Divine Action and Divine Transcendence

with Christopher C. Knight, "Theistic Naturalism and 'Special' Divine Providence"; Robert Larmer, "Divine Agency and the Principle of the Conservation of Energy"; Edward M. Hogan, "John Polkinghorne and Bernard Lonergan on the Scientific Status of Theology"; and Daniel P. Wisniewski, "Love in the 'Unidiverse': A Salesian Perspective on Chance"

JOHN POLKINGHORNE AND BERNARD LONERGAN ON THE SCIENTIFIC STATUS OF THEOLOGY

by Edward M. Hogan

Abstract. On the basis of his acquaintance with theoretical elementary particle physics, and following the lead of Thomas Torrance, John Polkinghorne maintains that the data upon which a science is based, and the method by which it treats those data, must respect the idiosyncratic nature of the object with which the science is concerned. Polkinghorne calls this the "accommodation" (or "conformity") of a discipline to its object. The question then arises: What should we expect religious experience and theological method to be like if they are accommodated to the idiosyncratic nature of God? Polkinghorne's methodological program is typical of postcritical positions in the theology-science dialogue in holding that the fiduciary element in theological method is simply a species of the fiduciary element that is a de facto part of all knowing—in other words, theological method does not differ in fundamental kind from the methods of the natural sciences. But this program may contain the seeds of an alienation of theological method from the transcendence of God similar to the double self-alienation of theology described by Michael Buckley in *At the Origins of Modern Atheism*. I contend that something like Bernard Lonergan's position on how the method of faith seeking understanding is related to the methods of the natural sciences is exactly the sort of thing that one should expect on the supposition of Polkinghorne's principle of accommodation, at least if the God who is the object of theological science is transcendent. The way in which the divine differs from all other objects ought to be disclosed or reflected in religious experience and theological method. Polkinghorne charts the course for an accommodated theology, but it seems to be Lonergan who is more intent on following it.

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Charting a Course for the Theology-Science Dialogue

Gregory Peterson has suggested that the theology-science dialogue, insofar as it concerns itself with methodological issues, stands at a crossroads today: "If we gauge correctly, there is a real chance for public attitudes concerning religion and science to move away from the still dominant conflict model to a more mature understanding of the claims and domains of each. If we do not gauge correctly, then the dialogue faces the prospect of renewed public and professional obscurity" (Peterson 2000, 23). In an attempt to contribute toward gauging the present moment correctly I want to present and bring into conversation aspects of the work of two writers: British Anglican physicist-turned-theologian John Polkinghorne and Canadian Jesuit philosopher Bernard Lonergan.

Polkinghorne has been called a first-generation scholar in the renewed dialogue between science and theology, and his twofold career makes him a living icon of that renewal. Lonergan belongs squarely to the Roman Catholic tradition within which Pope John Paul II issued an appeal "to establish the correct link between the two orders of knowledge," a link that would allow "faith and philosophy [to] recover the profound unity which allows them to stand in harmony with their nature without compromising their mutual autonomy" (1998, 35, 48).

To set the stage for a conversation between these two thinkers, I would first recall Aristotle's famous remark that one ought no more to expect certainty from a historian than one would be satisfied with probability from a mathematician. Mathematics has changed a great deal since Aristotle's time, but there is an enduringly important insight in his comment. For his own part, Polkinghorne calls this insight the "accommodation" (and sometimes the "conformity") of a discipline to its object). Accommodation is a central feature of his philosophy of science as well as his defense of theology as a scientific discipline according to the standards of that philosophy. Polkinghorne's generalized version of Aristotle's statement says that the data upon which a science is based, and the method by which it treats those data, must respect the nature of the object with which the science is concerned.

Polkinghorne claims that accommodation is a crucial feature in an adequate philosophy of science, and he defends the idea on the basis of his extensive personal acquaintance with theoretical elementary particle physics. He then applies the concept to theology, asking, in effect: If the data upon which elementary particle physics is based, and the method by which

it treats those data, both are and must be accommodated to the idiosyncratic nature of elementary particles, what should we expect religious experience and theological method to be like if they must be accommodated to the idiosyncratic nature of God?

As a question, it seems to me that this is a very helpful way to frame the issue concerning the relationship between theology and science. In terms of an answer, the following two possibilities provide an equally helpful initial framework.

In the first place, if the data and method of every discipline are (and must be) accommodated to the nature of the object(s) that the discipline investigates, if theology takes God as its object, and if God, as transcendent, differs in fundamental kind rather than degree from all other objects, then religious experience and theological method should differ in kind rather than degree from all other experiences and methods, including those involved in the natural sciences. To put the matter the other way, if both religious experience and theological method differ in kind rather than degree from other experiences and methods, that would constitute a disclosure of God's transcendence through them.

On the other hand, if the data and method of every discipline are (and must be) accommodated to the nature of the object that the discipline investigates, if theology takes God as its object, and if theological method belongs to one "spectrum" of rational, empirical disciplines that differ in degree rather than in fundamental kind from each other, it stands to reason that God belongs to a spectrum of beings that differ in degree rather than kind from each other, and religious experience differs in degree rather than kind from other experiences. To state the matter the other way again, if theological method and/or religious experience differ in degree rather than kind from other methods and experiences, that constitutes a disclosure that God differs in degree rather than kind from other objects; that is to say, God is not transcendent.

In either case, the notion of accommodation sets up a connection in which the relationships between religious and scientific data, theological and scientific method, and God and the world mirror each another. For the present, I focus on the methodological aspect of this nexus. It seems to me that Polkinghorne's notion of accommodation can serve as an excellent introduction to a coherent and potentially important position on the relationship between Christian theology and the natural sciences. But Lonergan's position on the nature of theological method[1] may better follow the course charted by that notion than Polkinghorne's own work does, at least if one believes (as Polkinghorne, among others, does) that God is transcendent.

Case Studies in Theological Method: Polkinghorne and Lonergan

There are two ways to introduce the authors' positions on the methodological aspect of the relationship between theology and science. First, one may use Polkinghorne's terms. For Polkinghorne, theology, like the natural sciences, employs a fundamentally, normatively bottom-up method, although he concedes that a top-down element sometimes occurs within that context as a matter of fact.[2] Lonergan's notion of theological method could qualify, from Polkinghorne's perspective, as either fundamentally, normatively bottom-up with a de facto top-down element or fundamentally, normatively top-down with a de facto bottom-up element, depending on which phase of the unfolding of that method one is dealing with.

Alternatively, one may use terms that avoid the building-block metaphor, with its foundationalist/antifoundationalist implications, and say that, for Polkinghorne, theology's method is *isomorphic with* the method employed by the natural sciences (as he conceives it). For Lonergan, in its first phase theology employs a method that is *isomorphic with* the structure of empirical knowing (as he conceives it). In its second phase, however, theology employs a method that is *not isomorphic with* the structure of empirical knowing (as he conceives it); in fact, it is isomorphic with the exact reverse of that structure.

There are really two questions here. The first is whether each author thinks that theology is like the natural sciences in its method. This can be answered with a simple yes or no, and that answer is, ultimately, the issue on which I want to compare Polkinghorne and Lonergan. But there is a prior question: How does each conceive of the method of the natural sciences? If a comparison of their answers to the first question is to be more than nominal, some answer to the second question is required; radical opposition in their philosophies of science would render any comparison between their conceptions of the theology-science relationship meaningless. I believe that their philosophies of science are similar enough to make a comparison of their positions on the theology-science relation meaningful and a conversation between them helpful. But here I attempt only to sketch the position of each author on the theology-science relation in such a way as to suggest the possibility of a fruitful comparison of their philosophies of science, because a full treatment of the latter topic would require a small book unto itself. This inevitably will be unsatisfactory in some respects. But a comparison of their conceptions of the theology-science relationship is important enough to sketch out, and so I leave the completion of the groundwork for another time.

Polkinghorne's Bottom-Up Method with Top-Down Elements. A few introductory comments may help to situate Polkinghorne's understanding

of theology in general before I describe his methodological position in particular. Polkinghorne thinks that there are multiple levels to the world—physical, biological, psychological, aesthetic, moral, and religious (the encounter with the Infinite)—and that our search for understanding embraces (and should be allowed, especially in universities, to embrace) all of those levels (2000, chap. 1). He says that theology has two roles to play vis-à-vis this multileveled world and its corresponding spectrum of disciplines:

1. Theology is a first-order investigation into "the religious dimension of personal experience" (2000, 19). As a first-order discipline, theology "seeks to evaluate the validity of the claims being made in this domain of human experience and to understand the significance that they might carry" (p. 27). With respect to its nature as a first-order discipline, Polkinghorne says: "Theologians, as much as scientists, are concerned with trying to discern and understand the nature of reality. They seek to conform their thinking to the way things are" (p. 29).

2. Theology also functions as a second-order discipline whose task is to reflect not only on the religious level of the way things are but also "upon the whole of human knowledge" (p. 20). As a second-order discipline, theology seeks "the integration of these partial perspectives, afforded by the first-order disciplines, into a single consistent and coherent account of reality" (p. 20). Although multilayered, the world is, after all, one, and the task of theological metaphysics is to see that human knowledge mirrors this multilayered unity.

Polkinghorne's methodological reflections, on which I focus, are really concerned with theology as a first-order discipline. It ought to be noted from the outset that because theology as a first-order discipline seeks to accommodate its investigation to the way things are within a domain of reality that differs from the domains with which the natural sciences are concerned, there will be some important methodological differences between theology and the natural sciences. The most important of these have to do with the fact that in the sciences the investigator transcends the subject under investigation while in theology the Subject under investigation transcends the investigator (2000, 38–39).[3]

Still, Polkinghorne is generally of the mind that there is a basic similarity between theology (as a first-order discipline) and the natural sciences when it comes to methodological issues. His notion that both theology and the natural sciences are fundamentally bottom-up disciplines, though they admit of top-down components, is a way of summarizing his position on what the method of theology is, in relation to science, and how that relation needs to be represented in order for theology to be credible in the contemporary context.[4]

In order to understand what he means by this, one must know what he thinks constitutes the bottom and what constitutes the top. He provides a clear sense of his meaning when he writes:

It is by seeking to start with the phenomena that give rise to the theories, that I characterize myself as a bottom-up thinker. It is a natural stance for a scientist to adopt. We have learned so often in our exploration of the physical world that "evident general principles" are neither so evident nor so general as one might first have supposed. Many theologians are instinctively top-down thinkers. I do not deny a role for such ambitious intellectual effort. I am merely wary of it, and wish to temper its grand generality with the questionings that arise from the consideration of particularity. (1994, 4–5)

To put it plainly, the bottom is experience and the top is theory; the bottom is data and the top is idea.

The primacy of experience in its interaction with theory is anything but naive in Polkinghorne's philosophy of science.[5] His position is that of a realist, but it is a *critical* brand of realism for at least the following two reasons. First, he contends that the relationship between facts and theories in science is not so straightforward as a simple bottom-up foundationalism. He writes that

we have grown more sophisticated and we now know that the concept of "fact" is far from being unproblematic. Scientific facts are not uncontroversial matters, like electronic counter readings or marks on photographic plates, but they are interpretations which are themselves embedded deep in current theoretical understanding. . . . There is a symbiosis between theory and experiment; we cannot survey the world without donning "spectacles behind the eyes." (1994, 34)

Theories are not mere representations of experimental results, they are interpretations of those results; and the relationship between theory and data in an interpretation is one of symbiosis.[6] Because he thinks that interpretation is an essential part of the scientific enterprise, Polkinghorne's conception of scientific method, while still fundamentally bottom-up, is anything but simply monodirectional.

Second, scientists' openness to the correction of theories in the light of evidence must not be exaggerated. It is true that scientists sometimes revise their interpretation in the light of new observations, as a bottom-up method requires. But it is equally true, according to him, that they sometimes conserve their interpretations in spite of apparently contradictory evidence—that is, sometimes they employ a top-down method, giving priority to theories over data.

At the more humdrum level of detailed agreement with experiment, it is a commonplace that seldom has a scientific theory fitted perfectly all the claimed results with which it had to deal. . . . It certainly would not have been a fruitful strategy in science to throw in the towel at the first encounter with problematic data. A certain degree of courageous persistence, open to the possibility of correction but not prone to the hasty dismantling of theories well-winnowed by experience, has been the way in which further understanding has more frequently been achieved. (1991, 50)

One can have bad data or misinterpreted data as well as bad theories, and no algorithm can indicate for any given case whether it is the data or the

theory that needs revising. The scientist must use his own best judgment in deciding when to persist in his commitment to a particular theory and when to abandon that theory.[7] Following Michael Polanyi, Polkinghorne calls this fact of judgment "personal knowledge," and he contends that it is an essential part of the scientific enterprise. The point is that his conception of scientific method as bottom-up is sufficiently informed by postmodern currents so as not to be a naive, monodirectional foundationalism. If scientific method is fundamentally bottom-up, in his mind, it also has its symbiotic and top-down elements in interpretation and personal knowledge, respectively.

Shifting to his consideration of theology, Polkinghorne is but little concerned to show the bare fact that interpretation and commitment are essential parts of its method—that is, that theological method is not purely a bottom-up enterprise. As far as he is concerned, those who reflect on theological method (as well as those who are not particularly reflective) have "long known that one must believe in order to understand (commitment to a tradition is essential, for there is no neutral Archimedean point of detachment from which judgment can be made; insight is gained only through participation)" (1998, 115). Because this fact is readily granted by the audience he thinks he is writing for, Polkinghorne's strategy is not to defend the symbiotic and top-down elements of theology but to point out that these are actually mirrored in the natural sciences, where they exist as one moment within a method that remains, on the whole, bottom-up. If the natural sciences have such a structure, there is no a priori reason why a "scientific" theology might not, too.

Polkinghorne maintains that, like science, theology always involves interpretation and sometimes involves the conservation of theories in the face of contradictory evidence; theology has its symbiotic and top-down elements. But, he maintains, like science, theology also sometimes involves the development of theories in the light of further evidence—it also has its bottom-up elements. Concerning the matter of taking a bottom-up approach to its subject, Polkinghorne says that the method of theology "bears some analogy to science's stance in its exploration of the physical world. That stance is characterized by a willingness to allow the phenomena to set the terms of attainable understanding, a refusal to impose an a priori notion of what is reasonable" (1988, 90). Here, as ever, Polkinghorne has in mind the story of quantum mechanics as he understands it—the story of the accommodation of theory to discovered reality. Shifting to an understanding of theological method on the analogy of quantum mechanics, Polkinghorne often returns to a favorite quote from Thomas Torrance: "We cannot begin by forming independently a theory of how God is knowable. . . . How God can be known must be determined from first to last by the way in which he actually is known" (Polkinghorne 1998, 116; 1994, 33; 1991, 16).

Polkinghorne would concede that theology is not always *practiced* as a bottom-up discipline, but he sees it as perfectly capable of being practiced in that mode. The application of the bottom-up methodology will come, he thinks, when theologians spend less time stating what the doctrines are, working out the implications of the doctrines, and pondering the relations between doctrines and more time accumulating evidence and pondering whether the evidence is sufficient for the claims made by doctrines. "The fundamental question to be asked about any theology statement is: What is the evidence that makes you think this might be true" (1994, 3–4).

The program executed in his Gifford Lectures is meant to provide a glimpse of what such a theology would look like. Polkinghorne provides a clear window into his ultimate goal when he says, by way of introduction, "What I can aspire to in these lectures is a candid and honest attempt to explore the foundations of Christian belief and to try to offer an explanation for that belief comparable to the kind of explanation one might offer of one's conviction that matter is composed of quarks and gluons and electrons" (1994, 6). He cites Chalcedonian Christology as an especially clear example of the development of doctrines according to a bottom-up methodology (see Polkinghorne 1994, chap. 7; 1998, chap. 2).

By way of summary, I would say that Polkinghorne moves to establish the basic methodological similarity of theology and science against the background of a fairly common caricature of the nature of each. According to this view science has a rational, or bottom-up, structure; it tests its theories by evidence and is open to falsification of those theories. Theology has a fiduciary, or top-down, structure; it condemns the believer "to intellectual imprisonment within the limits of an opinion held on a priori grounds, to which he will cling whatever the facts might be to the contrary" (1994, 6).

Polkinghorne's strategy in his argument for such methodological similarity is to affirm this popularized version of Karl Popper's thesis on the demarcation of science from nonscience but to affirm it as a perfect half-truth. To its rational (bottom-up) structure of science and fiduciary (top-down) structure of theology he adds his contention that there is a rational structure in theology and a fiduciary structure in science. What the popular caricature holds to be dividing points between the methods of theology and science Polkinghorne turns into unifying points.[8]

Lonergan's Functionally Specialized Theological Method in Relation to Generalized Empirical Method. As with Polkinghorne, some introductory comments about Lonergan's understanding of theology in general will help situate the treatment of his methodological position in particular. For Lonergan, "A theology mediates between a cultural matrix and the significance and role of a religion in that matrix" (1990, xi). If culture and religion were static, a theology could be a permanent achievement. But culture is in fact

changing, so the mediating task of theology must be an ongoing process.[9] Lonergan's concern is with the method by which theology works and can continue to work in its mediating role as culture (and religion) changes. In treating this method, Lonergan is "not concerned with the objects that theologians expound, but with the [cognitive] operations that theologians perform" as they fulfill their mediating function (1990, xii). To meet this concern, Lonergan proposes to move through the sciences to a "transcendental method," a method that would be "a basic pattern of operations employed in every cognitional enterprise" from physics and chemistry to philosophy and theology (1990, 4). Each individual field would develop its own "special classes and combinations of operations," but these would be further specifications of "the same basic operations in the same basic relations as are found in other special methods" (1990, 23). Part II of *Method in Theology* is devoted to working out the special developments that belong to theological method. Like Polkinghorne, Lonergan is proposing some form of a methodological unity of all disciplines. He states plainly that "transcendental method offers a key to unified science" (1990, 24).

Moreover, his proposal, like Polkinghorne's, also leaves room for the accommodation of each discipline to its own material. One key component of that accommodation is the distinction that Lonergan draws between general and special theological categories. "General theological categories regard objects that come within the purview of other disciplines as well as theology. Special categories regard the objects proper to theology" (1990, 282). General categories are aligned with the cultural matrix within which theology is being done; special categories are aligned with the religion that theology intends to mediate to the culture. In scholastic theology, for example, general theological categories were derived from the metaphysical psychology of Aristotle and centered on potencies, habits, and acts; special theological categories were necessitated by the reality of grace and took the form of a distinction between natural and supernatural potencies, habits, and acts. For Lonergan, transcendental method replaces the metaphysical psychology of Aristotle as the principal basis of general categories, and the dynamic reality of unrestricted loving that he calls religious experience[10] replaces sanctifying grace as the principal basis of special theological categories (1990, 288–89; see 285–91 for a more complete treatment that includes additional bases of general and special categories).

With a general introduction to Lonergan's notion of theology in place, I turn to the description of his methodological position in particular. As was true with Polkinghorne, Lonergan's position on the relationship between theology and science makes no sense apart from his position on the nature of an empirical science. One would have to reproduce the first half of his *Insight* (1978) to present the full scope of that position, but I intend only to sketch enough of it to show that there is a rough but generally accurate correspondence between Lonergan's "generalized empirical method" and

Polkinghorne's philosophy of science, enough that their positions on the relationship between theology and science can be brought into meaningful conversation with one another.

The most important points about Lonergan's generalized empirical method are what he understands to be the basic set of conscious operations involved and the basic pattern in which those operations unfold. As to the set of operations, Lonergan conceives of consciousness as involving seeing, hearing, smelling, touching, tasting, inquiring, imagining, understanding, conceiving, formulating, reflecting, marshalling and weighing evidence, judging, deliberating, evaluating, and deciding. He typically abbreviates this set of operations by grouping them into four clusters, or levels of consciousness, and referring to each level by the principal operations occurring within that cluster: experiencing, understanding, judging, deciding. Lonergan conceives of these levels as unfolding in a basic pattern. For example, referring to the first three levels, Lonergan writes:

> Experience stimulates inquiry, and inquiry is intelligence bringing itself to act; it leads from experience through imagination to insight, and from insight to the concepts that combine in single objects both what has been grasped by insights and what is experience or imagination is relevant to the insight. In turn, concepts stimulate reflection, and reflection is the conscious exigence of rationality; it marshals and weighs it either to judge or else to doubt and so renew inquiry. (1967, 223)

Or, in reference to all four levels:

> Our consciousness expands in a new dimension when from mere experiencing we turn to the effort to understand what we have experienced. A third dimension of rationality emerges when the content of our acts of understanding is regarded as, of itself, a mere bright idea and we endeavor to settle what is really so. A fourth dimension comes to the fore when judgment on the facts is followed by deliberation on what we are to do about them. (1990, 9)

This conception of generalized empirical method resembles Polkinghorne's notion of science. In terms of operations, Lonergan sees four where Polkinghorne sees only two.[11] Still, Lonergan's distinction between insight and judgment is easily assimilated into Polkinghorne's conception of theory. In terms of the pattern of operations, it seems clear that Polkinghorne's notion of a bottom-up discipline could be applied to Lonergan's conception of the basic pattern of relations between the operations.

As with Polkinghorne's conception, we must note that Lonergan's idea of generalized empirical method is not the kind of naive, monodirectional foundationalism that today is severely criticized. Although the point is often overlooked in both presentations and criticisms of Lonergan's work, he clearly affirms both the symbiotic and top-down elements of scientific method mentioned by Polkinghorne. With Polkinghorne, he would affirm that the basic pattern of generalized empirical method unfolds in a bottom-up order. But, again with Polkinghorne, he would affirm that as a

matter of fact the levels of consciousness do not unfold in one direction only.

Lonergan acknowledges that there are ways in which insight, judgment, and decision can precede experiencing, and guide it. His treatment of heuristic structures as well as patterns of experience make the symbiotic and top-down elements of generalized empirical method quite clear. Unless something is said about these oft-neglected elements of Lonergan's conception of generalized empirical method, certain elements of the comparison between Polkinghorne's and Lonergan's conceptions of the theology-science relation risk being underappreciated or even misunderstood. To avoid this, I briefly comment on heuristic structures.

Scientific investigations are most directly concerned with what Lonergan would call the empirical level of consciousness. But investigations do not attend to every element of experience; their attention is selective. The selectivity of attention, as Lonergan explains it in his treatment of heuristic structures, is due to the guidance of the intellectual, rational, and responsible levels of consciousness,[12] guidance that directs attention toward elements of experience that seem to be the most potentially fruitful avenues for understanding or those that are most in need of understanding. There is a hermeneutic circle here: Insight, judgment, and decision are operative in directing attention to elements of experience that ultimately will verify or falsify those insights, judgments, and decisions.

The fundamental importance of heuristic structures in generalized empirical method, for present purposes, is in the guidance of the investigator's attention. In the fact of that guidance there is, if only temporarily, and for anticipatory purposes, a reversal of the basic pattern in which the levels of consciousness unfold. The *method* still moves from the bottom up; the point now is that there can be top-down moments within that process.

Expanding briefly on this feature of generalized empirical method, Lonergan likens the road through investigation to discovery to a pair of scissors with an upper blade and a lower blade (1978, 312–13, 461, 522–23, 577–78, 580–81, 586–87). The lower blade represents the basic pattern of empirical method, in which experiencing provides the grounds for inquiry, inquiry gives rise to insight, insight is placed under the examination of reflection, and reflection issues a judgment. The upper blade represents the heuristic structures according to which the investigations are guided to potentially relevant data. So, for example:

> As soon as a science has made some progress, it invokes its known laws in seeking a determination of the unknown. Thus, once Boyle's law is known, one assumes it in determining Charles' law; once both are known, one assumes both in determining Gay-Lussac's law. Similarly, in all departments, known laws are employed to guide experiment, to eliminate the consideration of what has already been explained, and to provide premises for the interpretation of observed results. (1978, 106)[13]

What I would note specifically about this process is that as the upper and lower blades work together, the upper blade changes as a result of discoveries made in the circuit of the lower blade, and, as that happens, fresh data are produced within the lower blade. It seems that Lonergan's fully nuanced version of generalized empirical method can be accurately described in Polkinghorne's terms—the lower blade works from the bottom up, the upper blade works from the top down, and there is a symbiotic relation between the blades.

If (and to the extent that) I am correct in holding that Lonergan's conception of generalized empirical method is basically in agreement with Polkinghorne's conception of the method of a natural science, it follows that Lonergan's conception of theological method as a functionally specialized enterprise shows both a basic agreement and a basic disagreement with Polkinghorne's conception of theological method. That is because Lonergan's functionally specialized theological method is divided into two phases. In its first phase, it is isomorphic with the structure of generalized empirical method, as is true for Polkinghorne's conception of the relation between theological and scientific method. But the second phase of this method is the mirror image of the first, meaning that the second phase of theological method is isomorphic with the *exact reverse* of the structure of generalized empirical method, in direct contradiction of Polkinghorne's conception of the relation between theology and science. I do not reproduce Lonergan's thought on functional specialties in any great detail here, but a few comments on the framework of the functional specialties reveal in broad strokes where Lonergan's conception of the relationship between theological and scientific method departs radically from Polkinghorne's in certain key ways.[14]

Almost all that needs to be said, for present purposes, about the concept of functional specialization and the particular schema of functional specialties in Lonergan's conception of theological method is contained in the following statement:

> Functional specializations arise, then, inasmuch as one operates on all four levels [of consciousness] to achieve the end proper to some particular level. But there are four levels and so four proper ends. It follows that the very structure of human inquiry results in four functional specializations and, since in theology there are two distinct phases, we are led to expect eight functional specializations in theology. In the first phase of theology *in oratione oblique* there are research, interpretation, history, and dialectic. In the second phase of theology *in oratione recta* there are foundations, doctrines, systematics, and communications. (1990, 134)

Bypassing the general notion of functional specialization, I want to make special note of the two principles of division—the one that divides theology into two phases and the other that divides each phase into four parts.

First, theology is divided into two phases. These phases pivot on religious conversion.[15] In the first phase, that of indirect discourse, the goal is

to determine what others have held to be the case. In the second phase, that of direct discourse, the theologian takes a personal stance toward what is the case. One's religious horizon is the pivot between these phases in the sense that although that horizon may play a de facto role in the first phase, it plays no de jure role, whereas it is involved de jure in the second phase.[16]

Second, each phase of theology is divided into four parts. Each part is called a functional specialty, and each functional specialty is particularly (but not exclusively) related to one of the four levels of conscious operations. In the first phase, *research* aims to make available the data in which the positions of various people can be found; *interpretation* aims at understanding that data; *history* aims at narrating how the meanings that interpreters discover in the data have changed over time; and *dialectic* seeks to uncover conflicts in that historical flow of meaning, noting where such conflicts are real or apparent and, where real, genetic or dialectical. For Lonergan, these functional specialties correspond to the levels of experiencing, understanding, judging, and deciding.

In the second phase, *foundations* aims at objectifying the horizon that grounds the movement from indirect to direct discourse; *doctrines* uses that foundation to select positions from among the alternatives presented by dialectic; *systematics* attempts to understand the doctrines that have been selected by the application of foundations to dialectic; and *communications* aims at communicating the understanding of those doctrines to people of all cultures, classes, and walks of life by whatever media are most effective. For Lonergan, these functional specialties correspond to the levels of deciding, judging, understanding, and experiencing.

Two further notes are needed to clarify this basic framework. First, although each functional specialty in both phases takes special reference to one level of consciousness, none operates only on that level. Instead, each functional specialty operates on all four levels in order to produce the end proper to one level.[17] For this reason it is important to keep in mind that although the functional specialties correspond to or are isomorphic with the levels of consciousness, they are not strictly interchangeable.

Second, to understand the relations between functional specialties correctly it is necessary to realize that the functional specialties are interdependent not only in one direction, as their definitions indicate, but in both directions. In other words, there is a distinction between the basic pattern of relations between the functional specialties and the fully nuanced pattern, just as there was between the basic pattern of generalized empirical method and the fully nuanced pattern.

Certain aspects of these nuances call for some comment, especially because the similarities and differences between Lonergan and Polkinghorne come to a head in them. It is obvious from their definitions that there is a way in which interpretation depends on research, history on research and interpretation, and dialectic on research, interpretation, and history. This

is the basic pattern of relations between functional specialties in the first phase, and I propose to call it their *forward dependence*. The forward dependence of the first phase, research-interpretation-history-dialectic, is isomorphic with the basic pattern of generalized empirical method, experiencing-understanding-judging-deciding; it follows a bottom-up structure.

According to Lonergan, the dependence also can and does move in the opposite direction. For example, one may delve further into research and/or interpretation because of a desire to determine whether a particular conflict—the topic of dialectic—is real, or the product of a restricted field of data or of a limited or incorrect understanding of the data that are available. One's interpretation of certain phrases may influence one's determination of whether or not particular letters are genuinely Pauline. This dependence, which reverses the basic pattern of relations in the first phase of functional specialties, I propose to call the *reverse dependence* of the functional specialties. The reverse dependence of functional specialties in Lonergan's first phase of theological method is isomorphic with the reversal introduced into the basic pattern of generalized empirical method by heuristic structures; that is, it follows a top-down structure.

It also is clear from their definitions that there is a way in which doctrines depends upon foundations, systematics upon doctrines and foundations, and communications upon all three. This is the basic pattern of relations between functional specialties in the second phase, and I propose to call it the forward dependence of functional specialties in the second phase. This basic pattern of relations is not isomorphic with the basic pattern of relations between the levels of consciousness in generalized empirical method. In fact, the forward dependence of functional specialties in the second phase, foundations-doctrines-systematics-communication, is isomorphic with the structure deciding-judging-understanding-experiencing, which is a top-down structure.

Again, the fact of dependence in the opposite direction is something that Lonergan affirms. For example, communications may raise a question for systematics, as it often does when one wants to communicate the same meaning in different cultures and different languages. Or systematics may influence doctrines, as it did in the cases of transubstantiation and baptism by desire. Or one's inability to affirm a particular doctrine or set of doctrines, one's failure to understand those doctrines, or one's lack of desire to communicate them may occasion a reexamination of one's horizon in foundations to see whether it is authentically converted or not. This pattern of dependence reverses the basic pattern in the second phase of functional specialties, and so I propose to call it the reverse dependence of functional specialties in the second phase. In its reverse dependence, the second phase again becomes isomorphic with the basic pattern of generalized empirical method, which, as already noted, is a bottom-up structure.

For Lonergan, then, there is a basic pattern of dependence and a nuanced pattern of dependence between functional specialties within each of the phases of theological method,[18] just as there is a basic pattern and a nuanced pattern of relations between conscious operations in generalized empirical method. The fundamental difference between the two phases is that the basic pattern of relations between functional specialties in the first phase is isomorphic with the basic pattern of relations in generalized empirical method—that is, it follows a bottom-up structure—while the basic pattern of relations between functional specialties in the second phase is not isomorphic with the basic pattern of relations in generalized empirical method but rather follows a top-down structure.

Comparing Polkinghorne and Lonergan on the Relationship between Theological and Scientific Method

In this section I compare Lonergan's conception of the relationship between theological and scientific method with Polkinghorne's. Before doing so, certain factors that qualify the comparison should be mentioned.

Polkinghorne distinguishes only two levels of operations in cognitional structure: experience and theory.[19] This gives him two possible relations, one that he calls bottom-up and the other, top-down. Lonergan distinguishes four levels of operations, which creates the possibility of a whole series of relationships in cognitional order that cannot correspond to anything in Polkinghorne's system. Also, Polkinghorne's discussion of method is about cognitive operations while Lonergan's is about cognitive operations and also functional specialties, each of which involves all of the cognitive operations in a collaborative effort. The shift from individual cognitive operations into functional specialties in Lonergan's system has no analogy in Polkinghorne's writings.

Because of these qualifications, any comparison between the two systems will be strictly limited in its character. Still, I think that Lonergan's four levels of operations can be understood as a further specification of Polkinghorne's two. And the relations between functional specialties are isomorphic with the relations between operations. Furthermore, the overarching metaphor of proceeding from the bottom up or the top down seems to be applicable in dealing with any number of operations or corresponding functional specialties.

While far from perfect, then, it seems to me that such comparison is a legitimate possibility and, even if strictly limited, valuable for its ability to highlight two fundamentally different approaches to theological method in relation to the natural sciences. The difference between the approaches reaches its climax in how these authors think "faith seeking understanding" ought to be carried out and how its relation to the natural sciences ought to be represented in the contemporary context. I believe that the

choice between these rival conceptions of faith seeking understanding is of the utmost importance in gauging the current situation of the theology-science dialogue and charting its future course.

The Basic Comparison. Lonergan's conception of the relationship between the first phase of a functionally specialized theological method and generalized empirical method seems similar to Polkinghorne's conception of the relationship between theological and scientific method. Polkinghorne makes a concession to the occasional fact of top-down ordering of experience and theory in both theology and science. But this is only a concession, a qualification of something more fundamental: a method that moves on the whole from the bottom up, from experience to theory, in both theology and science. In other words, within his own system Polkinghorne conceives of the cognitional structure of theology and science, their methods, as isomorphic.

In Lonergan's conception of the first phase of theology there is something analogous to this normative method with a concession. The basic pattern of relations between functional specialties in the first phase moves from research through interpretation and history to dialectic. Although each functional specialty actually employs all cognitional operations, this movement is isomorphic with the basic pattern of generalized empirical method: experiencing, understanding, judging, deciding. I am virtually certain that Polkinghorne would label this manner of proceeding among the levels of conscious operations bottom-up; by association, then, one might also say that the basic pattern of relations between functional specialties in the first phase moves from the bottom up.

Moreover, Lonergan concedes that occasionally this basic pattern of relations between functional specialties reverses itself. When it does, it becomes isomorphic with the heuristic structures of empirical method. But the pattern of relations between conscious operations in the heuristic structures reverses the basic (bottom-up) pattern of generalized empirical method. As such, by way of contrast, it might be called a top-down order of operations. By association, then, the reverse dependence of functional specialties in the first phase of theology may be said to take a top-down order.

The isomorphism between theological method and generalized empirical method in Lonergan's thinking is secured more completely by the fact that theology, like generalized empirical method, has an occasional top-down ordering within a fundamentally bottom-up method. This also makes the similarity between Polkinghorne's and Lonergan's conceptions of the relation between theological and scientific method as nearly complete as possible. Thus far, at least, both conceive of theology and science as being isomorphic in their methods.

Things change when one moves from the first to the second phase of theological method in Lonergan's system, because the pattern of relations

between functional specialties (and their corresponding operations) in the second phase is the mirror image of the pattern in the first. Thus, the basic pattern in the second phase moves from foundations through doctrines and systematics to communications, and this is isomorphic with a movement from deciding through judging and understanding to experiencing. But this latter movement is exactly the opposite of the basic pattern of operations in generalized empirical method. As already noted in reference to the heuristic structures of empirical method, Polkinghorne would surely call this a top-down order of proceeding among operations. By association, the basic pattern of relations between functional specialties in the second phase of theology would also be called a top-down process. Note well that this top-down ordering is not, for Lonergan, a *concession* to the way things sometimes fall out as a matter of fact; it is, rather, the correct way of doing things, the *method* of theology in its second phase.

As in the first phase, there is sometimes a reversal of this basic methodological pattern. But the reversal of the basic pattern of functional specialties in the second phase (communications preceding systematics, for example) makes it isomorphic with the basic pattern of operations in generalized empirical method. In other words, the reversal of the basic pattern of functional specialties in the second phase of theological method is isomorphic with a movement from the bottom up among operations.

The measure in which the relations between functional specialties in the first phase of theological method is isomorphic with the relations between conscious operations in generalized empirical method is the exact measure in which the relations between functional specialties in the second phase of theological method will be nonisomorphic with the relations between conscious operations in generalized empirical method—in fact, isomorphic with the exact reverse of generalized empirical method.

For Polkinghorne, theological method is like scientific method: a bottom-up process with an occasional top-down element. This is also, in its own way, true of Lonergan's conception of generalized empirical method and the first phase of theological method. But the second phase of theological method is exactly the opposite: a top-down process with an occasional bottom-up element. The extent to which Lonergan's first phase of theology is similar to Polkinghorne's conception of theological method is the extent to which the second phase differs from that conception. Given a reasonable similarity between their positions on the method of science, the relation between their positions on whether theology is like the natural sciences follows suit.

An Application: Faith Seeking Understanding. An important application of these notions of theological method comes in the authors' conceptions of "faith seeking understanding." This phrase ceased to be a distinguishing mark of anyone's theological method long ago. However,

although many authors lay claim to the words, they do not all understand the meaning of these words in the same way. Polkinghorne's and Lonergan's positions are a case in point.

Polkinghorne's position is staked out in the following statement: "The view of the theological enterprise which I would wish to defend is summed up in a splendid phrase of St. Anselm: *fides quaerens intellectum*, faith seeking understanding. Thus conceived, *theology is reflection upon religious experience*, the attempt to bring our rational and ordering faculties to bear upon a particular part of our interaction with the way things are" (1986, 28; emphasis added). In explicating the phrase, Polkinghorne situates it clearly within his contention that theology is, and should be represented as, a fundamentally bottom-up enterprise.

The idea that "faith seeking understanding" can be adequately translated as "reflection upon religious experience" provides a clear point of contrast with Lonergan's stance. For Lonergan, faith seeking understanding is located within the ambit of systematics. As such, the method of faith seeking understanding is simply an example of all that has already been said about method within the second phase of functional specialties. It is an especially important example, though, worth specifying in further detail.

The special goal of systematics is to employ all cognitive operations in order to achieve the aim of understanding. What systematics achieves an understanding of, however, is not religious experience, at least not directly. Instead, according to Lonergan, systematics attempts to achieve an understanding of those doctrines that have been affirmed within the horizon of one's decisions (which respond to religious experience, among other things). The "data" for theology, in the case of faith seeking understanding, are doctrines, not experiences.[20]

This is an example of how the second phase of functional specialties, moving from foundations to doctrines to systematics, is isomorphic with what Polkinghorne would call a top-down order of proceeding among the operations of consciousness. Their respective conceptions of faith seeking understanding are methodological opposites. For Polkinghorne, the methodological structure of faith seeking understanding is isomorphic with the method of the natural sciences; for Lonergan, the methodological structure of faith seeking understanding is not isomorphic with structure of generalized empirical method—in fact they are the exact reverse of each other.

Conclusion

Many questions may be raised at this point. The one that I want to focus on is this: Supposing some version of the notion of accommodation is correct, what is implied about the nature of God—in particular about God's transcendence[21]—by the positions of Polkinghorne and Lonergan on the relation between theology and science?

For his part, Polkinghorne establishes accommodation as a guideline for any scientific enterprise. To be truly scientific does not mean to conform to the external model of physics, for example. Rather, it means accommodating one's inquiry to the nature of the object one happens to be investigating, even if this makes the inquiry decidedly unlike physics. This is the path quantum mechanics walked in distinguishing itself from Newtonian mechanics; it is the path every discipline must walk to be true to itself.

Moreover, in his explicit statements about God Polkinghorne indicates clearly his belief that God is transcendent, standing to the world as Infinite to finite, as Creator to creatures. Against the background of the notion of accommodation, this creates certain expectations about what theological method should be like, at least in its relation to disciplines that are accommodated to finite, created objects. Yet Polkinghorne speaks of a theological method that does not disclose or mirror that transcendence in any way, and in doing so it seems that he fails to follow through in executing the very program that he sets forth for an accommodated theology.[22]

I think that Polkinghorne's methodological program is typical in the theology-science dialogue today in holding that the fiduciary (top-down) element in theological method is simply a species of the fiduciary element that is a de facto part of all knowing.[23] But I want to suggest that this program contains the seeds of an alienation of theological method from the transcendence of God. Something like Lonergan's position on how the method of faith seeking understanding is related to the method of the natural sciences, rather than Polkinghorne's, is exactly the sort of thing that one should expect on the supposition of Polkinghorne's principle of accommodation, at least if the God who is the object of theological science is transcendent. The way in which that object differs from all other objects ought to be disclosed or reflected in the method by which theological investigation proceeds. While Polkinghorne charts the course for an accommodated theology, it seems to be Lonergan who is more intent on following it.[24]

These suggestions are informed in no small part by the historical (and, I think, systematic) lesson set forth by Michael Buckley in *At the Origins of Modern Atheism* (1987). I cannot help but frame the comparison of Polkinghorne and Lonergan in terms of that lesson. Because this is crucial to my assessment of the merits of the two methodological programs, I conclude by sketching Buckley's thesis, as I understand it, and indicating its potential relevance for the topic being considered here.

At the origins of modern atheism, Buckley writes, lie the theological strategies used to defend religion. Instead of helping religion, however, these strategies sowed the seeds of its destruction as they came to hinge on the ever-closer interaction of theology and science. This process of association resulted in the self-alienation of theology from its own distinctive character in a twofold way: "religion denied itself both a proper form to reflect upon this issue and the commensurate evidence by which it could

be resolved" (Buckley 1987, 346). The nature of this double denial needs to be spelled out more precisely in order to situate my assessment of the difference between Lonergan and Polkinghorne on the method of faith seeking understanding.

First, there was an alienation of theology in its content—the problem of commensurate evidence just mentioned. What Buckley means by this is that Christology and religious experience—whether individual or communal experience—were bracketed in providing a defense for the existence of God. In their place was substituted the warrant provided by nature. Instead of personal communication, impersonal nature provided the primary evidence for the existence of God. "In their search for proof of the divine existence, the theologians had shifted from the God defined and disclosed by Christ and religious experience to the god disclosed in impersonal nature" (Buckley 1987, 350). What resulted from this was a God commensurate with the evidence—the God of the natural world but not of human affairs. Essentially, God's role was reduced to putting matter in motion. When, eventually, matter was conceived to be self-moving, there was nothing left for God to do. In the famous words of French mathematician and astronomer Pierre-Simon, Marquis de Laplace, there was no longer any need for that hypothesis. Explicit atheism arose because God was not needed to do the only task that had been reserved for the Deity.

Second, there was an alienation of form. By this Buckley means that, starting from nature as evidence, the question of God's existence proceeded by way of philosophic inference instead of starting with the full resources of the Christian tradition—including Christology, communal religious experience (liturgy) and individual religious experience (especially prayer)—and proceeding by way of faith seeking understanding (as classically understood). The form of theology had become modernist natural philosophy.

In sum, in and through the strategies being pursued by theologians, particularly against the background of the rise of the new sciences, the implicit claim was being made that religion had "neither the evidence, nor the kinds of reflective inquiries, nor the participative awareness to establish its own cognitive claims" (Buckley 1987, 346). This self-alienation of theology from its own distinctive content and form sowed the seeds of modern atheism, according to Buckley. The theological strategies employed in the defense of religion ended in its denial.

> Atheism is not the secret of religion, as Feuerbach would have it. Atheism is the secret of that religious reflection which justifies the sacred and its access to the sacred primarily through its own transmogrification into another form of human knowledge or practice, as though the only alternative to fideism were such an alienation, as though religion had to become philosophy to remain religion. The unique character of religious knowledge does not survive this reduction. (Buckley 1987, 359)

The warfare of science with theology was not generated, as many still assume, by some antipathy between the two; on this analysis, it was generated by their too-close association.

Against the background of that thesis, I think that it should strike the attentive reader as curious that anyone engaged in the theology-science dialogue today would be claiming that theology is capable of becoming like the natural sciences in its method (for example, see Murphy 1999, 629–42; 1990), or that it should become so.[25] If one agrees with Lonergan that theology is not like the natural sciences in its method (see also Clayton 1989; 1997; 1999, 609–18), or with Buckley that the unique character of religious knowledge does not survive its reduction into another form of knowing, or with Polkinghorne that we ought to expect a theology that is accommodated to a transcendent God to differ from other disciplines as the Infinite differs from the finite, as the Creator differs from its creatures, then the trend toward methodological assimilation—which I think is the stronger trend by far in the current dialogue—is producing expectations that theology must ultimately fail to satisfy. If that is the case, one must ask: What will happen to the assessment of theology as a serious intellectual discipline, and to the place of God-talk in public academic discourse, when people who have been taught to expect theology to be just like the natural sciences find out that it is not, and cannot be?

To present Buckley's lesson on a slightly more general plane, I would say that one gets a God commensurate with the content and form of one's theology. With his notion of accommodation, Polkinghorne enthusiastically endorses this idea as true not only of theology but also of all other disciplines. But Polkinghorne's statements about a God who is utterly transcendent ring hollow, all the more so given his defense of accommodation, when placed against the background of a theological method that does not disclose or mirror that transcendence in any way. Such a gap between method and object would never be tolerated, in Polkinghorne's scheme, in the case of quantum mechanics. Why should it be tolerated in the case of theology? If Polkinghorne is right about accommodation, and I think he is, a theological method that does not differ in any fundamental way from the methods of other disciplines discloses and reflects a God who does not differ in any fundamental way from all other beings.

If the origins of modern atheism give us a clue about the working out of the logic of ideas in the dialectic of history, the conclusions about God will eventually have to be tailored to the foundations that are being laid. In that case, just as Newtonian methods can disclose only a particular kind of world, and strict insistence upon those methods excludes the disclosure of any other kind of world, just as the methods of behavioral psychologists can reveal only a particular kind of human being, and strict insistence upon those methods excludes the disclosure of any other kind of being, so this theological method that is being supported in the theology-science

dialogue can disclose only a particular kind of God, and strict insistence upon its method excludes the disclosure of any other kind of God.

"In an effort to secure its basis," Buckley says, "religion unknowingly fostered its own estrangement" (1987, 359). In my estimation, those engaged in the theology-science dialogue today need to exercise caution in making sure that new forms of these same mistakes do not plague the strategies by which we seek to renew and revitalize the place of theology and of God in the academy and the culture at large. I concur with Peterson's words, cited at the beginning of this article, that we need to gauge the present moment correctly in order to ensure a positive future for the theology-science dialogue. But I fear that much of that dialogue, as it pertains to methodological issues, and as it is being carried out today, is no more than the singing of an old refrain in a new, postcritical key.

Notes

A version of this essay was presented at a conference on the work of Bernard Lonergan held at Boston College, 27–28 September 2002.

1. Lonergan's position on the nature of religious experience is also an excellent example of what Polkinghorne means by religious experience being accommodated to the idiosyncratic nature of God.

2. Although this has always been the general thrust of his work, see *Faith, Science and Understanding* (2000), 60–63. Polkinghorne's comments there take the possibility of a fundamental (rather than auxiliary) role for top-down thinking in theology more seriously than ever before, in my estimation.

3. As a result of this difference, the sciences exercise an interrogative power in repeatable experiments that theology does not and cannot have, because theology involves an encounter with the infinite. A consequence of this difference in the ability to manipulate one's subject matter is that the language of theology is "the open language of symbol" whereas the language of science is "the precise language of mathematics" (2000, 41).

4. See the opening page of *Reason and Reality* (1991), which states: "Begin with God from the bottom upwards, not from the top downwards." Additionally, Polkinghorne's Gifford Lectures (1994) are titled *The Faith of a Physicist: Reflections of a Bottom-Up Thinker*.

5. Polkinghorne lists five reasons why naive realism is inadequate (2000, 30–31).

6. See his treatment of deep inelastic scattering (a theory-laden observation) and the discovery of quarks (a theoretical interpretation of that observation) in *Rochester Roundabout* (1989), 125–26, 131–32, 142–44, or his treatment of the discovery of W and Z particles in *One World*, where he says: "What they *saw*, however, was a complicated pattern of readings in a very large and expensive array of electronic counters. An extensive *chain of interpretation* is necessary to translate those patterns into 'Here we have a W' or 'There is a Z'" (1986, 8; emphasis added).

7. See Polkinghorne's comments about the apparent falsification of relativity by Dayton Miller's aether drift investigation in 1921 (1989, 172). One may note the same feature in the case of Copernicus's and Darwin's theories, which were held by many (including Galileo, in Copernicus's case) in the face of apparently contradictory evidence as well as significant unresolved problems. The possibility of false acceptance or false rejection of a theory based on misleading data—or Type I and Type II errors—can be found in any standard textbook on statistics or research methods.

8. This creates a question that I only summarize here, using the classical format of a *quaestio*: According to this analysis, it would seem that theology and science share the same fundamental method. On the contrary, however, the sciences seem to be much more successful than theology in reducing a plurality of opinions to unity. After all, there are any number of theologies, both within and between religions, but there is no such thing as a Lutheran or a Hindu physics. In light of this disparity, how can one continue to say that theology and science share the same fundamental method? Polkinghorne's witty response, which I also simply summarize,

is that the disparity results from the fact that science is easy and theology is hard (1991, 8). What he means is that theology treats a more complex object than science does, resulting in theology's greater difficulty in bringing consensus—just as it is harder to bring consensus on more difficult questions even within any particular discipline (1991, 9). Because of differences in the objects they treat, Polkinghorne says that theology and science belong to opposite ends of one methodological spectrum. The related problems of religious diversity and theological pluriformity are resolved by applying the principle of accommodation to objects of differing complexity. It would be interesting to bring Polkinghorne's position on the complexity of God into conversation with the scholastic position on the metaphysical simpleness of God.

9. Lonergan conceives of religion as neither static (for it too changes) nor simply a priori to theology, because theological reflection is a contributing factor in the changing of religion.

10. For a basic treatment of Lonergan's position on religious experience, which I mentioned above as an example of what Polkinghorne means by accommodated data, see *Method in Theology* (1990), 105–9.

11. At various points, Polkinghorne's writings reflect on the significance of all four levels. But only the distinctions between experience and theory (which, in Lonergan's terms, refers indistinctly to both insight and judgment) are brought to bear on methodological issues as they pertain to theology and science.

12. Patterns of experience differ from heuristic structures in the principle according to which some elements of experience are selected for attention. In heuristic structures the principle is one's anticipations of intelligibility; in patterns of experience the principle is one's interests.

13. Lonergan points out that this process is also at work in the derivation of special theological categories: "It is to be stressed that this use of the special categories occurs in interaction with data. They receive further specifications from the data. At the same time, the data set up an exigence for further clarification of the categories and for their correction and development. In this fashion there is set up a scissors movement with an upper blade in the categories and a lower blade in the data" (2000, 293).

14. In what follows, I place a good deal of emphasis—perhaps too much—on the isomorphism between the functional specialties and the levels of consciousness in Lonergan's thought. The danger of this strategy is that it may cause the reader to "miss the forest for the trees" in terms of Lonergan's proposal for theological method, focusing on the details of the isomorphism and missing the overall movement among the functional specialties. I am taking that risk because I think it allows me greater clarity highlighting what I take to be an important methodological disagreement between Lonergan and many writers, including Polkinghorne, involved on the theology-science dialogue today.

15. This statement calls for two sets of comments. First, although Lonergan's writings are not always perfectly clear on the matter, I understand *religious conversion* to be distinct from both *religious experience* and *faith*. I think that religious conversion, in Lonergan's system, is best understood as the existential "yes" to the fourth form of the question of God—a question that is raised by religious experience (1990, 116). Alternatively one might say that religious conversion is the human response to the dynamic loving of religious experience on the level of *decision*; this decision is distinct from the *knowledge* born of that same love, which is faith. Second, one might better say that the pivot between the first and second phase of theology is based on the selection of some *horizon* rather than that it is based on conversion, for the fact is that the horizon one chooses may or may not be an instance of genuine conversion—religiously, morally, or intellectually. Lonergan himself says that "there may be many Christian horizons and not all of them need represent authentic conversion" (1990, 131–32).

16. So, for example, a Christian and an atheist both could decide to study Nietzsche's *Beyond Good and Evil*, or Paul's letter to the Romans. The fact that they have different religious horizons *need* not hinder their agreement on what the respective authors meant, although it may in fact do so. Whether they take that meaning to be true, however, *necessarily* involves their own horizon. For a related discussion of the distinction between de facto and de jure roles of the horizon, see Lonergan's discussion of grace and natural knowledge of God in "Natural Knowledge of God" (in *Collection* [1967]) as well as the brief summaries of this argument in *Method in Theology* (1990), 338–39, and *Philosophy of God and Theology* (1973), 51.

17. For example, a researcher must decide to pursue a particular kind of data, must understand a variety of methods that could make those data available, judge that one or some of those methods are better than others, and decide to use that method. An interpreter must

decide that a certain author's works are worth his time and effort, must experience the writings of the author, and judge which of the many possible interpretations of the author's works is correct, or more likely than others. A systematician must distinguish between the truth or falsity of a doctrine and the truth or falsity of a particular understanding of that doctrine.

18. There is an analogous forward and reverse dependence *between* the first and second phases, not only *within* each phase. Lonergan's treatment of reverse dependence between the phases (in which the first phase depends on the second) further reinforces a point that is true whether one is treating the relations between levels of consciousness in generalized empirical method, the relations between functional specialties within the first and second phases of theological method, or the relations between the two phases themselves: Reverse dependence is always to be placed in the context of forward dependence (see Lonergan 1990, 143).

19. As mentioned earlier, Polkinghorne does have a sense of the distinction between insight and judgment and between judgment and decision—but these distinctions are never brought to bear on questions of methodology.

20. The question must be raised at this point: Where do the doctrines come from? I do not give Lonergan's answer in detail here, but something must be said to prevent the perception that his appeal to doctrines is a simplistic fideism. Briefly, Lonergan's understanding is that doctrines do not come from religious experience, from the existential decision to be a believer (what Lonergan would call religious conversion), or from the functional specialty foundations (which is concerned with the objectification of religious conversion, among other things). Instead, they come from the interaction of the functional specialty foundations with the functional specialty dialectic, the latter of which places the capstone on the work of the first four functional specialties. So Lonergan says: "Such doctrines stand within the horizon of [the functional specialty] foundations. They have their precise definition from [the functional specialty] dialectic, their positive wealth of clarification and development from [the functional specialty] history, their grounds in the [functional specialty] interpretation of the data proper to theology [from the functional specialty research]" (1990, 132). For a detailed treatment of doctrines within the functional specialty doctrines, see Lonergan 1990, chap. 12.

21. Transcendence often is understood to mean absence or unavailability in contrast with immanence, meaning presence or availability. I understand transcendence in this case to mean the relation of the infinite to the finite. This reorganizes the notion of transcendence, especially in its relation with immanence. Among other things, it allows one to speak of transcendence as a way of being present, of being available precisely as infinite.

22. This seems to be true even in the case of Polkinghorne's "dipolar" conception of God, in which God has eternal and temporal "poles." I do not intend to engage in that debate, in which Polkinghorne locates his position as somewhere between classical theism and process theology, beyond noting this methodological correlate: Such a notion of God calls for a dipolar conception of theological method, which Polkinghorne does not have.

23. His comments in *Faith, Science and Understanding* (2000), 60–63, suggest that this is not entirely accurate, even if the possibility is not further developed.

24. I am supposing, for present purposes, that one may say that the transcendent God is the object of theology for both Polkinghorne and Lonergan. Two sets of comments are in order. First, for some qualifications concerning the senses in which God is and is not an object according to Lonergan, see Lonergan 1990, 341–42. Second, one may ask whether God, as infinite, can be the "object" of a theology carried out by finite minds. Answering this question in the affirmative requires one to work out a theology of transcendence, the burden of which is to articulate *how* God, as infinite, can be present to human beings. Such a project creates certain expectations about the ways in which theological method should differ from the methods of the natural sciences. But one also can answer in the negative, saying that a theology carried out by finite minds does not (and cannot) deal directly with the reality of God as infinite but rather only with those concepts of God that are received through scripture and tradition, where scripture and tradition are understood as mediations of God's reality. The authority of divine revelation (as mediated through scripture and tradition) in this approach has no obvious methodological counterpart in the natural sciences. Although divided on the question of whether an infinite God can be the object of theology, these two approaches are united in insisting that there are methodological differences between theology and the natural sciences.

25. For example, Arthur Peacocke's claim that theology should be understanding seeking faith rather than faith seeking understanding (Peacocke 2000, 119–40).

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