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4. Theology, Science, and Sexual Anthropology

A Methodological Investigation

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Introduction

Practical theology, according to Karl Rahner, is “that theological discipline which is concerned with the church’s self-actualization here and now – both that which *is* and that which *ought to be*” (102). Practical theology embraces both description and evaluation of the present situation. For description, theology relies on the sciences; for evaluation, it critically distills the scientific data through its own theological filters. The present situation, social or theological, cannot be deduced abstractly from prior theological theories; it can only be described concretely by the sciences. “There are no true *factual* judgments,” Lonergan declares, “without a foundation in relevant data” (1997: 6, emphasis added), and relevant data are supplied by scientific research and analysis. The sciences offer a range of scientific tools for that research and analysis, and rational theology, drawing on its own traditions and

principles, can then prescribe a moral course of action consonant with those traditions and principles. This kind of relationship between science and theology is surely what the Second Vatican Council's *Gaudium et spes* had in mind when it taught, "in pastoral care, sufficient use should be made not only of theological principles but also of the secular sciences, especially sociology and psychology." And again, "Thanks to the . . . progress of the *sciences* . . . the nature of [humanity] is more clearly revealed and *new roads to truth are opened*" (62, 44, emphasis added).

In this essay, we hope to contribute to the ongoing development of Catholic ethical method by exploring the interrelationship between science and theology, what empirically is and what theologically ought to be, to adequately consider the sexual person. Historically, much of what has been written and passed on as accepted tradition about theological anthropology has been grounded in a distorted view of creation in general and of sexuality in particular, creating an incomplete theological anthropology at best and an erroneous theological anthropology at worst. Josef Fuchs' judgment of the history of human sexuality throughout the Christian tradition is incontrovertible: "one cannot take what Augustine [or Aristotle] or the philosophers of the Middle Ages knew about sexuality as the *exclusive* basis of a moral reflection" (36). Christian ethics should be grounded in a comprehensive theological anthropology of the human person adequately considered. Such an anthropology is dependent on rational theology informed by the empirical sciences. Exploring and analyzing the interrelationship between theology and science can further the renewal of a comprehensive theological sexual anthropology.

This paper has five cumulative sections. First, it briefly defines Catholic ethical method and the Wesleyan Quadrilateral. Second, it explores models of the interrelationship between theology and science. Third, it proposes critical realism as a rational methodological epistemology to navigate this interrelationship. Fourth, it investigates current Catholic theological sexual anthropologies and their use of science in constructing those anthropologies. Finally, it indicates future directions for the investigation and development of an ethical method through scientific and theological discourse.

Catholic Ethical Method and the Wesleyan Quadrilateral

Bernard Lonergan defines method as "a normative pattern of recurrent and related operations yielding cumulative and progressive results" (2003: 4). Operations comprise such processes as gathering evidence; understanding, marshaling, and weighing evidence; making judgments and evaluating their truth; and deciding to act. To construct a normative pattern, ethical method must account for both epistemic claims about how we know ethical truth and normative claims about the content of that truth. We begin with a definition: *Catholic ethical method is a theological method that proposes both an epistemology for reaching ethical truth and a normative pattern for reaching a definition of human dignity and formulating and justifying norms for its attainment, all this within the Catholic tradition.*

There exist plural definitions of human dignity in Catholic theological ethics and plural formulations and justifications of norms for its attainment. Ethical method provides a justification for them by proposing sources of evidence and a normative pattern for the selection, interpretation, prioritization, and integration of evidence to define human dignity and to formulate and justify norms to facilitate its attainment. By common theological and

ecumenical agreement, this evidence is mined from what is often referred to as the Wesleyan Quadrilateral, four established sources of moral knowledge, namely, scripture, tradition, secular disciplines of knowledge,¹ and human experience. We employ the Quadrilateral for four reasons. First, it includes the sources of moral knowledge we judge essential for doing Christian ethics, sources highlighted in various ways throughout Christian tradition, especially in *Gaudium et spes*, the documents of Vatican II, and the papacies of John Paul II, Benedict XVI, and Francis. Second, these four sources are essential to any Catholic ethical method, though particular methods select, interpret, prioritize, and integrate the sources each in its own way. Third, there is a growing appreciation for and specific reference to these sources in the Catholic ethical literature from divergent normative perspectives (Cahill 1995; Curran 1999; Farley 2008; Bretzke; Salzman 2003), although there remains the need for methodological discussion to investigate how the sources are to be selected, interpreted, prioritized, and integrated. Fourth, use of these four sources may encourage ecumenical and interreligious methodological considerations that should inform Catholic ethics (Gustafson 2002). Vatican II called for the renewal of Catholic theological ethics. We use the Wesleyan Quadrilateral to respond to this call, focusing in this paper on the interrelationship between science and theology.

Theology and Science: Models of Interrelationship

Pope John Paul II highlights the need for intense dialogue between science and theology. Theology and science must enter into a “common interactive relationship” whereby, while maintaining its own integrity, each discipline is “open to the discoveries and insights of the other” (1988: 375). Physicist Ian Barbour proposes a fourfold typology of the relationship between theology and science: conflict, independence, dialogue, and integration. Particularly germane to our topic are dialogue and integration.

The *dialogue* typology explores methodological parallels, content, and boundary questions. Methodological parallels seek out similarities and dissimilarities between the methods of each discipline that may either complement or serve the method of the other. Boundary questions delimit the capabilities of each discipline and stipulate how far each may go in explaining reality. The *integration* typology encompasses natural theology, theology of nature, and a systematic synthesis of science and religion. For natural theology, the world is the point of departure and the goal is to deepen theological understanding by rationally integrating theological insights. For theology of nature, a particular theological tradition is the point of departure and the goal is to integrate scientific insights into that tradition. For systematic synthesis, the point of departure is the methods, knowledge, and language of theology and science and the goal is to integrate the two into a single system (Barbour; see also Russell and Wegter-McNelly).

Barbour’s dialogue and integration typologies parallel John Paul II’s proposal for a “community of interchange” between theology and science to expand the partial perspectives of each and “form a new unified vision.” An important caveat should be

¹ Traditionally, this source is referred to as “reason.” However, we concur with Farley (2008: 188-89) that every source of moral knowledge relies on reason, and “secular discipline” indicates disciplines distinct from, and not dependent upon, revelation.

heeded, however: theology should not seek to become science and science should not seek to become theology in terms of either method or content. “Unity always presupposes the diversity and the integrity of its elements” (John Paul II 1988: 377). Neither science nor theology should become less itself but, rather, more itself in a dynamic interchange. Each discipline retains its own autonomy and language and yet draws knowledge and insight from the other (Buckley).

The unity between theology and science that John Paul calls for has common threads with Ted Peters’ hypothetical consonance model. Peters posits that consonance “indicates that we are looking for those areas where there is a correspondence between what can be said scientifically about the natural world and what the theologian understands to be God’s creation” (2003: 19). Consonance may be either strong or weak. Strong consonance means virtual accord or harmony between theology and science. This type of consonance can be misleading, Peters suggests, because the insights of theology and science are often thoroughly dissonant. Weak consonance identifies “common domains of question-asking” and proposes hypothetical answers to these common questions. For theologians, weak consonance invites a shift from rigidity and absolute truth claims, and calls for willingness to subject theological assertions to ongoing investigation and confirmation or disconfirmation (Peters 1998: 18).

Gavin D’Costa places John Paul II’s stance on the interrelationship between science and theology “squarely within” Peters’ hypothetical consonance, where it corresponds more closely with strong than with weak consonance. D’Costa disagrees with the inferences for theology and theological method that Peters draws from strong consonance. For Peters, progress in human knowledge and understanding requires a new theological method in which inviolable theological truth claims are considered actually hypothetical and subject to ongoing “illumination” through the contribution of the sciences and theology in dialogue. Truth claims should not be determined by ecclesial fiat. For D’Costa, “Theology, on a Roman Catholic model, can make no ‘progress’ without reference to scripture, tradition, and ecclesial authority, even if in practice ‘progress’ may sometimes be hampered by the latter authority, or probably more often, wisely guided” (211).

We argue that D’Costa’s defense of strong consonance and critique of Peters is correct in one sense and incorrect in another. He is correct to the extent that, in the ongoing discernment of truth, theology must certainly utilize scripture and tradition, but it must also utilize science in dialogue with ecclesial authority. Peters would certainly accept the revelatory aspects of theology and its contribution to consonance both methodologically and in terms of content, including its need to dialogue with ecclesial authority. What he is rejecting is another model of the relationship between science and theology, namely, “*Ecclesiastical Authoritarianism*.” This authoritarianism, which perceives science as a threat, is evident throughout history but especially in the post-enlightenment period. Peters does not reject theological method *per se*. What he rejects is ecclesiastical authority “sailing past the port” of science in the same way that D’Costa would reject theology “sailing past the port” of scripture, tradition, and ecclesial authority. In light of the historical record and current ecclesiastical suspicion of the contributions of science, especially if those contributions challenge the truth-claims of magisterial moral teaching, D’Costa’s view of ecclesiastical authority as a “wise guide” on the incorporation of science into theology might be overly

optimistic. Such authority might be more a flight from a critical realism into a naïve ecclesiological realism.

On moral issues such as artificial nutrition and hydration and the permanent vegetative state patient (O'Rourke), population control and contraception (Salzman and Lawler 2008b), homosexuality and same-sex parenting (Averett, Nalavany, and Ryan; Kurdek 2005, 2006, 1995, 2004; Savin-Williams and Esterberg; Blumstein and Schwartz), and sexual anthropology, ecclesial authority has not always served as a wise-guide in incorporating the insights of science. Furthermore, the "dialogue in charity" that John Paul II proposed in *Ut unum sint* has often been lacking when it comes to openness to exploring "inviolable truths" (1995b; CDF 1990; cf. Salzman and Lawler 2009). Historically, ecclesial suspicion of the sciences and their perception as a threat gives credence to Peters' option for weak consonance (see also Pannenberg). Despite Peters and D'Costa's disagreements on whether strong consonance or weak consonance is the preferred model for the theology-science dialogue, the epistemological method for determining confirmation or disconfirmation affirmed by John Paul II, Peters, and many other theologians and scientists is critical realism.

Critical Realism in Science and Theology

Critical realism builds a bridge between science and rational theology in the process of discerning the meaning of reality and its implications for human flourishing. Critical realism is distinguished from naïve realism. Naïve realism "invokes the correspondence theory of truth to presume a literal correspondence between one's mental picture and the object to which this picture refers" (Peters 2003: 24). Critical realism, John Haught suggests, "maintains that our understanding, both scientific and religious, may be oriented toward a real world, whether the universe or God, but that precisely because the universe and God are always too colossal for the human mind to encompass, our thoughts in both science and religion are also always open to correction" (20). By definition, critical realism realizes that human understanding is evolving, partial, and revisable. This insight is what theologian-scientist Lonergan labeled an historically conscious worldview, distinguishing it from a classicist worldview.

A classicist worldview asserts that reality is static, necessary, fixed, and universal. The method utilized, anthropology formulated, and norms taught in this worldview are timeless, universal, and immutable, and the acts condemned by those norms are always so condemned without exceptions. Historical consciousness, grounded in existentialism, fundamentally challenges this view of reality. In an historically conscious worldview, reality is dynamic, evolving, changing, and particular. The method utilized, anthropology formulated, and norms taught in this worldview are contingent, particular, and changeable, and the acts condemned by those norms are morally evaluated in terms of evolving human knowledge, understanding, and circumstances. An historically conscious worldview is dependent upon critical realism; a classicist worldview is dependent upon naïve realism.

Lonergan systematically formulates a version of critical realism. He begins by distinguishing between two kinds of objects. There is the object in the immediate exterior world, the reality that is there before anyone asks "what is it?" and before anyone answers with a name "it is an apple" or "it is sexual intercourse." Such an object is "already, out, there, now, real." It is *already* for it is prior to any human attention to it; it is *out* for it is

outside human consciousness; it is *there* for it is spatially located; it is *now* for it exists and is attended to in time; it is *real* for it is bound up with human living and acting “and so must be just as real as they are” (Doran: 263). There is also the object in the inner world mediated by meaning. This object is what becomes scientifically and socially understood, judged, and decided by the answer to the question: What is it? “To this type of object we are related immediately by our questions and only mediately by the [intellectual] operations relevant to the answers” (Doran: 262). There are, in short, objects independent of any human cognitive activity and objects that are the result of human cognitive activity. The two should never be confused.

To these two meanings of the word *object* correspond two meanings of the word *objectivity*. In the world of immediacy, objectivity has one component; it is a characteristic of the object already, out, there, now, and real. In the world mediated by meaning, however, objectivity has three components. First, there is the experiential objectivity constituted by the facticity of objects that are already, out, there, now, and real. Second, there is the normative objectivity constituted by the human knowing and naming of these factual objects through attending, understanding, judging, and deciding about them. Third, there is the absolute objectivity that results from the combination of the two. Through experiential objectivity, conditions for already, out, there, now, real objectivity are fulfilled, and through normative objectivity those conditions are truly linked by an attending, understanding, judging, and deciding subject to the object they condition. “The combination yields a conditioned [object] with its conditions fulfilled and that, in knowledge, is a fact and, in reality, is a contingent being or event” (Doran: 263; see also Lonergan 1958). This same conclusion is articulated in the philosophy of science as “all facts are theory-lade” (Hanson 1958, 1971). The eminent physicist, Werner Heisenberg, formulated this position as an Uncertainty Principle: our knowledge of reality is never exclusively objective but is always mediately conditioned by the knowing subject. The theory-laden nature of facts distinguishes critical realism from naïve realism.

The tension between critical and naïve realism in theological method is well illustrated in ecclesial moral statements on human sexuality. On the one hand, the United States Catholic Bishops note, “the gift of human sexuality can be a great mystery at times” (USCCB 1997: n. 3). The acknowledgment of mystery, however, does not free theologians or the Magisterium from the ongoing task of discerning the human as sexual being and of determining the “nature,” meaning, and morality of sexuality and sexual acts in the context of human relationships. This acknowledgment of the mysterious nature of human sexuality indicates a commitment to critical realism and hypothetical consonance whereby we must be cautious and tentative in our assertions about human sexuality. On the other hand, in spite of that mysterious nature, ecclesial teaching asserts absolute norms to control sexual behavior. The disconnect between human sexuality as a great mystery and absolute sexual norms that imply a comprehensive understanding of that mystery reflects naïve realism and literal correspondence between a mental picture of human sexual nature and all sexual persons to whom this picture refers. Critical realism’s non-literal, though referential, picture allows normative claims for human sexuality to be subjected to confirmation or disconfirmation.

Pannenberg argues that theological hypotheses must be tested and verified indirectly, based on the hypotheses’ ability to facilitate increased intelligibility of our experience of

finite reality (see also Peters 1998: 24-25). In light of human experience, a number of absolute sexual norms deduced from ecclesial hypotheses on the nature of the sexual person do not seem to facilitate intelligibility in terms of understanding the mystery of human sexuality. In fact, they seem to assail much of the knowledge gained through the sciences and human experience. The disconnect between ecclesial hypotheses on the nature of the sexual person and the capacity of those hypotheses to make the mysterious nature of human sexuality more intelligible reflects the tension between naïve realism and critical realism. This tension is evident in the sexual anthropologies that ignore, reduce, or distort the contributions of science (and experience) to theological discourse about human sexuality.

The theory-laden nature of facts, both their compilation and their interpretation, poses challenges for both theologians and scientists, and distinguishes traditionalist and revisionist theologians. While many traditionalist and revisionist theologians espouse critical realism, their use of science in the process of constructing a sexual anthropology reflects different models of the theology-science interrelationship.

Sexual Anthropology and the Sciences: Traditionalists and Sexual Anthropology

New Natural Law Theory and the Basic Good of Marriage

Pope John Paul II laments the fact that theology in general has not fully utilized the sciences in exploring theological questions (1988: 377). This lament seems to apply particularly to traditionalist sexual anthropologies such as New Natural Law Theory (NNLT), developed by Germain Grisez, John Finnis, Joseph Boyle, and others (Grisez 1983, 1993; Grisez and Shaw; Finnis 1983, 1991; Grisez, Boyle, and Finnis 1987a, 1987b). According to NNLT, the person is essentially *homo rationalis*, a rational agent whose choices are, first, to actualize and, second, to realize basic or intelligible goods. NNLT's sexual anthropology is based upon the natural inclination to join man and woman and the basic good of heterosexual marriage and its fulfillment through parenthood. NNLT's argument for marriage as a basic good and the absolute norms that follow from that basic good develops in three steps. The first step defines heterosexual marriage as a basic good; the second defines marital, reproductive-type sexual acts in terms of that basic good; and the third judges all non-reproductive-type sexual acts to be non-marital and, therefore, unnatural, unreasonable, and immoral.

The sexual anthropology that arises from NNLT's understanding of basic goods can be summarized as follows. Basic goods are fundamental and incommensurable aspects of human personhood. Marriage, defined as a communion of life requiring consent and consummation, is such a basic good, actualized through marital sexual acts that have two intrinsic meanings, parenthood and friendship. There is a strict hierarchy in the relation between the biological and the personal meaning of the marital act. The biological aspect is the *sine qua non* for the personal meaning of the sexual act. Marital acts of a reproductive kind, Finnis claims, are "biologically *and thus* personally one" (1994: 1067). All non-marital sexual acts and non-reproductive acts within marriage are merely acts of personal gratification and are unnatural, unreasonable, and immoral (Finnis 1994: 1066-67). NNLT argues that the absolute norms of the Magisterium condemning artificial contraception, homosexual sex, masturbation, and reproductive technologies are grounded in the basic

good of marriage. These norms are absolute, even infallible, and cannot be changed (Grisez and Ford; Grisez 1985, 1994).

Martin Rhonheimer and the Heterosexuality of Virtue

Rhonheimer's unique contribution to a traditionalist sexual anthropology is his development of an "intimate connection" between moral virtue and the precepts of the natural law (2003: 38). His "integral/personal anthropology" is grounded in moral virtue (2000: 117), and he defines the "truth of human sexuality" as married love, "a free, mutual self-giving of indissoluble permanence between two persons of the opposite sex" (2000: 569). At the core of human sexuality is freedom, autonomy in the "nature" of the human being, to be drawn to the good of marriage. The truth of human sexuality lies necessarily between male and female and this truth is dependent, not on physical or natural functions but on the personal function of autonomous human beings in relation to one another.

Rhonheimer argues that sexual acts that stand outside this truth contradict it and are objectively immoral, not because they are unnatural "but because they contradict the (practical) truth of the natural, as it appears on the horizon of apprehension and regulation by the reason" (2000: 569-70). We know human nature, Rhonheimer argues, by the inclination towards the goods through practical reason. "The natural law . . . has its basis in an act of the practical reason; the natural law is itself this *praescriptio*, and not a known order of nature. The power of the law . . . lies not in nature but rather in a prescriptive act of the reason . . ." (2000: 12). Humans are inclined towards the good of married love, and it is the apprehension by reason of this inclination that reveals their true nature and the truth of human sexuality. This objective truth is specified by the inseparability of the unitive and procreative meanings of the sexual act, and is affirmed by the virtue of chastity, or "mastery of one's own sexual drives so as to integrate them into the order of personal love" (1989: 39). Rhonheimer's virtue-based anthropology condemns as objectively immoral all acts that contradict this truth, including homosexual acts, non-marital sexual acts, and contraceptive acts.

Pope John Paul II and Ontological Complementarity

John Paul II attempted to move the Catholic tradition beyond a procreationist model and to develop the unitive dimension of human sexuality by more fully developing personalist insights into human relationality. For John Paul, "sexuality, by means of which man and woman give themselves to one another through the acts which are proper and exclusive to spouses, is by no means something purely biological, but concerns the innermost being of the human person as such." This is said to be a sign of "a total personal self-giving" (1981: 11).

John Paul develops his philosophical personalism in conjunction with an idiosyncratic reading of scripture to construct a theological anthropology, which others have called a theology of the body (1997). This theology is grounded in a theological anthropology, developed from Genesis, of the communion between man and woman (1997: 48). Masculinity and femininity are "two 'incarnations' of the same metaphysical solitude before God and the world." These two ways of "being a body" . . . complete each other" and are "two complementary ways of being conscious of the meaning of the body" (1997: 48). It is

through the complementarity of male and female that a “communion of persons” can exist and that the two “become one flesh” (1997: 49).

Complementarity has become a foundational concept in both John Paul II’s theological anthropology and magisterial teaching on human sexuality. Complementarity intends that certain realities belong together and produce a whole that neither can produce alone. We note the following characteristics of complementarity. First, complementarity is nearly always classified along masculine and feminine lines.² Second, complementarity is often formulated as a “nuptial hermeneutics” in terms of bridegroom and bride (Ross; McCarthy). Third, in his theological anthropology John Paul II posits an “ontological complementarity” whereby men and women, though fundamentally equal and complete in themselves (1999: 655) are incomplete as a couple (1995a: 141). Sexual complementarity completes the couple in marriage and reproductive-type sexual acts by bringing the masculine and feminine biological and psychological elements together in a unified whole. All non-reproductive-type sexual acts damage this complementarity and are immoral.

Traditionalists, Sexual Anthropology, and Science: A Critique

In traditionalist anthropologies, we are struck by the reductionist use of scientific knowledge. For NNLT, the basic good of marriage is grounded in a heterogenital, biological criterion read from nature where exclusively marital, reproductive-type acts are “biologically *and thus* personally one.” For Rhonheimer, the virtue of chastity, which requires rational, responsibly conscious use of the natural sexual inclination, and its requirement for heterosexual, non-contraceptive, reproductive-type sexual acts, intrinsically links chastity to openness to procreation and heterogenitality. For John Paul II, there is only one theology of the body, heterogenitally complementary bodies open to biological reproduction. Scientific knowledge appears to be either totally lacking or used selectively in these anthropologies in at least three ways.

First, traditionalist anthropologies posit that heterosexuality is ordered or “natural” and homosexuality is “objectively disordered” (CDF 1975: n. 8; CCC: 2357) or unnatural. Such a move is problematic metaphysically and scientifically. Metaphysically, when traditionalists shift “the ground of moral debate from the inter-personal (e.g., human relationships) to the biological (e.g., objective disorder), it sounds like an admission of defeat. It’s a materialistic argument which elevates the biological to the metaphysical” (O’Sullivan: 170). Scientifically, it is a misrepresentation. Peer-reviewed scientific literature has documented same-sex sexuality in over 300 species of vertebrates as a natural component of the social system (Bagemihl). Based on such studies, James Allison challenges the claim that a homosexual orientation is objectively disordered. “There is no longer any reputable scientific evidence of any sort: psychological, biological, genetic, medical, neurological – to back up the claim” (8). There is, in fact, substantial scientific evidence to the contrary. Though homosexuals make up a very small minority of the human population, the homosexual orientation of this

² It is important to note that the distinction between biological sex (male/female) and socially constructed gender (masculine/feminine) is frequently absent in magisterial discussions of complementarity (see Ross: 56 n. 5).

population is still an intrinsic dimension of human sexual identity (Paul, *et al.*; Pronk; Pillard and Bailey; Ellis and Ebertz; Friedman and Downey; cf. Spitzer).

Second, the scientific knowledge of homosexual orientation has implications for assessing the morality of homosexual acts. What is “natural” sexual behavior for homosexuals and heterosexuals must be determined in terms of the sexual orientation of a given person and the rational meaning of the sexual act for that person in relationship. Just as it would be “unnatural” for a heterosexual person to engage in homosexual acts, so too, it would be “unnatural” for a homosexual person to engage in heterosexual acts. These acts are judged unnatural, not because of a foundational heterogenital, biological criterion but because of an inadequate rational interpretation of the sexual human person. There is no scientific evidence to substantiate the claim that homosexual acts (or non-reproductive heterosexual acts) assault human dignity and are destructive of relationships. In fact, there is substantial scientific evidence to the contrary. Michael Hartwig notes, “the overwhelming convergence of [scientific] evidence is that gay men and lesbians, as a group, display levels of health, family functioning and strength, personal development, mutuality, commitment, and, dare we say, love, similar to heterosexuals” (257).

Third, complementarity arguments, in which the biological, heterogenital sexual differences are *sine qua non* for the personal characteristics that enable male and female to be “ontologically complementary,” are not substantiated by biology. “Biology is no longer a prop,” Christine Gudorf comments, “but a problem” for such arguments. “Whether we speak of sexual orientation, sexual identity, or sex differences,” she continues, “biology and related sciences present us with complex data that cannot be reduced simply to a dimorphic, complementary human sexuality” (2008: 114). This scientific data demonstrates that male-female sex differences may frustrate personal complementarity in a relationship rather than facilitate it. Traditionalists have not gone far enough in incorporating “biology” or other scientific insights into their anthropologies. Human sexuality is influenced and shaped not only by biology but also by society, culture, religion, and experience (Lawler and Salzman 2010; Salzman and Lawler 2008b). Traditionalist sexual anthropologies tend to reduce the scientific contribution to actual or possible biological reproduction in reproductive-type sexual acts. This reductionist use of science fails to adequately consider the sexual human person.

How do NNLT, Rhonheimer, and John Paul II fit into the science-theology dialogue? Peters notes that John Paul II has “a serious interest in fostering dialogue between theology and the natural sciences” in an attempt to negotiate “a new peace between faith and reason” (2003: 17). When using science to formulate a sexual anthropology there seems to be, at best, a disconnect between scientific knowledge and doctrinal claims or, at worst, an actual misuse of scientific claims. Stephen Pope notes that, in the writings of John Paul II, scientific discoveries and information are expected to confirm what the Magisterium claims to know from scripture and the natural law (189). In terms of human sexuality and anthropology, traditionalists engage in scientific proof-texting; they accept a heterosexual, reproductive anthropology as the sole “truth” of human sexuality and then judge and interpret any scientific contributions in light of that “truth.” This approach to the theology-science dialogue seems to be a cross between strong consonance and ecclesiastical authoritarianism.

Strong consonance means virtual accord or harmony between theology and science. While traditionalist supporters of John Paul claim that their position represents strong consonance (D'Costa: 209-12), there is no accord or harmony between science and theology on a number of anthropological sexual claims, including sexual orientation, the “objective disorder” of homosexual orientation, and the damaging impact on human dignity of all non-reproductive type sexual acts. Given the history of ecclesial responses to theologians who disagree with their normative claims regarding human sexuality, ecclesiastical authoritarianism seems to dominate the theology-science relationship for traditionalists. Ecclesiastical authoritarianism seems to perceive science as a “threat,” especially when science challenges Catholic doctrine (Peters 1998: 15).

Sexual Anthropology and the Sciences: Revisionists and Sexual Anthropology

While traditionalist theologians make limited and selective use of science in constructing their theological anthropologies, revisionist theologians seek to construct a theological anthropology by integrating scientific knowledge in a way that reflects Peters' weak hypothetical consonance model.

Christine Gudorf: Body, Pleasure, and Relationship

Gudorf cautions against the absolutization of science and acknowledges its limitations for discerning meaning in human sexuality, and claims that the biological and social sciences have “revolutionized” our understanding of sexuality (1994: 7). The sciences can facilitate “restructuring Christian sexual ethics” by deepening our understanding of human sexuality (1994: 3). This proposal for a revised sexual anthropology evinces a profound appreciation for embodied sexuality and recognizes pleasure as a fundamental good within responsible, meaningful, sexual relationships and acts. This requires, however, that greater weight be given to the sciences than has been given in the past.

Traditionally, biological science posited that there are only two sexes indicated by two sets of chromosomes, either XX or XY. This dimorphic sexual classification has been used to defend a heterosexual, procreationist sexual anthropology. More recently, however, scientists have discovered that there are over 70 sex chromosomal variations containing chromosomal combinations such as XXX, XYY, and single X make-ups (Gudorf 1994: 4). This information profoundly challenges the simple dimorphic male-female distinction. Masters and Johnson pointed out years ago that sexual identification actually lies on a continuum. Contemporary biology and social science support this hypothesis and suggest a changed understanding of not only the biological dimorphism of male/female but also the relationships that embody different sexual orientations and their cultural assimilation.

The social sciences provide abundant information on human sexuality, especially on the social construction of the understanding of human sexuality and its structures, organization, and practices throughout history. They also provide data to guide our discussion of human sexuality and to evaluate its experience in scripture, in tradition, and in contemporary relationships. The analysis and interpretation of this data is crucial for the construction of a holistic sexual anthropology, which recognizes that as our scientific understanding of what it means to be a sexual person evolves and changes so do our assertions about the normative expression of sexuality that leads to human dignity and flourishing.

The United States Catholic Bishops note, “the gift of human sexuality can be a great mystery at times” (USCCB 1997: n. 3). This acknowledgment of mystery suggests caution in formulating and propagating absolute prohibitions of certain types of sexual acts and is allied to a continued commitment to further discern the mystery of human sexuality through dialogue between the sciences and theology. On the basis of dialogue that seeks to integrate knowledge gained through the sciences with scripture and tradition, Gudorf proposes expanding the traditionalist procreative, act-centered model of human sexuality. This expanded model focuses on the rational *meaning* of sexual acts for human relationships, rather than on the acts themselves. Focusing on the *meaning* of sexual acts and not on the physical acts *per se* enables Gudorf to consider the morality of homosexual and heterosexual reproductive and non-reproductive sexual acts, depending on a person’s biological makeup and cultural context.

Lisa Soule Cahill: Family, Kinship, and Gender

Gudorf’s sexual anthropology emphasizes pleasure and intimacy; Cahill asserts that these dimensions need to be complemented by a critical analysis of the “social ramifications of sex.” Cahill writes from a feminist perspective, “a commitment to equal personal respect and social power for women and men” (1996a: 1; 2007). Her method is grounded in Aristotle and Aquinas and is critically realist, inductive, experientially based, and historically conscious. She uses social sciences to dialogue with other cultures to discern substantive universal goods associated with embodied personhood, including sex, gender, marriage, parenthood, and family (1996a: 13). While she is committed to the Catholic natural law tradition, a universalist ethic grounded in human flourishing reflected in basic goods or fundamental values, Cahill differs from traditionalists on the definition of the goods and their normative implications for human relationships.

Cahill posits goods that are both universal and particular. Goods are universal as “shared framing experiences and moral common ground” (1996a: 54), indicating “shared human being in the world” (1996a: 51). Goods are particular, in that the “‘shared’ is achieved not beyond or over against particularity but in and through it” (1996a: 55). Particularity is discerned through social analysis and intercultural dialectic (Nussbaum: 4; Cahill 1996a: 55-61; 1996b: 195). While the emphasis on marriage and family as a universal good is shared with traditionalists, Cahill provides an interpersonal model of marriage that particularizes this good and goes beyond traditionalists’ emphasis on biologism and procreationism over relationship. She espouses an interpersonal sexual anthropological model, but argues that it “should be placed in a deeper and more nuanced social context, with better attention both to the familial ramifications of sexual partnerships, and to differences and similarities in cross-cultural experiences of sex, gender, and family” (1996a: 10). This cultural and historically conscious sensitivity fundamentally distinguishes Cahill’s method and definition of the goods of marriage and family from traditionalist methods and definitions. She highlights the importance of children as an aspect of that good, but also emphasizes the need to see marriage and family as a complex interrelationship between relational, sexual, and social dimensions. In light of this complexity and totality, some absolute magisterial norms, such as the prohibition of artificial birth control, need to be refined and redefined.

Margaret Farley: Just and Loving Sexual Acts

Farley emphasizes that the sciences or “secular disciplines” and human experience have contributed to our understanding of human sexuality by correcting past mistakes and by generating new insights that clarify sexual ethics and call into question long-taken-for-granted but unverifiable conclusions. Although the secular disciplines “give us a kind of ‘access’ to reality,” they do require a sort of “exegesis” and rational interpretation to discern their relevance to sexual anthropology and sexual ethics (2008: 188-89). This exegesis should be carried out through responsible and respectful dialogue that involves diverse voices seeking to discern and formulate a credible sexual anthropology. Diversity must include gender, sex, sexual orientation, socio-economic, ethnic, cultural and historical dimensions. To explore diversity, Farley employs the biological and the social sciences.

First, the biological sciences indicate that there are chromosomal, hormonal, and anatomical differences among human beings classified as male and female. One should be aware, however, that both biological studies on human sexual differentiation and the use of those studies in constructing “sex-types” are subject to cultural interpretation and bias. Biological studies can be helpful for informing an anthropology, but one “should not expect more from them than they can deliver” (Farley 2008: 148). Farley’s cautionary note reflects the position many scholars espouse – a non-reducible hierarchy in scientific disciplines. This non-reducible hierarchy begins with the hard-sciences and moves upwards to the soft sciences and the speculative sciences. On the one hand, lower level sciences place “constraints” on upper level sciences; on the other hand, they allow for authentic “emergence” of upper-level laws, processes, and properties (Russell and Wegter-McNelly 2007: 516). Many scholars locate theology at the top of the scientific hierarchy since it attempts to integrate the entirety of knowledge, but they also insist that it must be “maximally constrained” by the other scientific disciplines (Russell and Wegter-McNelly 2007: 516).

Second, Farley uses the social sciences to explore cross-cultural and interreligious understandings of human sexuality “in which sexuality gains its meaning in profoundly different ways of living and believing” (2008: 103). She cautions, however, against drawing strong conclusions from these investigations. The conclusion she does draw recognizes “the very plasticity of human sexuality, its susceptibility to different meanings and expressive forms” (2008: 104). Such sociological studies “belong to the map of human sexual meanings” (2008: 105).

Though she recognizes the importance of biological, sociological, and anthropological insights, which alert theologians to the multifaceted historical, cultural, and religious understandings and expressions of human sexuality, Farley rejects a reductionist, absolutist, “one-size-fits-all” anthropology and normativity for human sexuality. Instead, relying upon the sciences and experience, she constructs a complex vision of the sexual person and proposes justice-in-love as a principled approach to determine “when sexuality and its expressions are appropriate in human relationships” (2008: 311). She asserts that for sexual acts to facilitate human flourishing, they must be just and loving. Such acts go far beyond the narrow and limited normative spectrum of the traditionalists based on a reproductive anthropology. “Today we also know that the possibilities of mutuality exist for many forms

of relationship – whether heterosexual or gay, whether with genital sex or the multiple other ways of embodying our desires and our loves” (2008: 221).

Todd Salzman and Michael Lawler: Holistic Complementarity and the Human Person Adequately Considered

In an effort to move a seemingly stalled Catholic sexual anthropology forward, Salzman and Lawler utilize both scientific and theological resources, employing biological and social sciences along with scripture, tradition, and human experience to do two things. First, they engage dialogically, critically, and historically conscious normative Catholic principles guiding sexual morality and reigning traditionalist and revisionist analyses of those principles in order to, second, construct a renewed Catholic sexual anthropology and to formulate a new foundational principle for sexual ethics, namely, holistic complementarity (Salzman and Lawler 2008a). They appropriate to themselves John Paul II’s judgment that dialogue “is rooted in the nature and dignity of the human person. . . [I]t is an indispensable step along the path toward human self-realization, the self-realization of each individual and of every human community” (1995b: n. 28). Following the direction mapped out by that papal judgment, Salzman and Lawler enter into dialogue with both traditionalist and revisionist positions on normative sexual morality in order to articulate a renewed and critically realist Catholic anthropology.

The biological sciences challenge the rigid magisterial dimorphism of human sexuality and complementarity and indicate the naturalness of heterosexual, homosexual, and bisexual orientations, and experience shows that a variety of sexual expressions facilitate human flourishing and the love of God, neighbor, and self (Farley 1983: 99-100). The social sciences provide no data to support the claim, made again recently in the United States Catholic Bishops’ letter on Marriage, that non-reproductive type sexual acts, heterosexual or homosexual, are destructive of human dignity (USCCB 2009: 19). Indeed, they supply a large volume of data to support the contrary claim (Kurdek 2005: 251; 2006; 1995; 2004; Savin-Williams and Esterberg; Blumstein and Schwartz). Integrating scientific studies with scripture and tradition, Salzman and Lawler seek to renew the traditionalist, primarily procreationist, Catholic sexual anthropology and complement it with a more adequately considered sexual anthropology that prioritizes the unitive over the procreative meaning of human sexuality. They develop a holistic complementarity that includes orientation, personal, and biological complementarity, and the integration and manifestation of all three in just, loving, committed sexual acts that promote human flourishing and facilitate a person’s ability to love God, neighbor, and self in a more personally profound and holy way (Salzman and Lawler 2008a: 124-61).

Joseph Selling: Meanings of Human Sexuality

In addition to his focus on historical studies tracing the “meanings” of human sexuality throughout Christian tradition, Selling emphasizes the need to complement tradition with other sources of moral knowledge – namely experience, science, and scripture – to construct a personalist, holistic meaning of human sexuality (1988, 1990a, 1990b, 1991, 1998, 2001). Regarding human experience, Selling notes that sexuality is not reducible to physical or biological meaning. Rather, meaning “is the result of personal-social construction that is

attributed to experience uniquely by human beings” (1998: 32). Rationally discerning meaning is always in process historically and contextually. Selling has recourse to various scientific disciplines, which are essential complements in this process of discernment. He approvingly cites *Persona humana*'s statement on the findings of the sciences:

According to contemporary scientific research, the human person is so profoundly affected by sexuality that it must be considered as one of the factors which give to each individual's life the principle traits that distinguish it . . . make that person a man or a woman, and thereby largely condition his or her progress towards maturity and insertion into society (CDF 1975: n. 1).

Reviewing the findings of sexologists, psychiatrists (Dominian: 12-15), and sociologists on the meanings of human sexuality, Selling concludes that a holistic understanding of those meanings include, among other dimensions, “not only intimacy (‘unitive’) and fertility (‘procreative’) but also pleasure, recreation (play), relief, affirmation, receptivity, self-acceptance, forgiveness, reconciliation, gratitude and, of course, respect.” These meanings extend beyond the experience of the couple-in-relationship “to the social, institutional, political and religious meanings that can only be appreciated in those respective contexts” (1998: 35). While scripture does not give us a blueprint for a timeless meaning of human sexuality, it “always begins with a relational context and is only concerned with specific sexual behavior insofar as it has a bearing on the integrity of individual and social relationships” (1998: 36).

Combined, the sources of moral knowledge – scripture, tradition, reason (sciences), and experience – point to relationality as “the primary characteristic of human sexuality.” If relationality is the primary characteristic of human sexuality in all its meanings, and we accept that it is the primary characteristic, then, Selling suggests, perhaps we should shift the focus of the discussion of appropriate sexual behavior from the virtue of temperance, which has traditionally served as the guiding virtue in sexual behavior, to the virtue of justice, which “respects persons and renders what is their due.” Sexual justice and the objective criteria for discerning whether or not respecting and rendering persons-in-relationship their due have been realized, must be based on “a total vision of ‘the human person integrally and adequately considered’” (Selling 1998: 37). This total vision is not reducible to the biological or physical but is discerned through the meanings of sexual acts for relationality.

Revisionists, Anthropology, and Science

All the revisionist theological anthropologies we explored above have different nuances, but they share four things in common. First, they view the traditionalist, procreationist sexual anthropology as too narrow and reductionist. Second, they engage more comprehensively the sciences and human experience, especially as this is revealed through the social sciences, and seek both to facilitate dialogue between theology and science and to integrate scientific knowledge into a comprehensive theological anthropology. This project is ongoing and evolving and requires care and humility in making normative assertions. Revisionists fully affirm John Paul II's invitation that theology and science must search for truth through “critical openness and interchange” and that this interchange “should not only continue, but also grow and deepen in its quality and scope” (John Paul II 1988: 376). This process of dialogue will require openness to exploring positions that may challenge a

traditional anthropology and the norms that are deduced from it. Third, revisionists manifest a degree of tentativeness towards the contributions of both the sciences and theology and insist on the need for ongoing dialogue and discernment in constructing a sexual anthropology. Fourth, this tentativeness demands that all hypotheses be subjected to confirmation and/or disconfirmation, as in Peters' weak hypothetical consonance (Peters 1998: 18).

Future Directions

Theology

How can Catholic theology, in dialogue with science, move forward in constructing a holistic sexual anthropology? In the space remaining, we sketch in outline some important considerations. First, more theologians "should be sufficiently well versed in the sciences to make authentic and creative use of the resources that the best-established theories may offer them" (John Paul II 1988: 377). Second, for authentic dialogue to take place, the Magisterium must include in the dialogue both "safe" theologians, those whose use of science supports ecclesial teachings, and "unsafe" theologians, those whose use of science may challenge ecclesial teachings. Current magisterial practice limits consultation to only safe theologians, a practice that implicitly endorses one school of theology over others and provides implicit ecclesial sanction for that school's theological method and sexual anthropology. The result is harmful in two ways. Debates are frequently settled by the exercise of authority rather than by rational argument and constructive dialogue; responses from theologians who have not been consulted is sometimes critical, which then permits them to be labeled, unfairly, as dissenters (Salzman and Lawler 2009).

Third, discerning the impact of science on theological doctrine may reveal an ecclesiology guiding the discernment process. Yves Congar, arguably the greatest Catholic ecclesologist of the twentieth century, accurately describes two attitudes required of Catholics on the basis of two distinct theological models of church. Obedience to church authority is required when the church is modeled as a society subject to monarchical authority, and dialogue and consensus are required when the church is modeled as a communion (Congar). A theologian's ecclesiology does not necessarily determine the scientific theories and data she or he will select to construct an anthropology, but it can influence the selection of theories, data, and their interpretation. Ecclesiology, therefore, must be part of the science-theology dialogue. Fourth, human experience, especially as this is revealed through the social sciences, must be given due consideration in analyzing any doctrinal teaching. While experience alone is never determinative of doctrine, history shows that it has often influenced changes in doctrine (Noonan 1993, 2005). *Sensus fidelium*, an essential aspect of Catholic tradition and a source of moral knowledge, is often manifested in and through experience documented by the social sciences.

Fifth, there must be consistency in the use of science to inform church teaching. In *Caritas in veritate*, Pope Benedict XVI affirms the importance of scientific contributions to discern the impact of economics on peoples and the environment and invites creative responses in light of those contributions (2009: n. 31-32). Creative responses based on scientific contributions have long been a hallmark of Catholic social ethics, but not of

Catholic sexual ethics. Sixth, the use of science should be consistent *and* accurate. The CDF argues against same-sex unions based on the premise that “allowing children to be adopted by persons living in [same-sex] unions would actually mean doing violence to these children” (2003: n. 7). The CDF provides no scientific evidence, here or elsewhere, to substantiate this claim. The social sciences, however, provide abundant evidence to the contrary. Already in 1995, Charlotte Patterson summarized the evidence in a 20-year retrospective: “There is no evidence to suggest that lesbians and gay men are unfit to be parents or that psychosocial [including sexual] development among children of gay men or lesbians is compromised in any respect relative to that of heterosexual parents” (1995; see also Patterson, Fulcher, and Wainright; Mattingly and Bozick; Crawford and Zamboni; Lambert). Anne Brewaeys’ 1997 study in the Netherlands (Brewaeys, Ponjaert, and Van Hall) and Raymond Chan’s 1998 study in the United States (Chan, Raboy, and Patterson) confirm that there was no reason to be concerned about the psychological development of children raised by lesbian mothers. Tasker and Golombok (1997) and Bailey and Dawood (1998) reported from Britain and North America respectively that the vast majority of children of homosexual parents grow up to be heterosexual young adults. On the basis of the scientific evidence, the American Academy of Pediatrics judged in 2002 that children of gay parents “fare as well in emotional, cognitive, social, and sexual functioning as do children whose parents are heterosexual.” The American Psychological Association rendered the same judgment in 2004. In 2009, a major study by Paige Averett demonstrated that there is no significant difference in emotional problems experienced by children adopted by heterosexual, gay, or lesbian parents, and that the children of gay and lesbian parents had strength levels equal to or exceeding scale norms. Gay and lesbian parents also fell into the desirable range of the Parent-as-Teacher Inventory (Averett, Nalavany, and Ryan).

Finally, James Gustafson highlights three questions that each theologian must address when using the empirical sciences in theological discourse. First, “What data and concepts are relevant to the moral issue under discussion?” (1994: 170). While such determinations are often implicit, they should be formulated and justified explicitly. Second, “What interpretation of a field should be accepted? And on what grounds?” (1994: 171). This question requires clear criteria to evaluate methods and knowledge claims. Third, “How does the moralist deal with the value biases of the studies that he [or she] uses?” (1994: 171). “All facts are theory-laden” not only for scientists but also for theologians. The challenge is to be honest about the values, principles, and biases of both the scientific data selected and the theologian who selects them, and to critically evaluate the anthropological and normative implications of those biases for any moral norm.

Science

In its pursuit of truth, science can facilitate dialogue, first, by suspending the traditional suspicions surrounding religious belief. Second, science can promote funding that not only furthers political and economic agendas (e.g., the military complex or drugs that only benefit wealthy nations) but also promotes human dignity among the powerless and oppressed. Third, scientists and theologians, recognizing that “all facts are theory-laden,” should seek to uncover and suspend biases that distort research methods and data results (Roughgarden 2004, 2010). Fourth, researchers must have freedom from coercion to have research findings

conform to the presuppositions or desires of people who can reward or punish the researcher's work. Fifth, private and public funding for scientific research should be flexible in implementing research protocols for religious institutions. For example, tensions exist for clinical investigators in Catholic medical institutions when research protocols for externally funded research projects require subjects to use artificial contraception as a requisite for participation. The Food and Drug Administration recognizes abstinence as a legitimate form of birth control when testing drugs that have potential teratogenic effects that may cause severe birth defects, but some pharmaceutical companies often require additional forms of contraception that are proscribed by magisterial teaching (Rendell). This places researchers in Catholic institutions at a severe disadvantage for funded research, which has institutional ramifications. Such conflicts require dialogue and compromise both on the side of funding organizations pursuing scientific knowledge and on the side of religious institutions providing the researchers.

Interrelationship between Theology and Science

On the interrelationship between theology and science, John Paul II notes, "the unprecedented opportunity we have today is for a common interactive relationship in which each discipline retains its integrity and yet is radically open to the discoveries and insights of the other" (1988: 377). Mooney notes, and addresses, many of the obstacles to realizing this radical openness, and posits a focus that will make the interrelationship meaningful and productive for both participants (28). Theology must recognize the impact of matter and culture on human understanding and self-transcendence; science must recognize the complexity of the human person that transcends the merely material. Exploring the interrelationship between the transcendent and material, soul and body, requires ongoing dialogue, in which, John Paul II asserts, "science can purify religion from error and superstition [and] religion can purify science from idolatry and false absolutes" (1988: 378). We add that science can also purify religion from false absolutes. Traditionalist absolute claims about human sexuality, for instance, need to be parsed in dialogue with the data of the biological and social sciences to investigate their truth or falsity.

Conclusion

Even though Pope John Paul II and traditionalists claim to rely on data from the sciences and experience to construct a sexual anthropology and justify absolute norms (see John Paul II 1981: n. 32), they proceed from a misdefined, and therefore inadequate, sexual anthropology to judge the validity of what science and experience discover concerning human sexuality. In effect, the truth-claims of magisterial statements on human sexuality and the epistemology used to justify those claims are used to judge the truth-claims and epistemologies of other types of discourse, science, and experience, without any attempt at dialogue with scientific conclusions that challenge magisterial statements. Such an approach risks committing the "fallacy of epistemological imperialism," that is, "seeking to nullify another discourse from within one's own" (Johnson: 15). True development and insight into human understanding requires authentic dialogue between theology and science (Lonergan 1997). Pope Benedict's statement on the moral use of condoms for male prostitutes to prevent the spread of HIV may signal a positive move towards such a dialogue that recognizes the complexity of human sexuality and the moral norms guiding sexual behavior

(2010: 117-19; see *Commonweal*). We hope that such authentic dialogue might become normative, rather than exceptional, in the theological-scientific evaluation of not only what *is* but also what *ought to be*, and might ultimately lead to the construction of a credible and coherent Catholic sexual anthropology.

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