's working is his working precisely because he accepts all things equally without appropriating them to his own measure. The same with the image and its archetype: the image insofar as it is image derives all of its being and acting from its archetype; it thus does not appropriate the archetype analogically but univocally—all the while remaining utterly distinct from its archetype since it is nothing in itself as image. These two paradigms are paradigms for Eckhart of the soul's relation to God insofar as the soul is just and lives out of God's image within it.

The moments of analogy and univocity, however, are united for Eckhart in transcendent unity, which Eckhart defines as "indistinct" ("Unum est indistinctum"). Oneness, as a transcendental perfection, stands in immediate relation to *ens* or *esse* precisely because it adds nothing to being—it introduces no distinction or division into being and "for this reason it is able to display the gist, the purity or the apex of being, the divine essence as the ground of being" (98). As "indistinctum," the divine unity is indistinct from all existents; but at the same time, this indistinction makes the divine unity utterly distinct from all creatures. As such, it is opposed to all analogized being, representing the pure "isticheit" or "is-ness" out of which all creatures have their "borrowed" existence. And this purity of existence in which there is no division resulting from analogically differentiated creaturely existence is nothing other than the purity of the

intellect: pure unity and pure intellect are interchangeable because both find their utter distinction from all things in their utter indistinction from all things. As Eckhart notes: "Deus enim unus est intellectus, et intellectus est deus unus."

It is thus in the final chapter, "The Theory of the Soul," that we find the real payoff of Mojsisch's analysis. The doctrines of analogy, univocity, and unity really describe and are rooted in moments in the inner life of the soul and its union with God. It is thus no accident that Eckhart takes as his leitmotif the Augustinian injunction: "Noli foras ire, in te ipsum redi. In interiore homine habitat veritas. Et si tuam naturam mutabilem inveneris, transcende et te ipsum" (131). Thus, insofar as the soul has "let go" of all creatures, it moves from subsisting in its analogically differentiated being to being univocally related to God, "adding nothing" to God by being without any attachment to creatures or creaturely ideas (149). What Eckhart calls the "spark" of the soul is precisely this possibility to be conformed to God not analogically but in a unity that gives birth to a univocal relation between the soul and God. In particular, and in marked contrast to Albert and the entire German Dominican School, Eckhart sees the possible intellect (as opposed to the agent intellect) as the basis of the divine image within the soul precisely because the possible intellect is both all things and none of them: it does not receive the divine being in an analogically differentiated way but is able, due to its own inherent "nothingness," to be conformed univocally to the divine in-working.

That is why, for Eckhart, John was closer to the truth than Paul when he said that we were no longer "servants" but "friends" of God: "As servant (according to Paul), the spark of the soul, or the ground of the soul, is subject to the relation of analogue dependence; as friend (according to John), it is characterized by univocal correlationality, and is to this extent beyond the created being of the soul, being uncreated and uncreatable" (155). As Mojsisch further explains, "This innermost of the soul is univocally related to transcendental being" (158). This transition from analogically differentiated to univocally related being is made not through theory but through spiritual praxis—the praxis of detachment and letting go whereby there is actually "nothing" in the innermost ground of the soul to be analogically differentiated: "He is supposed to have nothing, not to be a place in which God can act analogically, but instead to let God act in himself and to be God's acting in himself" (160-61). The entire thinking of Eckhart could, then, be summed up by his short aphorism: "Aliquid est in anima, quod est increatum et increabile; si tota anima esset talis, esset increata et increabilis, et hoc est intellectus" (169). Qua creatures, human beings are analogically related to the pure being of God; but qua intellectual, we can come to share univocally in the life of the divine unity.

I have only three relatively minor criticisms to make of the book. The first has to do with the introductory pages: Mojsisch does not make clear his thesis until after several pages of what are, in my view, superfluous, disorienting, and highly abstract general theoretical considerations. He could have dispensed with the first six pages without any loss to his argument. My second comment has to do with the translation itself. Orrin Sommerell is to be commended for tackling

such a difficult text and producing a good workable translation out of difficult, academic German. Nevertheless, too often the translation reads not like natural, if academic, English prose but precisely like a translation from academic German in which the sentences are overly long and the subordinate clauses tangle and pile up. Finally, while the editors are to be commended for retaining all citations from Eckhart in the original Latin or Middle High German, they leave these in the text and relegate the English translations to an appendix. This arrangement, to be sure, presents no difficulty to the Eckhart scholar; but in view of a more general readership, which this book merits, it would have made more sense to reverse this arrangement.

But these criticisms are, as I have said, minor. This work is essential to any understanding of Eckhart and should be in the library of any institution where Eckhart's works are taught and studied.

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Mystical Consciousness: Western Perspectives and Dialogue with Japanese Thinkers. By LOUIS ROY, O.P. Albany, N.Y.: State University of New York Press, 2003. Pp. xxi + 229. $62.50 (cloth), $21.95 (paper). ISBN 0-7914-5643-9 (cloth), 0-7914-5644-7 (paper).

In order to avoid expecting more from this book than the author intends, one must note carefully some key distinctions he makes in his preface and introduction. For one thing, although the Japanese Zen thinkers Daisetz Teitaro Suzuki, Nishitani Keiji, and Hisamatsu Shin'ichi are treated in the last three of the book's ten chapters, Roy deals almost exclusively with Western thinkers in the first seven chapters, in accordance with his stated aim of furthering a *Western* philosophy of religion (xi). The dialogue with Japanese thinkers announced in the subtitle is therefore not extensive or pervasive. Moreover, Roy expressly limits his understanding of mystical consciousness to states marked by low levels of physiological and cognitive activity and therefore does not deal with any mystical phenomena that could be described as "consciousness-of"; he thus excludes not only somewhat uncommon phenomena like visions and auditions but also thoughts and feelings that could be a normal part of someone's relationship with God. This restriction, he claims, allows him to deal only with that sort of mystical consciousness that can quite easily be brought into dialogue with Zen (xx).

That last-named exclusion means that Roy will focus on only the last two of the following three kinds of consciousness to which he alludes at numerous places in his book. "Consciousness-of" he terms "consciousness C," the consciousness we have of things and people in our ordinary activities. It is, by definition, an awareness of objects. Likewise part of our ordinary consciousness is what Roy calls "consciousness B," a prereflective, unobjectified kind of knowing that permeates all of our ordinary states and activities. One simply knows *that* something is happening without knowing any specific object. "Consciousness A," by which Roy means mystical consciousness (in the restricted sense of mysticism indicated above), is likewise "consciousness-in," but unlike consciousness B it obtains in objectless states, states beyond any distinction between subject and object, the kind of state regularly called "emptiness" in Mahayana Buddhist thought. Roy deals primarily with these two forms of consciousness-in (especially consciousness A) and states that one of his main objectives is to show that it is not only Eastern thinkers who have recognized and written about them. As he says in the final paragraph of the book, "I hope I have demonstrated that, contrary to what is commonly believed, numerous thinkers in the West have delved into the riches of those human discoveries" (191).

Roy's attempted demonstration begins with a survey of Western philosophies of consciousness (part 1 of the book, consisting of three chapters), proceeds through a fairly detailed consideration of three "classic" Western thinkers (part 2, with chapters on Plotinus, Eckhart, and Schleiermacher), and concludes in part 3 with "a dialogue with Zen philosophy," consisting of paired chapters on Western and Japanese views of the self (chapters 7 and 8) and a second paired set on Western and Japanese views of nothingness.

In his opening two chapters Roy treats Western philosophical accounts of ordinary consciousness, relying primarily on the works of Brentano, Husserl, Sartre, and Lonergan but supplementing these with references to more recent and lesser-known scholars like John Crosby and Elizabeth Morelli. One of the most important parts of these chapters is Roy's treatment of Sartre. Following Husserl, the French philosopher insists in *Being and Nothingness* that all consciousness is consciousness *of* something; there is, he claims, no consciousness that is not a positing of an object that transcends purely immanent mental operations. Despite this insistence, Sartre does recognize the existence of what Roy calls consciousness-in as the condition of consciousness-of, as when Sartre writes in *The Transcendence of the Ego* of a "non-positional consciousness" that does not posit itself as its own object, or when in *Being and Nothingness* he affirms that the consciousness we have of ourselves is not some addition to the consciousness that we simply are: "This consciousness, as we know, can be only non-positional; it is we-as-consciousness since it is not distinct from our being."

Roy concludes his first two chapters by noting that consciousness-in usually accompanies intentionality, that is, consciousness of objects in our normal daily experience. He claims that there is, however, an exception to this, a kind of consciousness-in where intentionality is *not* operative. This is mystical

consciousness, in the restricted sense noted at the beginning of this review. That there is such consciousness has been affirmed by a number of thinkers to whom Roy alludes, including Robert Forman, Sebastian Moore, James Price, David Granfield, and—above all—Bernard Lonergan. What Roy finds especially pronounced and crucial in Lonergan is his insistence that there is a kind of immediacy that derives not from the data of sense but from the data of consciousness. This is a "mediated immediacy"—mediated inasmuch as it is necessarily shaped by language, but immediate in that it is given to us directly in the awareness we have of our own acts and states. When instantiated in any kind of union that takes place between humans, it is necessarily embodied in sensory perception and movement, whereas mystical union transcends such limits by heading toward what is infinite in meaning and value. All values trigger affective responses, including relatively permanent feelings of which the most basic is that of being in love. When such being-in-love constitutes the sort of religious disposition that is unconditional and unrestricted, we have what Lonergan calls "being in love with God." This point is absolutely pivotal for the rest of Roy's book, for the "more" of mystical experience is precisely "the element of infinite lovingness" (50). At crucial junctures in his book, Roy regularly notes the affective nature of mysticism in the restricted sense in which he uses the term. While refusing to affirm that love is "the kernel of mysticism" (the Japanese writers with whom Roy is in dialogue usually refrain from talking about love since it is generally viewed as the locus of desire and the pursuit of self-centered gratification), Roy nevertheless does make a claim which I take to be the most central in his entire book, namely, that all the thinkers he has discussed "would undoubtedly concur that mystical consciousness is the most important ingredient of a personal transformation which roots out obstacles to genuine loving" (189).

Perhaps the best way of indicating the significance of the treatment of Plotinus, Eckhart, and Schleiermacher in the three chapters of part 2 is to say that Roy uses their writings to show what he means by claiming that mystical consciousness, unlike consciousness B, is *not* "part and parcel of intentionality" (32). After all, could one not argue that God is the mystic's intended object, the object of a Lonerganian "being in love in an unrestricted fashion"? No, Roy would reply, precisely because the mystic does not meet God as an object over against himself or herself. For Plotinus, the soul partakes of the Intellect (*nous*) even as the Intellect partakes of the One or the Good (which Plotinus sometimes calls God or the Father), and in such participation the soul is entirely void of any act of understanding. In Plotinus's words, the soul "puts away all the shape which it has, even whatever shape of the intelligible there may be in it" (*Enneads* 6.7.34); it is "without form" and "ignoring all things" (6.9.7). Union with the One is not identity, but it is *felt* as identity: "The seer does not see and does not distinguish and does not imagine two, but it is as if he had become someone else and he is not himself, . . . having joined, as it were, centre to centre" (6.9.10).

This same kind of experienced transcending of dualism is also found in Eckhart. Roy quotes what is perhaps Eckhart's best-known German sermon as

a particularly forceful expression of this transcendence: "While I yet stood in my first cause, I had no God and was my own cause: then I wanted nothing and desired nothing, for I was bare being and the knower of myself in the enjoyment of truth" (*Sermon* 52). Such claims, which got Eckhart into trouble with the guardians of ecclesiastical orthodoxy, can only be understood by adverting to the opening clause of Eckhart's sentence and its basis in the traditional doctrine of the divine ideas, which are strictly *one* with God in the divine simplicity. The mystic's "breakthrough" (*durchbruch*) is the movement away from a nameable God to the utterly simple, ineffable Godhead that Plotinus regularly called "the One." Eckhart's main differences from Plotinus—and in Roy's view a definite advance over the pagan thinker—are, first, that Eckhart does not see mysticism as an escape from the body, a flight of the alone to the Alone, but rather teaches that eternity can be actualized "when one is busy with ordinary chores" (94), and, second, that this actualization can be a lasting state or disposition and not simply a discrete, momentary event, as Plotinus implies.

The third and last "classic" thinker whom Roy discusses in part 2 of his book is Friedrich Schleiermacher. This chapter simply incorporates the major part of an article Roy wrote for the *Journal of Religion* together with some paragraphs from an article in the journal *Method*. Although Roy astutely shows that Schleiermacher, unlike many German thinkers, recognizes the reality of a prereflective consciousness as distinct from the unconscious on the one hand and reflective consciousness on the other, Roy devotes much of the chapter to faulting Schleiermacher for failing to give a successful explication of consciousness-in. In this sense, Roy does not here advance his argument in any positive way. I believe the other chapters would have cohered better if the Schleiermacher material had been left as a self-contained article instead of being inserted into this book.

Part 3 of the book is especially interesting, for it is only here that Roy makes the case for a convergence between the thought of Western thinkers like Plotinus, Eckhart, and Lonergan and that of the Zen thinkers Suzuki, Nishitani, and Hisamatsu. In his fourth chapter, dealing specifically with Eckhart, Roy had already stressed the medieval Dominican's insistence on detachment (*abegescheidenheit*) from everything, not merely material possessions and pleasures but even religious practices and a sense of doing God's will. In the same *Sermon* 52 quoted above, Eckhart says, "As long as a man is so disposed that it is his will with which he would do the most beloved will of God, that man has not the poverty we are speaking about, for that man has a will to serve God's will—and that is not true poverty!" In his final chapters, Roy points out numerous parallels to this kind of detachment in the Zen writers, a detachment that in both East and West is commonly spoken of in terms of conversion. Nishitani writes of an "existential conversion" in which "the self does not cease being a personal being. What is left behind is only the person-centered mode of grasping person, that is, the mode of being wherein the person is caught up in itself." Having left that behind, what remains is "emptiness," which Nishitani

calls "a standpoint of absolute non-attachment" that opens up "a place which in every way serves as the ultimate locale for a meeting between people."

It is this emphasis on interpersonal encounter, which at one point Nishitani even calls "a field where self and others are bound together in divine *agape*," that allows Roy to emphasize how authors from both the Western and Zen traditions highlight the affective side of mystical consciousness. As noted earlier, Roy is reluctant to call love simply "the kernel of mysticism," but in the final, summational paragraphs of his book he makes the strong claim that "mystical enlightenment creates an ambience of equanimity . . . thanks to which authentic love, compassion, and patience, which allow a person to transcend oneself towards other people, become natural (albeit not easy) and work themselves out in act-like affects and in deeds" (189-90). Roy admits that mystical consciousness can be distorted. People can become attached to their meditative or contemplative practices or complacently enjoy their spiritual performance, which is why Roy approvingly quotes Bergson to the effect that the complete mystic is one whose "contemplation is engulfed in action" and adds that "in their insistence on action, Bergson, Eckhart, and the Japanese Zen practitioners remarkably converge" (190).

From my own conversations with some Japanese practitioners of Zen I can readily affirm Roy's final point. The hours of sitting in the meditation hall are integrally related to the rest of one's life, so much so that flashes of enlightenment may occur just as frequently in the kitchen or rice paddy as in the *zendo*. The convergence with Eckhart and other mystical writers in the Christian tradition is obvious. That this "insistence on action" concerns not only the way we relate to other persons but also to the rest of the world around us is also rightly emphasized by Roy, above all in his reference to the way Nishitani understands the salutary effect of Francis of Assisi's addressing a cauterizing iron as "Brother Fire," a passage that Roy considers the high point of Nishitani's *Religion and Nothingness* (177). For these reasons, Roy can certainly be said to have met his objective of making a contribution toward showing how interfaith dialogue can be enhanced by using the language of consciousness. His book could accordingly serve in graduate courses in interreligious dialogue as well as in more general courses in the philosophy of religion. The only significant weakness of the work is the intrusion of the chapter on Schleiermacher (who is scarcely even mentioned elsewhere in the book), though any revised edition could also profit from a more thoroughgoing integration of the material from the East instead of relegating it primarily to the final four chapters.

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Les anges et la philosophie: Subjectivité et fonction cosmologique de substances séparées à la fin du XIIIe siècle. By TIZIANA SUAREZ-NANI. Paris: Vrin, 2002. Pp. 204. 24 € (paper). ISBN 2-7116-1514-6.

Connaissance et langage des anges. By TIZIANA SUAREZ-NANI. Paris: Vrin, 2002. Pp. 271. 30 € (paper). ISBN 2-7116-1572-3.

Tiziana Suarez-Nani's two-volume "philosophical portrait of the angel" encompasses four themes. The subjectivity of the angel and the cosmological function of spiritual creatures are treated in the first book, and angelic knowledge and communication in the second.

Suarez-Nani begins *Les anges et la philosophie* by observing that the notion that angel-like beings exist derives from a long tradition of conceiving the universe as ordered, where order is understood to consist in hierarchy and interconnection. She then introduces the principal figures in this tradition. Proclus and other neo-Platonists advocated the view that there should be an uninterrupted chain of intermediary beings between the first principle and the least of the beings derived from it. Pseudo-Dionysius, while rejecting many of the details of Proclus's system, retained the general notion that the universe requires a hierarchical structure, to which he added notions of his own. According to Suarez-Nani, the *Book of Causes* was even more influential than Pseudo-Dionysius for the elaboration of philosophical views concerning angels in the thirteenth century (*Les anges et la philosophie*, 19). This work was successful in transmitting neo-Platonism to the thirteenth century because its re-elaboration of Proclus was close to the metaphysics of Pseudo-Dionysius—that is, it was monotheist and creationist, and devoid of demigods. Other influences on thirteenth-century angelology include Aristotle, Avicenna, and Augustine. The thinkers whose views Suarez-Nani intends to examines in depth are two students of St. Albert, Thomas Aquinas and Thierry of Freiberg.

The first chapter of part 1 is entitled "The Angelic Subjectivity: Nature and Individuation of Angels." (I do not recall Aquinas speaking of "subjectivity"; it would have been useful to define this term.) By way of preface, Suarez-Nani speaks about the reason why Aquinas regards angels as needed for the order of the universe. The discussion here is one of the least satisfying parts of a book that insists upon the pertinence of philosophy to questions concerning angels. It would have been helpful if all of the philosophers who made a case for the existence of separated substances—or even just those whom Aquinas mentions in his *opusculum* on separated substances—had been surveyed, and then categorized.

Suarez-Nani explains how Aquinas's position on the existence of angels derives from his position on the finality of creation. Aquinas holds that God creates because he desires to communicate his goodness, and in doing so to produce something like unto himself. Since no single creature comes in any way close to being an adequate likeness of God, God produces a diversity of beings. Suarez-Nani does not ask whether the notion that God freely creates in order to share his goodness with other beings, and thereby produce a reflection of his

own goodness, is philosophical or theological, and if philosophical, who first enunciated it. Once it is granted, it is not hard to see that the universe would be defective as a reflection of God if there were no beings that were like to God by having a purely intellectual nature (ibid., 30).

Suarez-Nani next takes up the manner in which angels are individuals. She first explains Aquinas's teaching on matter as principle of individuation in material beings, and then gives a straightforward exposition of his teaching on the individuality of angels. I question though her assertion that "the [imperfect] condition of the human individual . . . is ultimately due to a material substrate which imprisons [the individual]" (ibid., 45). That something is imperfect is not synonymous with its being defective. Human beings are less perfect than angels because of their body and their mode of cognition which is dependent upon sense knowledge obtained through the body. This does not conflict with the notion that the reason the human intellect is united to the body is for its perfection, something Suarez-Nani acknowledges in her second book (*Connaissance et langage des anges,* 31).

In chapter 2, Suarez-Nani considers the views of Thierry of Freiburg. Thierry holds that "one individuality is constituted each time parts are added to the essence of a thing, though these parts are not necessarily material" (*Les anges et la philosophie,* 56). This is the basis for his position that there can be many angels of the same species. Aquinas, on the other hand, maintains that a multitude of angels of the same species could not exist any more than a multitude of separated whitenesses could exist—whiteness is not many except according as it is found in many substances (*STh* I, q. 50, a. 4). Suarez-Nani does not attempt to adjudicate between these two views. She in fact misunderstands Aquinas's views on individuation. Aquinas never says that "one form can only be individuated by its reception in matter" (*Les anges et la philosophie,* 61), but only that things that agree in form can only differ numerically due to matter. This mistake may be at the root of Suarez-Nani's assertion that "the angels of Thomas . . . are not individuals, but realities possessing a certain universality" (ibid., 72). Aquinas, to the contrary, affirms that angels are persons (*ScG* IV, c. 55), and by "person" he means an individual substance of a rational nature.

Another place where it would have been helpful to put Aquinas's views alongside Thierry's regards Thierry's hierarchy of being: the One (God), Intelligences, souls of the heavens, angels, human souls. This hierarchy is based on notions such as that one intelligence can proceed from another by a mode of essential causality which was given to it by God, a mode of production inferior to creation (*Les anges et la philosophie,* 64, 68), and that the intelligences "are intellects by essence, who are not subject to any difference between their faculty, their operation, and their substance" (ibid., 66). Aquinas is open to the existence of intelligent creatures other than humans and angels, but rejects Thierry's Proclean schema, holding rather that immaterial creatures cannot assist in the production of another immaterial being (ibid., 98), and that in God alone there is an identity of faculty, operation, and substance.

The second part of the book is devoted to examining the view that separated substances are movers of celestial bodies. Aristotle's rationale for this view is that the motion of these bodies (circular, unchanging, and eternal) appears to be qualitatively different from the motions of bodies on earth, and this requires a proportionate cause. According to Suarez-Nani, the reason that eternal, immobile causes other than the unmoved mover are needed to account for these motions is that the unmoved mover "cannot directly apply itself to the celestial spheres" (ibid., 95). Aristotle never says that. Rather he attributes the simple spatial movement of the universe to the prime unmoved mover (*Metaphysics* 1073a29, 30), and thinks that the other eternal motions such as those of the planets should each have their own immobile and eternal mover. Suarez-Nani next discusses Aquinas's rejection of Avicenna's intermediaries which are creators. She notes in regard to change, as opposed to creation, Aquinas accepts the need ("exigence") for mediation. It would be worth pointing out that such mediation is not an absolute necessity, but that God freely chooses to use secondary causes in order to communicate greater goodness to creatures, by not only making them to be, but also to be causes. The notion that it is appropriate for a king to have many ministers should also have been more fully developed (*Les anges et la philosophie,* 114 n. 2, and 142). Suarez-Nani does not consistently distinguish what God as omnipotent could do, but would not do, in keeping with his wisdom.

After noting that Aquinas shares Aristotle's views about the imperishable nature of the heavens, Suarez-Nani goes on to lay out Aquinas's arguments for why the motion of the heavenly bodies depends on an intellectual substance as mover, rather than on an intrinsic principle or an external material mover. One is left wondering whether anything in Aquinas's arguments can be recuperated given the false view he had about the nature of the stars and planets. Is there anything to the notion that nature is submitted to the action of separated substances? The notion of a twofold order in the universe that Thomas speaks of would have been useful for sorting out the philosophers' views on separated substances: "order in things is found according to these two things, namely, according as one thing is better than others, and according as one is moved by others" (*STh* I, q. 103, a. 4, ad 1). If one looks at the general notion, and not at the details of the philosophers' views, it seems reasonable to think there would be a being intermediary in excellence between God and humans. It is harder to find a philosophical justification for the notion that these beings play a causal role vis-à-vis material creation.

Suarez-Nani asserts that while Aquinas was not preoccupied with whether the separated substances moving the heavens are the angels of the Dionysian hierarchy, one can argue that the two coincide (*Les anges et la philosophie,* 117). Although Aquinas does not ask whether angels and the philosophers' separated substances are the same beings in precisely those terms, in *STh* I, q. 110, a. 1 he does give an affirmative answer to the question of whether angels preside over the movements of corporeal creatures, noting that philosphers and Doctors alike held that there were incorporeal substances that ruled over the corporeal realm.

He seems to regard the angels' rule over corporeal creation in a generic way which includes both bringing messages to humans, as well as moving natural bodies (*STh* I, q. 112, a. 1, ad 4). Indeed, for Aquinas, that an angel be sent as minister is equivalent to the angel "doing something in regard to some corporeal creature according to divine command" (*STh* I, q. 112, a. 4). Moreover, he answers the question of whether all angels are sent on missions by reference to the Dionysian hierarchy, where it is the lower angels who interact with humans, while mid-ranking angels act on the heavens. Unlike St. Albert who appears to have thought that philosophy has nothing to say about the angels of theology (*Les anges et la philosophie,* 126), Aquinas regards the two descriptions of these immaterial beings as compatible. At the same time he counsels against binding theological teachings about angels to determinations made by philosophers (ibid., 131). And on the question of whether the heavens are ensouled, he says that it is of no concern to the faith one way or the other (ibid., 137 and 167 n. 1).

The chapter devoted to Thierry of Freiberg and the animation of the heavens seems of dubious value in this context. What seems to be typical of Thierry and of every philosopher who treats of separated substances is that each has his own system of intermediaries with no hard evidence to back it up. Eternal heavenly bodies make a nice intermediary in theory, and animated ones perhaps less so, but the reality is that these things do not exist, and it is chiefly of historical interest by what defective reasoning and/or verbal gymnastics the philosophers concluded that the existence of such intermediaries was necessary.

Suarez-Nani begins *Connaissance et langage des anges* by recounting Aquinas's views on angelic knowledge, following closely the *Summa Theologiae.* "The angel is a purely spiritual substance which subsists as a pure form—or essence—dependent as to its being, and by that very fact marked by potentiality" (*Connaissance et langage des anges,* 20). Angels are limited beings whose nature does not comprehend all things, and for this reason they need to be perfected by intelligible species in order to understand things. These species cannot come from things, as is the case of humans who acquire ideas starting from sense experience of things, because angels are immaterial. The source of these species, then, must be God. As coming from God, "Formae intellectus angelici sunt excellentiores rebus ipsis, utpote divinae essentiae propinquiores" (ibid., 29). Morever, the closer the angel is to God who knows all things by knowing himself, the fewer and more universal its intelligible species are.

Suarez-Nani next takes up angelic cognition from the point of view of what is known, starting with the angel's knowledge of itself. Angels do not need an intelligible form to know themselves because they are "in the genus of intelligible things as a subsisting intelligible form" (*STh* I, q. 56, a. 1). They thus know themselves through their own form. Suarez-Nani points out how this self-knowledge constitutes a certain intermediary between divine and human knowledge. God knows all things through himself, while humans require a *medium cognitionis* for every object of thought, including their humanity. Angels know themselves through themselves while requiring a *medium cognitionis* for everything else, other angels included. Suarez-Nani sees this intermediary

character of angelic knowledge as filling the function of a *connexio universi* (*Connaissance et langage des anges,* 39). As for knowledge of God, angels do not know him through an intelligible species such as they have for other things, but they know him (granted they do not comprehend him) by knowing their own nature insofar as "the image of God is impressed in the very nature of the angel through its essence" (*STh* I, q. 56, a. 3). The angel is thus a mirror of sorts representing God's image.

Suarez-Nani next walks us through *STh* I, q. 57, aa. 1-5, where Aquinas explains whether angels know material things, individuals, and future contingents, secrets of the heart, and mysteries of grace; she then considers *STh* I, q. 58, aa. 1-7, concerning the modalities of angelic knowledge.

Part 1, chapter 2 takes up the views of Giles of Rome. Giles argues in favor of the need for intelligible species in order for an angel to understand things other than itself, using Aristotle's reasoning in *De Anima*. The thing known must be in the knower in some way. It cannot be in the knower entitatively. Therefore, it can only be in the knower by way of likeness. Giles and Aquinas agree that the intelligible forms in the angels do not come from things, and both adopt the Augustinian position that "just as the *ratio* by which a creature is made is in the Word of God prior to being in the creature itself which is made, thus also knowledge of that same *ratio* first comes to be in the intellectual creature, and then exists in the very make-up of the creature" (*STh* I, q. 55, a. 2; *Connaissance et langage des anges,* 119, 120). Giles further holds that "the proper object of the angelic intellect is neither the universal nor the particular, but the whole thing according to its entire being" (*Connaissance et langage des anges,* 106). (Suarez-Nani omits to consider whether Aquinas would agree with this.) Giles takes up an interesting objection to the notion that angelic species are innate and not received from things, namely, that this view seems unable to account for how the angel knows new events, such as a baby being born (ibid., 122). It seems that the event itself would cause a change in angelic knowledge. Giles maintains that "when things come forth into existence the angel begins to understand other things which it did not understand before through the same species that it [always] had within itself" (ibid., 157 n. 3). Aquinas seems to adopt the same view in *STh* I, q. 57, a. 3, ad 3, although our author does not mention this.

Too often Giles's and Thomas's view are not put side by side. Thomas denies that angels can know what any rational being is thinking, other than by probable signs, while Giles affirms that higher angels can know which intelligible species a lower angel is thinking about, albeit not precisely what the latter is considering in that species. A comparison of the rationale each gives would have been helpful. It would also have been useful to compare the three acts of cognition an angel can carry on simultaneously that Giles speaks of to the morning and evening knowledge that Aquinas speaks of.

Suarez-Nani begins her discussion of Aquinas's views on angelic speech (*locutio*) by distinguishing *locutio* from *illuminatio*. In the *Summa,* Aquinas takes the position that "in angels, all illumination is speech, but not all speech is illumination" (*STh* I, q. 107, a. 2). Suarez-Nani only mentions his position in the

Sentences (I *Sent.*, d. 11, q. 2, a. 3), namely, that speech differs from illumination in revealing a content that does not intellectually perfect the other (*Connaissance et langage des anges,* 187, 198). She does not alert us to the (apparent) change of view. Aquinas does consistently hold that lower angels can speak to higher angels, but cannot illuminate them. Suarez-Nani also misses Aquinas's reason for why an angel's thoughts are unknown to other angels, unless it chooses to reveal them (ibid., 189), a reason that applies to angels and humans alike: "The will of the rational creature is subject to God alone, and therefore those things which depend on the will alone . . . are known to God alone . . . a manifest case of [which] is that a person consider something in act" (*STh* I, q. 57, a. 4). Since it is the angel's will alone that prevents other angels from knowing its thoughts, in order for it to manifest its thoughts to another, it simply has to will to do so (*STh* I, q. 107, a. 1, ad 1). One cannot help but marvel at the beauty of a form of speech that results in perfect understanding between speaker and listener (*Connaissance et langage des anges,* 207).

The discussion of exactly what effect one angel has on another when it speaks to that other is less than satisfying. Suarez-Nani quotes *De Veritate,* q. 9, a. 5, ad 2 to the effect that "angelus loquens nihil facit in angelo cui loquitur." However, this is a response to a specific objection, namely, that it would be incongruous for a lower angel to speak to higher angel. It is far from clear that an angel who is spoken to is never affected by the speaker (e.g., when the speaker reveals mysteries of grace previously unknown to the listener). Indeed, *De Veritate,* q. 9, a. 2 seems rather to indicate that angels can cooperate in a certain manner with God in perfecting a listener (something that Suarez-Nani seems to acknowledge later on [ibid., 117]). Towards the end of the chapter, Suarez-Nani claims that Aquinas does not address whether angels speak to humans because it is an "embarrassing" question liable to "compromise the status of angels as purely spiritual beings" (ibid., 204). However, Aquinas in fact specifically mentions speech in *STh* I, q. 52, a. 3, where he asks whether angels exercise life activities in the bodies that they assume. Plainly angels are not going to communicate to us by simply choosing to reveal their thoughts to us, given the limitations of our mode of understanding. Angels will then have to move bodies, in a way reminiscent of a voice-synthesizer, to communicate with us in a manner we can understand.

I was not convinced that Giles of Rome contributes much to understanding the speech of angels. For instance, he holds that angels communicate with each other using sensible signs such as they use when communicating with us. Now, one uses sign language to communicate with a person who can hear when that person does not speak one's language; there would be no point in doing so with someone who did (i.e., with a view to communication alone). Why then would angels use an inferior form of communication to speak to each other? Giles would even have angels communicating via images they generate in the imagination of a human or animal (ibid., 213). He also claims that angels write messages in the heavens to each other which cannot be read by humans (ibid., 215). For Giles, angels cannot by simple choice reveal specifically what they are

thinking to other angels, but need to do so via the intermediary of a *signum intelligibilium*. But there is an obvious problem with this position: either this intermediary is natural the way a concept is naturally a likeness of things, or it is arbitrary. If it is natural, then it is redundant. If it is arbitrary, how would it ever become associated in the mind of another with the concept the angel wished to communicate? The latter criticism also applies to the heavenly writing which Giles says is arbitrary (ibid., 238). It never occurs to Giles that the arbitrary sign can have no meaning to another unless there is some way for the other to connect the sign to its content. Human beings do this in the first instance through pointing or the like. Yet according to Giles, regardless of what arbitrary sign an angelic speaker chooses to use to express a given thought, that thought will be immediately understood by other angels to whom the message is directed (ibid., 236). Such an association of sign with thought would be possible if the listening angel knew the other angel's thoughts when the other chose to reveal them—but then the addition of an arbitrary sign would be superfluous.

Suarez-Nani repeatedly suggests that angels are models or paradigms for humans with respect to knowledge (ibid., 141, 148), speech (ibid., 207), and, in her first book, subjectivity as well (*Les anges et la philosophie,* 188, 189). While there are points of contact—as is to be expected in a well-ordered universe (e.g., the habit of *intellectus* in humans)—angels and humans are also meant to differ, and thus the more perfect cannot always serve as a model for the less perfect. Humans cannot do other than acquire intellectual knowledge starting from sense experience, nor can we do without sensible signs in order to communicate. Suarez-Nani does admit that we are not to take angelic knowledge as our norm, but this observation is tucked in a footnote, and more often we are told the angel represents "an ideal that the human being aspires to" (*Connaissance et langage des anges,* 169). Also problematic is her insistence on how much angelology can teach us about ourselves (ibid., 9, 169, 170). Human cognition and speech are things we have direct experience of, and thus the nature of these things is better known to us than is the nature of angelic cognition and speech. In some ways our understanding of angelic cognition is dependent upon our understanding of human cognition (e.g., we understand angels' intelligible species by reference to the concepts in our practical intellect). Acknowledging this dependency does not preclude affirming that the comparison of humans to angels does give us a better understanding of ourselves and of our place in the universe.

Suarez-Nani is to be commended for daring to treat so difficult a philosophical subject as the angels. She brings to our attention a wealth of fascinating texts (including the articles on angels included on the syllabus of errors in 1277). The scholarship is thorough, and the copious Latin footnotes very helpful. One can hope that as a result of her efforts philosophical reflection on angels will come back into vogue.

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Thomas Aquinas: Theologian of the Christian Life. By NICHOLAS M. HEALY. Aldershot, England: Ashgate, 2003. Pp. 168. $29.95 (paper). ISBN 0-7546-1472-7.

In his classic *The Nature of Doctrine: Toward a Post-Liberal Theology*, George Lindbeck distinguished between a cognitivist, an experiential-expressivist, and a cultural-linguistic understanding of Christian doctrine. The major approaches to the interpretation of the thought of Thomas Aquinas over the past century can be seen to correspond, *mutatis mutandis*, to these categories. The neo-Scholastic school—represented by Garrigou-Lagrange, Maritain, Journet, and in recent times, Ralph McInerny and John Wippel—presents a rather cognitivist version of Aquinas, stressing the philosophical doctrine that can be distilled from Thomas's oeuvre. The Transcendental Thomist school—inaugurated by Maréchal and Rousselot and brought to prominence by Lotz, Rahner, and Lonergan—offers a more experiential-expressivist reading of Thomas, emphasizing the subjective sensibilities that inform and condition his teaching. In the last couple of decades, a third school has emerged, one that places emphasis neither on propositions nor underlying experience, but rather on the densely textured and unique world that the writings of Aquinas create and on the form of life that made them possible. This approach, which might be styled cultural-linguistic or postliberal, is on vivid display in Nicholas Healy's *Thomas Aquinas: Theologian of the Christian Life.* A concern of postliberal Thomists such as Healy is that both neo-Scholasticism and Transcendental Thomism, in their preoccupation to ground the claims of faith in something more elemental (truths arrived at through philosophical reason for the former and universally available experience for the latter), are essentially modernisms, which allow the content of revelation to be marginalized or muted. But Thomas Aquinas was not a modern foundationalist and his principal interlocutor was not the skeptical nonbeliever; hence a new path of interpretation—more in line with the assumptions and preoccupations of Thomas's time—must be essayed.

It is of supreme importance for Healy that Aquinas was a Dominican, a member of the Order of Preachers, charged with the task of proclaiming the good news of Jesus Christ risen from the dead. Though Karl Barth and many others have complained that Thomas's Christology is incidental to his system, Healy argues throughout his book that evangelical proclamation is, in point of fact, the organizing and animating principle of Thomas's intellectual work. He agrees with Torrell that Aquinas is best read as a Christian spiritual master. Part of the problem is that contemporary interpreters of the Angelic Doctor, saddled as they are with foundationalist assumptions, tend to believe that what comes first is what is most important. Thus because Thomas discusses God in a largely philosophical way in the first part of the *Summa Theologiae* and gets to a consideration of Jesus Christ only in the third part, it appears as though the rational account provides the ground, setting, and context for the Christology. Healy suggests that this is to have it precisely backward, to forget that the

Thomas's masterpiece is structured along the lines of a liturgical procession in which the most significant players come, not at the beginning, but at the end.

When we follow Healy's examination of Aquinas's Christology, a key feature emerges with special clarity. In accord with the formula of Chalcedon, Thomas affirms that divinity and humanity come together in Jesus in a noncompetitive but asymmetrical manner, since the natures are joined "without mixing, mingling, or confusion" but are embedded, so to speak, in the unity of the divine person of the Logos. The creaturely is not overwhelmed, but rather enhanced, by the proximity of the divine, and this noncompetitiveness is guaranteed through the power and primacy of the divine. What is ruled out by this Christology is a view that would either construe God and the creaturely as rivals or allow God to be in any sense positioned by the creaturely. This dynamic understanding of Jesus, which contains elements of what contemporary theologians would call both "high" and "low" Christology, provides, on Healy's reading, the hermeneutical lens for reading the whole of Aquinas's evangelical work.

The Christological lens is particularly clarifying in regard to Thomas's understanding of the relationship between reason and revelation. Healy cites a line from Etienne Gilson which rather painfully indicates a fatal flaw in the standard Scholastic interpretation of this issue: "it is natural that [Thomas's] first question should be about the existence of God. On this problem, however, a theologian cannot do much more than apply to the philosopher for philosophical information. The existence of God is a philosophical problem." What Gilson states, with almost brutal clarity, is the foundationalist view that in regard to its most basic and essential question—the very being of God—theology is entirely dependent upon and positioned by natural philosophy. Healy correctly observes that nothing could be further from the biblical mind of Aquinas. Of course, the question of God's existence is not first in the *Summa Theologiae;* instead, it is an inquiry into the nature of *sacra doctrina,* the intellectual discipline that Thomas will be following throughout the work. In the course of that opening *quaestio,* Aquinas makes eminently plain that philosophical wisdom is in no sense a foundation for the theological enterprise, but is instead a means employed by the theologian in his pedagogical task of leading people (*manuductio*) toward the fullness of the revealed mysteries. If one were looking for foundations for *sacra doctrina,* one would have to appeal, not to philosophy, but to the knowledge of God enjoyed by God himself and by the saints, for theology is a subalternate science, deriving its principles from that higher *scientia.* Throughout his writings—and no more clearly than in his commentary on the Gospel of John—Thomas shows that human reason is itself a participation in the light of the divine intellect. This means that natural reason could never be construed as standing outside of divine influence and requiring a correlation to it. The famous proofs for God's existence, which Gilson bizarrely saw as providing the philosophical justification for the theological endeavor, are in fact prime instances of the *manuductio* that Aquinas spoke of. The finite and fallen mind needs to be led gradually and in accord with its compromised capacities to see

the truth of the biblical revelation concerning God. It is this modest (though pedagogically important) service that the proofs perform. Thus philosophical reason finds itself positioned and elevated by a higher theological reason in which it participates, mirroring the relationship between the human and divine natures in Jesus.

Another area in which the Christological hermeneutic is clarifying is Aquinas's naming of God. As David Burrell, Fergus Kerr, and many others have pointed out, the central feature of Thomas's doctrine of God is its radical apophaticism: we know God as something unknown. This negative theology appears most clearly in the discussion of God's simplicity. In claiming *simplicitas* of God, Thomas is not making a positive statement about the divine nature (which remains opaque to us in this life); rather, he is removing from the concept of God anything that smacks of the creaturely: mutability, finitude, dependency, and, most elementally, participation in a higher cause. What Healy helps us to see is that this *via remotionis* flows, not only from the anti-idolatry texts of the Old Tesatment, but also and especially from the Christological assertions that Aquinas inherited from the orthodox tradition. Were God a worldly nature, he would enter necessarily into competition with other finite natures, but since we know through Jesus that God is capable of uniting himself hypostatically and noncompetitively with a creature, God must be utterly unlike anything in the world. He must be known as something unknown. Thus the assertion of the divine simplicity is ultimately Christological in form and evangelical in purpose.

Whitehead and his innumerable theological disciples have argued that the immutable and perfect God, not really related to the world, is a philosophical abstraction at odds with the warm and responsive God implied in the teaching of the Galilean prophet Jesus. Healy effectively shows how Aquinas derives God's absolute character not so much from Aristotle as from Jesus, the Incarnate Lord. Precisely because the God of the Incarnation is not a being in or alongside the world, he cannot be caught in the nexus of conditioned relationality, responding to the influences and actions of finite things. Instead, all of God's relations to the world that he has made are metaphysically prior and primordial, so that, to give but one example, his knowledge of the universe is not derived from the universe's existence, but rather vice versa. But this means that the absolute God is in fact far more intimately connected to creatures (indeed closer to them than they are to themselves) than any finite and passive supreme existent could possibly be. The paradox is that Thomas's denial of a "real" relation between God and the universe is tantamount to his insistence that God is in all things by essence, presence, and power—and in the most intimate way (*intime*).

Another implication of this radical divine otherness is the noninvasive manner in which God grounds created causality. Thomas is absolutely uncompromising in his claim that God governs the universe and that his providence extends to particulars. The true God is neither the indifferent prime mover of Aristotle nor the distant watchmaker of the Deists; instead, he is the power that stretches from end to end mightily and orders all things sweetly, as the book of Wisdom puts it. However, this all-embracing divine influence does

not rule out the real activity of secondary created causes because, once again, God's activity is modally other and hence noncompetitive. Healy demonstrates how the aporias concerning God's involvement in the world that have bedeviled so many modern religious philosophers simply didn't exist for Aquinas, because he was operating out of a distinctively Chalcedonian metaphysics.

The second part of the *Summa Theologiae,* which deals with the human journey back to God, is by far the largest of the three major sections of the work, and throughout the Middle Ages it was the most copied and commented upon. Healy joins a number of contemporary Thomists who are attempting to recover the importance of the treatise on the moral life in the overall context of Thomas's writing. Here again, the Christological hermeneutic is applied. Though he borrowed liberally from Aristotle's doctrine of the acquired virtues, Thomas never held that natural virtue is sufficient unto itself. Rather, it has to be surrounded and elevated by the theological virtues of faith, hope, and love, since they alone open the human mind and will to their proper, supernatural end. Just as philosophy is transfigured by revelation, so the natural virtues are both maintained and transformed by the theological virtues. In both cases, the asymmetrical but noncompetitive relation between Christ's natures provides the theoretical framework.

The organization of material in Healy's book is helpful, and his writing is both lively and clear. But his greatest contribution is the simple reminder that Thomas was a Christian theologian, a master of the *sacra pagina,* and a faithful member of the Order of Preachers. When that primary evangelical identity is forgotten, one begins to create the caricatures of Aquinas with which we are all too familiar.

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The Art of Equanimity: A Study on the Theological Hermeneutics of Saint Anselm of Canterbury. By EMERY DE GAÁL GYULAI. New York: Peter Lang, 2002. Pp. 428. $56.95 (paper). ISBN 0-8204-6010-9.

Interpretive studies of the Anselmian corpus are often impeded by their self-partitioned scope. The argument of *Proslogion,* for example, will be considered without the context of the greater treatise; *Cur Deus Homo* will be presented independently of Anselm's understanding of *reditus* or *concordia;* or the prayers will be cast as the summit rather than the youth of his spirituality. Such sequestering of concepts and isolation of treatises ignores the discursive and

integrated character of the thought of Anselm of Canterbury. Moreover, it sacrifices the culminative character of his work.

Emery de Gaál Gyulai studies Anselm without these encumbrances. *The Art of Equanimity* looks at the full expanse of Anselm's works and finds there a pervasive (albeit seldom studied) thematic and a consistent method and protocol. Gyulai then translates those into a deftly prosecuted avenue whereby that saint's teachings can be approached and penetrated.

The bracing character of Gyulai's analysis is demonstrated even in his book's earliest pages. While he acknowledges Anselm's debt to Augustine (as does Anselm himself, of course) and recognizes the influence of Platonic insight, Gyulai focuses instead on Plotinus as the true antecedent of Anselmian thought. He reveals more correlation than debt in the link between Plotinus and Anselm, but he mines their intersection effectively and purposefully, creating a prosperous and persuasive alternative grounding for Anselmian thought.

The other influence emphasized by Gyulai is Benedictine monasticism. This, too, provides for a rich interpretive elaboration of Anselm. Scholars commonly provide lip-service to Anselm's monastic allegiance, but rarely is its rôle specified or delineated so persuasively. Gyulai displays an impressive familiarity with the Benedictine rule and life, placing Anselm solidly and congenially in its context. This makes a significant contribution to his *explicandum* of Anselm. By allowing Anselm his Benedictine voice (cf. p. 14), Gyulai secures an essential key to what he terms the "*via Anselmi.*" Benedict is cast as the root of both deed and thought in Anselm.

According to Gyulai, Anselm sees a "finite human person grounded in an infinite origin" (16). Finite and infinite are distinct, yet the finite is not inherently "unrelated or separate." This, by Gyulai's appraisal, allows perspective; it "permits one to behold the essential in life" (17). That understanding is fundamental to the argument that follows. It figures into that whole concept of 'necessary conclusions' (Anselm's *necessariis rationibus*) that serves as the core dynamic of Anselmian reason. Gyulai's approach employs strong metaphysical consciousness and integration. Unlike the approach embraced in modernity (at least as depicted by Gyulai), this mindset is responsive and indebted to an immanent Lord. It recognizes and accepts the reality of truth and thus provides for "humanity's greater authenticity" (21).

By careful distinctions and insightful deductions, Gyulai installs this as the foundation of the Anselmian hermeneutic. In particular, he emphasizes that Anselm's method disallows compartmentalization. Philosophy and theology are not disparate, neither are they divided into subdisciplines. Their integration is fundamental to the insight they allow, a character that reflects humanity's alignment with the Lord: just as divinity has integral oneness, so does properly oriented thought. Indeed, Gyulai suggests, it is reason and faith that are enlisted by Anselm, not philosophy and theology. That is an important distinction. Perspective is fundamental in Anselm. Repeatedly, he imposes his own definitions and specifications on his subjects, ensuring that they are aligned with truth (by his understanding of it). Gyulai conveys an appealing excitement as he

discusses the vitality of this vision, invariably setting Anselm's insights (according to the peculiar grounding he provides) within the provisions of Christian dogma.

Here Gyulai's emphasis on the correlation with Plotinus proves especially fecund. The author exposes a "congeniality" that exists between Plotinus and Anselm (discussed most explicitly in chapter 2) that lets each lend depth and exposition to the other. At the core of their intersection, Gyulai maintains, is their insistence that a person's reason is "sustained by the object of its thinking" (43). Both Plotinus and Anselm, he suggests, recognize a divine predication in truth. For them, "everything that [comes] forth from God is destined also to be traceable back to its origin" (45). Anselm's *continere* is very much Plotinus's *synechein;* both terms reflect the indebtedness and dependence that weighs upon human beings in relation to God.

That relationship is a recurring theme in Anselm's thought, and Gyulai sees it as indicative of a distinctly mystic point of view. According to Anselm, a person identifies with the principle itself. Each individual is grounded in the One. He would have being and Being intersect; "an access to the One is opened in spite of all essential differences" (52).

Gyulai also addresses Anselm's correlation with Scripture, patristic sources (especially Gregory of Nyssa and Pseudo-Dionysius), and other mediaevals, but Benedict remains his most profound alignment. Gyulai mines Anselm's compatibility with his monastic predecessor, using it as a prime element in the Anselmian hermeneutic. Benedict provides context for Anselm's life and thought (cf. the discussion in chapter 3). Moreover, the congruence with Benedict colors his approach to truth and to the person's life of truth. *Regula Benedicti*'s vision of an existence wherein God is glorified, articulated, and reflected—in all that is and in all that is done—is fundamental to Anselm. He embraces the absolute character of Benedictine life where (as Gyulai articulates it), "No nook is left for profanity to seek refuge from God" (91).

Gyulai develops the Benedictine insight and its relevance to Anselm in considerable detail. His point, realizing how integrally Anselm adopts the monastic founder's perspective, is that Benedict endowed this later monk-abbot-bishop with vital confidence in a mysticism that disallows any "hiatus between idea and reality, between idea and image" (95). In Anselm's hands, where there is little indulgence of gray areas, that requires a full and comprehensive correlation with divinity. Gyulai convincingly portrays Anselm as profoundly influenced by the practicability that the cloister assigns to this ambition. This is a "continuation" of Plotinus, he suggests, proposing an intelligent, active, willed, purposeful correlation that accents "the divine in the human being" while envisioning "already in his terrestrial existence the heavenly Jerusalem" (99). In this, Gyulai differentiates the vision shared by Benedict and Anselm from that proposed in mainstream Scholasticism. In particular, he notes that for them *experientia* is necessarily part of the work at hand; the *scientia* of later Scholastics cannot command the field autonomously. In the Benedictine standard "*ora et labora,*" Gyulai finds the "hermeneutical locus of the monastic mind" (101); he identifies it as a pivotal ideal for both Benedict and Anselm, and the

core element in separating monastic theology from ordinary dogmatic theology. Truth is lived as well as known. By that standard, Gyulai contends, Anselm's monasticism functions comprehensively, that is, in attitude, aspiration, character, and execution.

The importance of this understanding in explicating Anselm's outlook and thought is profound. It provides him with a hermeneutic that, in a sense, pursues the divine character, presence, and honor (to use Anselm's term) in all that is. Recognizing in Anselm this mystic orientation allows Gyulai to render his hermeneutics with fresh and laudable nuance and precision. In particular, he recognizes that Anselm's thought cannot profitably be grasped independently of the reality of divinity. All thinking is for Anselm "a meditation on the One" (114).

This Anselmian insight is nurtured, explicated, and developed by Gyulai through fourteen chapters. He makes his argument effectively, calling upon his comfortable command of the full corpus of Anselm's works and his able and confident grasp of how the monastic experience is elemental in a monk's definition of self and of the self's ambition. In consequence, Gyulai's study should inform and enrich both scholars and students. This is a book of value and importance. As Gyulai plumbs Anselm's integrated life and teaching, he invests in that doctor's tuition and perspective renewed life and vigor.

Because of the generous merit of Gyulai's text, this book's few flaws seem especially peccable. The notes, for example, appear not to have been perfected as conscientiously as was the text (e.g., indicating "Constable Giles" instead of "Giles Constable" [91 n. 9]). Throughout this volume, there is a distracting and sometimes disorienting failure to italicize passages in other languages. References to *Regula Benedicti* give the chapter number, but never the verse. There is inconsistency in giving translations, too: Latin is sometimes translated, but often not; Greek passages are translated, but German and French seldom are. Such fluctuations disrupt the flow of Gyulai's narrative. There is also an unfortunate tendency to populate this text with unapplied references. Especially in the earliest chapters, multiple invocations of philosophers and others are injected without delineation or specification of their relevance.

The publisher is at fault, too, for having imposed some questionable production standards. In particular, the microscopic typeface works against Gyulai's text. Spacing—or rather, its inadequate employment—gives a jumbled, crowded appearance. Chapters begin at the top of the page and are not set off by size, placement, or character. The lack of italics when rendering non-English words and passages (as mentioned above) confuses inference and substance. The absence of headings atop each page also limits navigation. Aesthetic concerns generally are ignored in both printing and presentation.

Gyulai's argument in this book is overwhelmingly astute and precisely rendered. Indeed, he has a singular ability to use exactly the right word (e.g., his use of *dialectical* to explain Anselm's view of the "relationship between justice and mercy" [191]). His seventh chapter (on soteriology) deserves special

acknowledgment as a model of precision and penetration in handling the Anselmian insight.

In *The Art of Equanimity* Emery de Gaál Gyulai has made a significant contribution to the study of Anselm's thought. He affords the dimension as well as the substance whereby the Anselmian corpus can rightly be exposed to new generations of inquirers.

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