

SHOULD WE BE TRYING SO HARD TO BE  
POSTMODERN? A RESPONSE TO DREES,  
HAUGHT, AND YEAGER

*by J. Wentzel van Huyssteen*

*Abstract.* This paper explores the thesis that both modernism and postmodernism, as contemporary cultural phenomena, have been unable to come to terms with the issue of human rationality in any positive way. As a result of this, nearly all of the stereotyped ways of relating theology and science through models of conflict, independence, consonance, harmony, integration, or dialogue are likely to be revealed as too simplistic generalizations about the relationship between these two dominant forces in our culture. What is proposed is a postfoundationalist model where theology and science can rediscover the resources of rationality shared by these two reasoning strategies. Postfoundationalism in theology and science wants to point creatively beyond the confines of the local community, group, or culture toward a plausible form of interdisciplinary conversation. In taking seriously the role of local context and interpreted experience, postfoundationalism in theology and science should enable us to reach beyond the walls of our own communities in cross-contextual, cross-cultural and cross-disciplinary conversation.

*Keywords:* interdisciplinary dialogue; naturalism; postfoundationalism; postmodern science; rationality; tradition.

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Those of us who still may be thinking that an issue like “Postmodernism in Theology and Science” sounds esoteric, if not downright cabalistic, obviously haven’t been reading our newspapers lately. Postmodern science has certainly been making headlines all over the country. As recently as October 22, the *New York Times* reported that Native American “creationists” who reject the theory of evolution and other scientific explanations of human origins in favor of their own folklore are fiercely resisting modern archeology. Prominent scholars who support the Native American cause predictably see science as the dominant religion of our times and as

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intruding where it has not been invited to determine human origins (cf. Johnson 1996, C13). Not just tribal archeologists, however, but also Western archeologists who support the Native American cause are now publicly appealing to *postmodernism* as a way out of this tricky problem: not only are the limitations of scientific explanations highlighted, but science is seen as just one of many ways of knowing the world. The author of the *New York Times* article goes a step further and actually labels this a kind of “postmodern relativism” in which science is seen as just one more belief system (cf. Johnson 1996, C13).

An even more celebrated case really brought postmodern science to our doorsteps via the front page of the *New York Times* (cf. Scott 1996). Alan Sokal, controversial New York University physicist, fed up with what he saw as the excesses of the academic left, tricked the social science journal *Social Text* into publishing a paper, written as a parody on postmodern science, as a serious scholarly work (cf. Sokal 1996b). In this paper Sokal gets his fifteen minutes of Warholian fame as he pretends to join the ranks of those postmodern scientists whom he typically, albeit naively, sees as epistemic relativists and antirealists. In this hoax he pretends to show how apparent it has become that physical reality, no less than social reality, is at bottom a social and linguistic construct and that scientific knowledge, far from ever being objective, reflects and encodes the dominant ideologies and power relations of the culture that produces it (cf. Scott 1996, 22). At the same time, however, professor Sokal published another article in *Lingua Franca*; in this article he cheerfully reveals that the *Social Text* article was written as a satirical hoax in which he wanted to expose the hollowness of postmodernism as it “sacrifices” objectivity and reality (cf. Sokal 1996a, 62–64). This philosophically rather naive view of postmodern science was publicly and eerily echoed just a few weeks later when—again in the *New York Times*—John Horgan wrote that, like a mutant virus, postmodernism has infected not only philosophy and the social sciences but even such alleged bastions of truth and objectivity as physics and chemistry. He goes on to label postmodern science “ironic science” (ironic in the sense that science *too* has now been set free from the “tyranny of truth” and is revealed to have multiple meanings, none of which is definite) and includes in this category contemporary chaos theory, superstring theory, and quantum theory, which unlike conventional science—which gives us “truth”—allegedly function to keep us in awe and to induce wonder for the many mysteries that conventional science has left unsolved (cf. Horgan 1996).

While some of us may want to salute the fact that postmodernism in science, along with the problem of interdisciplinary dialogue, has now apparently made it in the media, it is still true that these popular versions of postmodernism remain fundamentally misguided and serve to confuse

the issue of postmodernism in science, especially what the postmodern challenge to the science and theology dialogue may entail. To understand, therefore, what a postmodern perspective might mean for the complex interdisciplinary dialogue of which theology and science form a part, we'll have to move beyond these rather naive stereotypes of rampant relativism and the loss of all objectivity and reality. I will argue, instead, that a positive appropriation of constructive forms of postmodern critique in both theology and science will reveal the resources of rationality shared by these two seemingly very different reasoning strategies. In this way, too, a truly postfoundationalist space for the interdisciplinary conversation between theology and science will open up.

#### POSTMODERNISM IN SCIENCE

Various theologians have recently analyzed and commented on the ramifications of both constructive and deconstructive forms of postmodern critique for theological reflection and how postmodern themes have been either constructively appropriated in various forms of narrative, political, or liberation theology or deconstructively developed into extreme forms of a/theologies (cf. Tilley 1995; Griffin, Beardslee, and Holland 1989; Murphy and McClendon 1989). Despite the current flood of philosophical texts on postmodernism, relatively few attempts have been made to measure the importance of postmodern ideas for the philosophy of science. Of course, Lyotard's influential *The Postmodern Condition* (1984) focused on science and knowledge and reads like a philosophy of science text most of the time (cf. Lötter 1994, 154). Lyotard distinguishes between narrative and scientific knowledge as two distinct species of discourse that can fulfill legitimate functions (1984, 29f.). He claims, however, that narratives provide a certain kind of knowledge that cannot be had in any other way. This narrative knowledge can also function as a legitimation for scientific knowledge instead of the "grand narratives" (science as progressive or supremely objective, or scientific rationality as cognitively superior to other forms of disciplinary reflection) that previously legitimated science in the modern world (Lyotard 1984, 18ff.).

Most of us would agree today that the typically modernist view of science found its apex in the positivistic view of science: here, objective, true scientific knowledge is grounded in empirical facts that are uninterpreted, indubitable, and fixed in meaning; theories are derived from these facts by induction or deduction and are accepted or rejected solely on their ability to survive objective experimentation; finally, science progresses by the gradual accumulation of facts (cf. van Huyssteen 1989, 3ff.; Jones 1994, 3). *Postmodern science*,<sup>1</sup> however, finds its best expression in postpositivist, historicist, and even post-Kuhnian philosophy of

science and has revealed the theory-ladenness of all data, the underdetermination of scientific theories by facts, and the shaping role of epistemic values (that pertain to the nature and reliability of our knowledge claims) and nonepistemic value-judgments (like religious, feminist, or any other political perspectives) in the scientific process. Postmodern philosophy of science also reveals the hermeneutical dimension of science to us by acknowledging that science itself is a truly cultural and social phenomenon (cf. Bernstein 1983, 30ff.). This results not only in the cross-disciplinary breakdown of traditional boundaries between scientific rationality and other forms of rational inquiry but also in the inevitable move from being objective spectators to being participants or agents in the very activities that were initially thought to be observed objectively. Furthermore, the participants also influence one another. Stephen Toulmin puts it succinctly: all postmodern science must start by reinserting humanity back into nature and then integrate our understanding of humanity and nature with practice in view (cf. Toulmin 1985, 210, 237f., 257). Epistemologically, this is ultimately recognized as *the turn from foundationalism to holism* and also as the move away from a modernist notion of individualism to the indispensable role of the community in postmodern thought (cf. Murphy 1990, 201, 205).

Theologians who are engaged in serious dialogue with the sciences will find the postmodernist rejection of grand, legitimizing metanarratives and the seemingly complete acceptance of pluralism (and the relativism that flows from that) formidable challenges for both theology and science. A crucial and increasingly controversial theme throughout the development of twentieth-century philosophy of science has been precisely the justification for interpreting the history of science in terms of a modernist story of progress or rational development (cf. Rouse 1991b, 610). Postmodern philosophy of science now challenges this ubiquitous notion of progress by its combination of respect for the local context of inquiry with a resistance to any global interpretation of science that could constrain local inquiry. As such, it refuses, along with feminist critique, any overall pictures or grand narratives that would want to explain science as a unified endeavor with an underlying essence and makes sense of everyday science by seeing it as a set of narrative enterprises (cf. Lötter 1994, 160). At the same time, of course, it also raises serious political issues by sharply focusing on the autonomy and cultural authority of the sciences. Postmodern philosophy of science, therefore, realizes that science must be understood as a historically dynamic process in which there are conflicting and competing paradigms, theories, research programs, and research traditions (cf. Bernstein 1983, 171ff.). This important fact reveals that the reasons, arguments, and value judgments employed by the community of scientists are fundamentally related to or “grounded”

in social practices. The very criteria and norms that guide scientific activity thus become open and vulnerable to criticism as does the idea of philosophy of science itself.

Although it is extremely difficult to try to fit postmodern ideas into some coherent conceptual scheme, it is helpful to take note of an important distinction that has surfaced in at least some of the recent literature on postmodernism. When Calvin O. Scrag (1989, 86) referred to “antireason postmodernists,” it already seemed to imply that some postmodernists, at least, may not be so eager to jettison rationality and epistemology. Zuzana Parusnikova (1992, 36) similarly distinguishes deconstructive postmodernists from other postmodernists, an idea that is clearly developed by Pauline Marie Rosenau (1992) when she tentatively distinguishes two broad strands within the current postmodern debate: *affirmative* and *skeptical* postmodernism. Skeptical postmodernism is the dark side of postmodernism (cf. also Lötter 1995, 55) and offers a pessimistic, negative, gloomy assessment by arguing that the postmodern age, in its complete break with modernity, is an age of fragmentation, disintegration, and meaninglessness, with a vagueness or even absence of moral parameters, a postmodernism of despair (cf. Rosenau 1992, 15). Affirmative postmodernists, on the other hand, although they agree with skeptical postmodernists in their critique of modernity, have a more hopeful and optimistic view of the postmodern age. This kind of postmodernism is open to positive political action and the making of responsible normative choices, and it seeks an intellectual practice that is nondogmatic, nonideological, and tentative.

An excellent example of what a postmodern methodology might mean for science is found in the recent work of Joseph Rouse (cf. 1987; 1990; 1991a; 1991b). Because a truly postmodern philosophy of science—for Rouse, at least—would have to break away completely from all modernist notions (cf. 1991a, 161), even Kuhnian and post-Kuhnian philosophy of science is here still seen as exemplifying the “persistent narratives of modernity” (Rouse 1991a). In developing his position, Rouse takes up some of the most important themes of Lyotardian postmodernism. Crucial for this philosophy of science is, of course, the complete rejection of any grand narrative legitimization of the history of science as a history of rationality, of progress, or of the search for truth. Rouse also warns against the debunking of science in some of the more extreme reactions against modernist science and then claims that the legitimization of scientific practices and beliefs always has to be partial, within specific contexts, and for specific purposes (cf. 1991a, 161). The idea that there is a “natural world” for natural science to be about, entirely distinct from the ways human beings as knowers and agents interact with it, must similarly be abandoned. On this view scientists are recognized as situated and

participatory agents with inescapably partial positions, and instead of thinking of the sciences as in some sense being “representations” of the world, we should look at the actions they involve and the way they transform the situation for further action (cf. Rouse 1991a, 162).

This nonfoundationalist move beyond any appeal to grand metanarratives should help philosophy of science to finally move beyond “modernity.” This does not mean, however, that it gets us beyond the telling of stories, in which science still plays an important role. Rouse thus argues for a narrative reconstruction of science by taking up another Lyotardian idea, namely, the importance of narratives in everyday life (cf. Lötter 1994, 157). In an important article, “The Narrative Reconstruction of Science” (1990), Rouse develops this further by arguing for the epistemic significance of narrative and by explaining why narrative is important in natural scientific knowledge. Rouse’s understanding of science is therefore thoroughly postmodern: this narrative reconstruction of science as action does not need the modernist global legitimation, since scientists do not need philosophical explications of the epistemic and ontological standing of scientific research. In this narrative reconstruction of science Rouse shows that any attempt to impose a grand narrative scheme on science should be rejected, since even in science we all live within various ongoing stories. Rouse strengthens his position on a postmodern philosophy of science by also endorsing what Arthur Fine (1984) has called the “natural ontological attitude.” This proposal by Fine is another example of a development of Lyotardian postmodernism, although Fine does not present his views as being explicitly postmodern (cf. Lötter 1994, 156). In this postrealist proposal Fine, too, wants to develop a philosophy of science without any grand metanarratives that might be expected to justify scientific activities, and he does this by arguing for a “natural ontological attitude” as a “commonsense epistemology” that focuses on the practical task of doing concrete science in a local context (cf. Fine 1984, 98). What a natural ontological attitude would imply for philosophy of science is in fact a move beyond all realist and instrumentalist attempts to make sense of science in a global or totalizing way. This does not mean that science has no meaning or aim but rather that such questions can only be asked locally, that is, what meaning or goals a specific investigation or research program in a specific context may have.

In Fine’s—and Rouse’s—model for a philosophy of science, “truth” will therefore function only in a pragmatic way and in a local scientific context where scientists themselves negotiate their meaning for use in their specific context. This pragmatic trust in the local activity of science rejects the need for any “added” unified philosophical interpretation of science (the problem, for Fine, with both realist and antirealist interpretations of science). The “naturalness” of the natural ontological

attitude is precisely the fact that we would do better to take scientific claims *on their own terms*, with no felt need for further interpretations, no further additives: a naturalness that Rouse, following Fine, has wittily, and possibly aptly, called “California naturalism” (Rouse 1991b, 611), which implies a “what you see is what you get” attitude. Underlying Fine’s California naturalism is the claim that science can do for itself what the various philosophical additives were supposed to do for it, namely, situate science within an interpretative context. So, Fine’s natural ontological attitude is part of a generally trusting attitude toward local contexts of practice, and what the natural ontological attitude is asking us to trust are scientific *traditions*, where these are understood not as a consensus of authority but rather as a field of concerns within which both consensus and dissent acquire a local intelligibility (Rouse 1991b, 614).

Rouse’s endorsement of Fine’s philosophy of science also helps him to describe science as having no overall aim, no typical or exclusive rationality, and no general theory of truth. Scientists are furthermore urged to answer their own conceptual questions, while philosophers are cautioned to resist interpreting science through their own philosophical categories or theories. Assumptions about postmodernism itself, however, shine through all Rouse’s work and eventually create problems for scientific rationality as such. Rouse (1991a) assumes, most importantly, a complete break between modernity and postmodernity and ends up with a too rigid definition of postmodernity as something that has to overcome and help us move beyond modernity. Lötter (1995, 64) correctly finds that at this stage of the debate, with so much controversy on the characteristics of postmodernism, Rouse would do better to recognize various kinds of both modern and postmodern characteristics, see postmodernism as a critical reflection on the nature, potential, and shortcomings of modernity, and therefore place different philosophies of science on a continuum somewhere between being completely modern or, alternatively, completely postmodern. To this I would add that, without this kind of corrective critical suggestion, even an affirmative postmodern philosophy of science would have a hard time taking the typical cross-disciplinary character of postmodernism seriously, because the narrative reconstruction of science could easily slide into the incommensurability of Wittgensteinian language games and a relativism of local disciplinary rationalities. The dominance of a culturally superior natural scientific rationality may thus be averted but at the cost of losing forever any interdisciplinary reflection that could reveal the values that shape the rationality of different interacting modes of human knowledge.

## POSTMODERNISM AND THEOLOGY

Along with the typical traits of a postmodern philosophy of science, postmodernism's general embracing of pluralism and the resulting rejection of grand metanarratives that universally legitimize the cultural dominance of scientific thought, now seem to have serious implications for the interdisciplinary location of theology and thus also for the theology and science discussion. The fundamental question, Is postmodern religious dialogue possible today? (cf. Comstock 1989, 189ff.), now translates into an even more complex question, Is any meaningful dialogue between postmodern philosophy of science and postmodern theology possible, or does the pluralism and localization of postmodern discourse throw theologians, philosophers, and scientists who share some common quest for human understanding into near complete epistemological incommensurability? Disturbingly enough, some postmodern theologians seem to accept just this in their enthusiastic embracing of a postmodernism of reaction (cf. Hodgson 1989, 29) that calls for a "postliberal" return to orthodox or neo-orthodox epistemic values and confessional traditions. This should again alert us to the fact that postmodernism is a complex phenomenon and that no position in either theology or philosophy of science—just because it claims to be postmodern—should be accepted uncritically. Postmodern thought challenges theologians to account for the "fact" of Christianity (cf. De Villiers 1991, 155) and also to rediscover the explanatory function of religious experience in a theology that wants to move beyond foundationalism precisely because it takes the postmodern challenge seriously. In this sense, the postmodern theological project can actually be seen as an attempt to reaffirm and re-vision faith in God without abandoning the powers of reason (cf. Harvey 1989, 41).

For Christian theology the ultimate postmodern challenge to its rationality and its credibility as a belief system can be stated as follows: do we still have good enough reasons to stay convinced that the Christian message does indeed provide the most adequate interpretation and explanation of our experience of God and of our world as understood by contemporary science? Put differently, does it still make sense within a postmodern context to be committed to the fact that the universe, as we have come to know it through science, ultimately makes sense only in the light of Sinai and Calvary (cf. Berger 1979, 165)? One of the most crucial challenges for theology and science today can therefore be stated as follows: can we successfully deal with the problem of shaping rationality and thereby also identify the epistemic and nonepistemic values that shape religious and scientific reflection within a postmodern context? With this in mind, a statement like the following gains special epistemological significance: many Christians today, whether "postmoderns" or

not, have trouble both with so-called biblical guidelines and with the rules supplied by modern theology (cf. Comstock 1989, 190). We are uncomfortable with the idea, whether it is loosely derived from the Bible or more strictly taken from reason, that the same universal principles should support and shape every particular conversation. This skepticism, I think, is well-founded, since too many of our conversations have in the past been decided in advance by our patriarchal, sexist, classist, or racist metanarratives. For “pre-postmodernists” it apparently seems less complicated to strive for truth, to distinguish between right and wrong interpretations of the biblical text and true and false propositions, and to maintain some form of objective moral truth. In a postmodern world, however, we worry about efforts to plan and build one world, one conversation for humankind, one story of humanity (Comstock 1989, 191). For the dialogue between theology and the sciences this has serious implications: *if our metanarratives can no longer be trusted to provide the basis for interdisciplinary conversation, how can they ever be trusted to open up a space for the dialogue between theology and the sciences?* With this in mind we now turn to two papers presented in this issue of *Zygon*.

#### RESPONSE TO WILLEM B. DREES

I enjoyed reading Willem Drees’s stimulating paper, which successfully manages to outline his own position on the dialogue between religion and science. I agree with Drees that the images offered to us by science are extremely relevant when we reflect on religion. This could, of course, be construed to imply the always pervasive, alleged (modernist) superiority of (Western) natural scientific rationality. Drees initially tries to avoid blatant claims to epistemological superiority for the natural sciences and wants to give arguments for his conviction that science offers only the “best” images of the natural world, of which we humans and our religion(s) are indeed an important part. This is still a strong (and normative) claim, however, and its modernist implications are not avoided by the more careful statement that scientific explanations are not independent of social interactions and the contingencies of history (cf. p. 528). Drees almost ruthlessly argues for the adequacy of science and its ability to encompass even the richness of experience that lies beyond the reach of the scientific image. Not surprisingly, religion and religious experience also end up within boundaries preset by a natural science whose modernist domain here seems to be without any obvious boundaries (cf. p. 528).

Drees is certainly right in his claim that religions not only are views of the world to be coordinated with science but also are phenomena *in* the world and as such objects of study as well. They are, however, possible objects of study from very different and diverse vantage points. The kind

of rationality exposed by a claim to study religion within the parameters of the “scientific” image of the world could differ radically from the kind of rationality implied, for instance, in a *theological* reflection/study of the same religion(s). Moreover, this need not be a mode of knowledge or reasoning strategy that “stands in splendid isolation,” a strategy that Drees rightly rejects (cf. p. 528). What we find in this paper is, therefore, a naturalism that is painted with broad, modernist strokes. Postmodernism, however, would seriously critique precisely any attempts to talk so generically and acontextually about either “religion” or “science.” This is important, since Drees fails to distinguish between the scope of the natural sciences (and the *scientific image* they give us of the world *vis-à-vis* religions and their intimate relation to *manifest images*, that is, implying the *pre-scientific* character of religion) and the scope of theological reflection, which, as a reasoning strategy that sets out to make at least the Christian religion intelligible, in my opinion *also* should aim for coherence, *also* should enlarge and change our view of the world, and, thanks to its inherently interdisciplinary character, *also* should always move beyond splendid epistemological isolation (and therefore, in contrast to religion, can never be called “pre-scientific”). The obvious ability of science to become better and better over time in its understanding of complex phenomena and to thus present more reliable forms of knowledge makes it a very different phenomenon from “religion” but not necessarily from theology, rightly construed as a reasoning strategy that may actually share with the natural sciences much of the rich resources of human rationality. On this view there would indeed be good arguments to see theology as a second order activity also and religion rightly as a first-order phenomenon. Throughout Drees’s paper, however, this distinction is blurred—clearly to the detriment of theology. As a result, Drees’s argument still seems to be firmly rooted in the great modernist debate (cf. Bell 1996, 179) where religion and science are fundamentally polarized, science emerges as a superior mode of knowledge, and theology is inevitably rejected.

The theological position that eventually seems to develop from Drees’s naturalism, although in my view never clearly distinguished from his views on religion, seems to be consistent with his minimalism: this religious naturalism, although in no way making any realist claims, in fact does not want to deprive us of a rich religious language that may still be appropriate, functional, and sincere for certain pragmatic purposes. In this sense naturalism does not have to imply atheism (cf. pp. 528, 534). Of course this language will be filtered through the minimalist grid of a previously chosen naturalism. But the minimalism implied by this ontological naturalism also seems to be strangely at odds with the fact that Drees still wants to talk about a radically transcendent Creator (cf.

p. 534), which is somehow also identified with the prime cause of the web of natural causes in our world. This kind of God seems to be inconsistent with his minimalism, though it is exactly this kind of notion of God that has been exposed by postmodernists and feminists alike as truly modernist, foundationalist, and fundamentally patriarchal (cf. Moore 1995; Wertheim 1995). Drees may therefore be better off by jettisoning the superfluous religious metaphysics he suddenly employs.

Even if I may personally not agree with the limited scope imposed here on religious language by his conscious choice for naturalism, I am impressed with Drees's clear choice *not* for a focus on the evolutionary process as a whole—and then for an argument that may claim to justify a religious view of evolutionary reality—but rather for a focus on particular religious traditions and how the wisdom from our pasts may shape human rationality to allow for a “functionalist,” “useful,” “powerful,” and even “prophetic” role for religion (cf. pp. 540–41). If this were to lead to an awareness of the rich shared resources of religious and scientific rationality, the same contextual argument may have opened up doors to a more nuanced conversation about the shared assumptions of *some forms* of religious and scientific language. The argument, however, remains caught up in modernist categories, and we still seem to be forced to choose between “natural” and “supernatural,” “objective” and “subjective.”

Without these kinds of questions it would be hard to determine whether the minimalism inherent in Drees's carefully constructed naturalist view of religion could ever claim more than a functional role for religion. Then, however, the significance of the “scientific image” would again be that it fundamentally determines and finally shapes the meaning of religion. At that point, however, such a naturalistic view of religion should perhaps come out of the closet and honestly claim yet another “victory” for an allegedly superior natural scientific rationality. Drees's modernist *ontological naturalism* thus seems to be miles away from Rouse's postmodern *California naturalism*, but neither one of these naturalisms seems to have managed yet to deal adequately with the problem of human rationality.

#### RESPONSE TO J. F. HAUGHT AND D. M. YEAGER

In their paper, Haught and Yeager give a detailed and accurate description of Polanyi's postcritical philosophy and then proceed to argue that this powerful attempt to join a hierarchical vision of traditional metaphysics with a cosmology of emergent evolution could succeed in exposing the limitations of scientific reductionism while at the same time providing the resources for reconceptualizing the notion of God in a scientific age. Underlying this discussion, however, is Polanyi's theory of knowledge, which can be seen as one of the first and most powerful

instances of postmodern thinking: not only does there seem to be consensus that this theory of knowledge accommodates faith claims better than other theories of knowledge, but Polanyi's strong sense of participatory knowledge radically breaks apart modernist ideals for the complete objectification of all knowledge and the resulting foundationalist distinctions between subject and object (cf. p. 555). Polanyi's epistemological holism indeed seems to provide the outlines for a powerful vision for exploring the rich resources of human rationality and for the interdisciplinary conceptual space this may create for the ongoing theology and science dialogue. The difficult question, however, will be the following: can a seemingly "postmodern" epistemology—consciously *decoupled* from a modernist metaphysics—really be successfully *recoupled* to a fruitful religious metaphysics?

Haught and Yeager argue that what is often seen as Polanyi's vitalist metaphysics ultimately should rather be seen as a theological metaphysics (cf. p. 567). Polanyi specifically critiqued modernist notions of impersonal knowledge and developed an ontology of commitment where notions of participation and achievement would be crucial. It is precisely this vision that enabled Polanyi to engage in a lifelong opposition to scientific and materialist assumptions, in which modernist culture has typically embedded its understanding of both life and knowing. Polanyi's robust metaphysics is complete when not only thinking beings are reinstated as "active striving centers" but also nonhuman creation is animated as complex, centered systems of initiative and striving. The metaphysical presuppositions embedded in this "correlative system of beliefs" are—according to Haught and Yeager—boldly and unapologetically realist, personalist, dynamic, and teleological (cf. p. 549). Furthermore, their interpretation of Polanyi's teleological metaphysics as "finalism" is supported here by linking it to Thomas Aquinas and to Leibniz's philosophy. This, however, certainly makes the Polanyian postcritical philosophy a postmodernism with a difference. In light of the theme for this section of *Zygon* (Postmodernism and the Dialogue between Science and Religion), Haught and Yeager surely need to show how the seemingly *postmodern* aura of Polanyi's participatory epistemology—after being de-coupled from a *modernist* epistemology—can be plausibly re-coupled to what now seems to emerge as a *modernist* or even *premodern* teleological metaphysics.<sup>2</sup> Unless, of course, they would want to argue that this kind of seemingly antipostmodern metaphysical move may be the fate of all Christian theological attempts to discern a plausible notion of God's presence and providence in our world.

Andy F. Sanders recently, and similarly, argued that Polanyi's embeddedness in Enlightenment thinking explains why it is possible to recognize this tension and even to see Polanyi's epistemology in certain

respects as both “modern” and “postmodern” (cf. Sanders [1991] 1992, 15ff.). On this view Polanyi’s early postmodernist epistemology becomes a restorative epistemology in which certain essential elements of Enlightenment thinking are rescued from being threatened or forgotten. Sanders goes on to argue that the modernist dimension of Polanyi’s position is revealed by pointing out the modernist, possibly even premodernist, ideas to which he clearly adheres. These ideas are: the ideal of truth as a regulative standard to which we ought to submit ourselves, his strong, almost naive, scientific realism, an implied theory of truth as correspondence, and his openly professed commitment to natural science as by far the most reliable guide to knowledge and truth ([1991] 1992, 17). For Sanders, the solution of the problem of finding coherence in Polanyi’s overall position might be found in a proper interpretation of his methodological dogmatism and his epistemological fallibilism ([1991] 1992, 19).

Haight and Yeager, then, are successful in showing how very post-modern Polanyi was in rejecting the idea that there is an objectivist, natural world “out there” for natural science to be about, a natural world that supposedly is entirely distinct from the ways human beings as knowers and agents interact with it. With this epistemological move, Polanyi certainly anticipated the kind of postmodern science where scientists are recognized as situated and participatory agents with inescapable partial positions and with the ability to transform concrete situations through specific actions (cf. Rouse 1991a, 162). This is also the reason why Polanyi’s philosophy is such a rich resource for overcoming dualisms and for avoiding the kind of reductionism spawned by religious naturalism, as well as some ultramaterialist views of evolution that seek to explain away completely the seemingly pervasive need of our species for deeper religious meaning.

Haight and Yeager also succeed in showing that Polanyi still provides a worthy alternative to the modernist excesses of some materialistic and extreme forms of neo-Darwinism. Even if the debate about Polanyi’s finalism and his appeal to inner directedness, commitment, and achievement should rage on (cf. p. 557), it would still remain true that he has provided us with powerful arguments against hyper-Darwinist versions of biological reductionism and evolutionary materialism. (To the claim that Darwinian science and natural selection can never fully account for emergent novelty or explain the rise of life out of lifelessness, Richard Dawkins may still want to reply, “Not yet!”). Polanyi’s philosophy, in spite of the ongoing debate about its metaphysics and its coupling to a postmodern epistemology, has already powerfully revealed not only the limitations of a (modernist) natural scientific rationality but also the fiduciary rootedness of *all* knowledge. We now know that—in science as

in theology—the choice for one research tradition above another and for one viewpoint above another can never be completely justified and that in our choices and judgments the rich cognitive, evaluative, and pragmatic resources of human rationality are revealed. And exactly at this point Polanyi's philosophy contributes most in creating a valuable post-foundational space for the interdisciplinary conversation between theology and science.

#### POSTFOUNDATIONALISM IN THEOLOGY AND SCIENCE

A positive appropriation of some constructive forms of postmodern critique finds its main focus in what I am calling *postfoundationalism in theology and science*. Postmodern critique, as we saw, first of all implies a pointed rejection of all forms of epistemological foundationalism as well as those ubiquitous, accompanying metanarratives that so readily claim to legitimize all our knowledge, our judgments, our decisions, and our actions. Both in theology and philosophy of science, foundationalism is often rejected in favor of nonfoundationalism. Philosophically non- or antifoundationalism can certainly be seen today as one of the most important roots or resources of postmodernism. Nonfoundationalists deny that we have any of these alleged strong foundations for our belief systems and argue instead that our beliefs all form part of a groundless web of interrelated beliefs. In a strong reaction against modernist and generic notions of rationality, nonfoundationalism also highlights the crucial epistemic importance of community, the fact that every community and context has its own rationality, and that any social activity could in fact function as a test case for human rationality. In its most extreme form, nonfoundationalism will imply a total relativism of rationalities and, in a move that will prove to be fatal for the interdisciplinary status of theology, will claim internal rules for different modes of reflection. This is the kind of relativism that will make the theology and science dialogue impossible, a relativism so complete that any attempt at cross-disciplinary conversation seems to face near-complete incommensurability.

Over against the alleged objectivism of foundationalism and the extreme relativism of most forms of nonfoundationalism, postfoundationalism in theology and science wants to fully acknowledge contextuality, the epistemically crucial role of interpreted experience, and the way that tradition shapes the epistemic and nonepistemic values that inform our reflection about both God and our world. At the same time, a postfoundationalist notion of rationality would want to point creatively beyond the confines of the local community, group, or culture toward a plausible form of interdisciplinary conversation. Postfoundationalism is revealed as a viable third epistemological option

beyond the extremes of objectivism and relativism, of foundationalism and anti- or nonfoundationalism. Postfoundationalism in theology and science will therefore be held together by one overriding concern: while we always come to our cross-disciplinary conversations with strong beliefs, commitments, and even prejudices, postfoundationalism enables us at least to acknowledge epistemologically these strong commitments, identify the shared resources of human rationality in different modes of reflection, and then to reach beyond the walls of our own epistemic communities in cross-contextual, cross-cultural, and cross-disciplinary conversation.

Finally, in my response to these two very challenging and stimulating papers, I have explored the thesis that both modernism and postmodernism, as contemporary cultural phenomena, have been unable to come to terms with the issue of rationality in any positive way. As a result of this, nearly all of the stereotyped ways of relating theology and science through models of conflict, independence, consonance, harmony, integration, or dialogue are likely to be revealed as too simplistic generalizations about the relationship between these two dominant forces in our culture. The challenge of postmodernist pluralism, however, not only implies a heightened awareness and historical sensitivity to the shifting boundaries between theology and science but also makes it virtually impossible to even speak so generally about “rationality,” “science,” “religion,” “theology,” and “God.” This necessitates an epistemological awareness of the fact that “theology” and “science” never exist in such a generalized, abstract sense but always in quite specific social, historical, and intellectual contexts. A postfoundationalist notion of rationality is therefore embedded in this kind of historicization of scientific and theological projects. As such, it clears an interdisciplinary space for thinking between more than one knowledge system or reasoning strategy in what Sandra Harding has called a “borderlands epistemology.” In this sense our “orders of knowledge” always have also been our “orders of society” (cf. Harding 1996, 15ff.). As a result, any discussion of the rationality of theology and the sciences should always be situated within the context of living, developing, and changing traditions.

The postmodern mood in theology and science thus confronts us with serious and quite concrete challenges. To try to deal with these would be to ask whether our postmodern skepticism will allow us to continue trusting in the ability of our language to somehow “hook up” with the world. It would also be to ask whether postmodern religion can still provide us with a certainty of faith that will “weigh us down” or whether we are doomed to “the unbearable lightness of being postmodern” (cf. Percepe 1991, 118ff.). I am convinced that, for the theology and science dialogue to have a purpose and to be carried out meaningfully, we seriously

need to try to find answers to these questions. A first step in the right direction will be to rule out one of the most important and influential misconceptions about postmodern thought, that is, the assumption that it always is radically opposed to modern thought. Rather, it is important to view postmodern critique as an ongoing and relentless critical return to the questions raised by modernity. From this perspective, postmodern thought is undoubtedly part of the modern and not modern thought coming to its end. Seen in this way, the modern and the postmodern are also unthinkable apart from one another, because the postmodern shows itself best in the to-and-fro movement between the modern and the postmodern (cf. Schrag 1992, 7), that is, in the ongoing and relentless interrogation of our foundationalist assumptions. Following Lyotard (1984, 79), it becomes possible to acknowledge the postmodern as part of the modern. Or, in Calvin O. Schrag's words, "It is thus that the discourse of modernity remains within the web of the discourse of postmodernity" (Schrag 1992, 17). It therefore is possible to appropriate postmodern thought in a constructive way by interpreting it as a reflection on the potential, the nature, the shortcomings, and the darker sides of modernity (cf. Lötter 1994, 159).

For theology, the shift to postmodern thought will immediately mean that central theological terms like "religious experience," "revelation," "tradition," and "divine action" can no longer be discussed within the generalized terminology of a metanarrative that ignores the sociohistorical location of the theologian as an interpreter of experience and an appropriator of tradition. Within the context of a postmodern, holist epistemology, it will eventually also prove to be epistemologically impossible for theologians to continue seeing religious experience and tradition (which includes theological interpretations of revelation) dualistically as two opposing poles that somehow have to be related to one another (cf. Dean 1988, 20). Trying to think through the troubled and confused relationship between theology and science, as well as the complex sets of epistemic and nonepistemic values that shape the rationality of each, we might begin to realize that, for the theologian willingly caught up in this dialogue, postmodern faith need not be so "heavy" and "serious" and that we can indeed readjust our thinking to resist the excessive "weight" of any form of foundationalism, religious isolation, or intellectual manipulation. This kind of epistemological fallibilism will not get us that one, maximally ideal, modernist knowledge system. Instead of that one perfect representation of God or of the world, however, it may yield for us a "collage" of knowledge that aims to be the most reliable, the most useful, and the most meaningful we have (cf. Harding 1996, 22).

## NOTES

1. According to Stephen Toulmin, the phrase "postmodern science" was coined by Frederick Ferré (cf. Toulmin 1985, 210).
2. I am grateful to LeRon Shults for his valuable and insightful contributions to our discussion of this issue.

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