Relationality and Health: A Transversal Neurotheological Account

with Pat Bennett, "'Landscape Plotted and Pieced': Exploring the Contours of Engagement between (Neuro)science and Theology"; Pat Bennett, "'Things Counter, Original, Spare, Strange': Developing a Postfoundational Transversal Model for Science/Religion Dialogue"; and Pat Bennett, "'Áll Trádes, Their Gear and Tackle and Trim': Theology, Cognitive Neuroscience, and Psychoneuroimmunology in Transversal Dialogue."

"THINGS COUNTER, ORIGINAL, SPARE, STRANGE": DEVELOPING A POSTFOUNDATIONAL TRANSVERSAL MODEL FOR SCIENCE/RELIGION DIALOGUE

by Pat Bennett

Abstract. This second of three articles outlining the development and practice of a different approach to neurotheology discusses the construction of a suitable methodology for the project based on the work of J. Wentzel van Huyssteen. It explores the origin and contours of his concept of postfoundational rationality, its potential as a locus for epistemological parity between science and religion and the distinctive and unique transversal space model for interdisciplinary dialogue which he builds on these. It then proposes a further development of the model which has the potential to produce a very different type of additional and original dialogical outcome. While such "transversal" outputs may initially seem counter and strange they not only flow naturally from the models' own inherent dynamics but also open up the possibility of a distinctively different form of neurotheology.

Keywords: epistemic parity; Susan Haack; interdisciplinary dialogue; Larry Laudan; neurotheology; postfoundational rationality; Calvin Schrag; transversal spaces; J. Wentzel van Huyssteen

> Glory be to God for dappled things . . . –
> All things counter, original, spare, strange;
>
> Gerard Manley Hopkins

In the previous article (Bennett 2019a), I explored some of the enduring tensions which underlie science/religion[1] dialogue and discussed the

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implications of these for attempts to bring together the discourses of theology and neuroscience in a coherent way. I also argued that the neurotheological projects of both James Ashbrook and Andrew Newberg – two leading figures in the field – run into difficulties because of, among other things, the lack of a suitable methodological strategy for negotiating these points of tension and difficulty. Finally, I suggested that what was needed was a robust methodology which aids the selection of a suitable ground for fruitful engagement between the disciplines and also provides a mechanism for setting up and supporting a genuinely bidirectional exchange of ideas, data, and information around such loci which can generate distinctive, novel, and coherent neurotheological understandings of the issues under consideration The current article – which is an expansion of an earlier and much briefer account (Bennett 2015) – represents an attempt to delineate and develop such a methodological strategy based on the work of J. Wentzel van Huyssteen. It falls into three broad sections: the first and second explore van Huyssteen's reconfiguring of rationality and his "transversal space" dialogical model, respectively. The final part suggests a way in which this model could be further developed as a vehicle for a nonreductive, nonassimilative dialogue between neuroscience and theology of the kind envisaged in the previous article. Since the underlying philosophical concepts are vital to understanding both van Huyssteen's model and my proposed extension, these will be discussed in some detail. The concluding article of this set (Bennett 2019c) will then outline how this "transversal" methodology was used in my doctoral project (Bennett 2013) to explore the connection between human relation experience and health outcomes via moderation of immune signaling pathways.

Questions about the nature of knowledge—its sources, construction, and validation—have always been a key part of the human pursuit of understanding. In the West, paradigmatic shifts have seen pre-Enlightenment knowledge grounded in revelation and legitimated by the authority of sacred texts give way to the narratives of modernity, founded on the appeal to rationality and the valorizing of the scientific method. However, these in their turn have now been challenged by the discourse of postmodernism with its suspicion of power relations, rejection of metanarratives, and emphases on the relative, context-dependent, and socially constructed nature of knowledge.

Both shifts have implications for attempts to connect scientific and religious narratives and understandings. In the case of the first, its accompanying change in perception as to what constitutes "reliable knowledge" about the world brings into question the ability of, and extent to which, religious thinking can contribute to this, something which has heightened and reinforced the epistemological and ontological tensions outlined in the previous article (Bennett 2019a). With the current shift, the challenge to the very heart of modernist assumptions about objective knowledge

moves the focus of contention back to science, questioning its hegemonic claim to be the gatekeeper and arbiter of all "real" knowledge of the world. Inevitably, these postmodern critiques have been strongly resisted, particularly from within the scientific establishment itself (Gross and Levitt 1994; Koertge 2000; Brown 2001; Sokal 2010). Nevertheless, and even when their extreme forms are discounted, they have still been acute and important interlocutors of modernist epistemologies, and as such have expanded our understanding of the nature, purpose, and acquisition of knowledge: one need not embrace the anarchism of Paul Feyerabend to agree with Mary Midgley's assessment (2006, 50) that the idea that science represents a free-standing skill which is both omnicompetent for all human exploration and has a monopoly of rationality is simply no longer tenable.

It is this idea of rationality as a shared resource which lies at the heart of van Huyssteen's approach and underpins the dialogical model used in his 2004 Gifford Lectures (van Huyssteen 2006), on which I will be drawing. In moving the locus of parity between science and theology, this approach offers particular promise from both a general and a specific perspective: first, it negotiates a distinct path between the foundationalism challenged by postmodern thinking, and the extreme relativism it advances as a replacement. Second, the disciplinary rootedness, intellectual robustness, and cognitive fluidity which are its cardinal features provide a promising way of addressing some of the particular issues and demands of neurotheological engagement identified in the previous article. It also, as I will argue later, offers the potential to develop a distinctively different form of neurotheological engagement and output. A necessary first step in understanding the model and its extension is to explore the reconfigured understanding of rationality on which it is predicated.

RECONFIGURING RATIONALITY

In identifying rationality itself as being under direct challenge from post-modernity (van Huyssteen 1999, 3), van Huyssteen's primary concern is how to prevent its resources becoming lost and dissolved in the problems associated with postmodernism. While he is willing to acknowledge and accept certain elements of postmodern critiques against foundationalism and, along with this, to set aside the associated modernist notions of rationality, he comprehensively rejects the nonfoundationalism and contextualism with which postmodernity wishes to replace these notions. His approach is thus, with the support of various different pragmatist philosophers, to attempt to find a viable and robust understanding of rationality which avoids falling into the trap of either the "overstatements of universality and objectivity" of the former or the "overemphasis on contextuality and personal judgment" of the latter (van Huyssteen 2006, 12). The resulting reconception of rationality moves it from being understood as an abstract cognitive

notion to being seen instead as a complex and embodied set of practical evaluative and problem-solving skills, arising as a result of evolutionary processes. This skill set involves both judgment and accountability, and operates across the many different domains of human enquiry and knowledge. Moreover, it is through its actualization in problem solving that we identify and realize the key epistemic values of intelligibility and optimal understanding, and learn the crucial epistemic skills of discernment and responsible judgment (van Huyssteen 2006, 11).

This formulation has important consequences for the dialogue between science and theology because it establishes a completely different basis for claiming epistemological and cognitive parity between the disciplines (van Huyssteen 2006, 59ff). It allows us to acknowledge important differences in their reasoning strategies whilst also recognizing significant epistemological overlaps between them because of their shared rational resources (van Huyssteen 1999, 187–88). Hence, while the skills might be more refined in science, effective problem solving and good judgment reach beyond the sciences and already form part of the common sense reasonableness by which we live our daily lives (van Huyssteen 1999, 12). In itself this insight is not new: "Darwin's bulldog" himself observed that science was "nothing but *trained and organized common sense*" (Huxley [1893]2011, 45, original emphasis). However, van Huyssteen goes beyond mere observation, developing a detailed case from bases in philosophical and evolutionary epistemology to support his contention.

He initially develops these ideas in close dialogue with Calvin Schrag's dissection of the postmodern challenge to modern foundationalism (Schrag 1992). Both see the problematization of rationality itself, particularly as it figures in the discourse of modernity, as a key motif of postmodern discourse (Schrag 1992, 7; 1994, 61) and both embrace the postmodern critique of the classical and modern claims for universality, while at the same time using postmodernism against itself to develop a more productive alternative to the relativity which it proffers (Schrag 1994, 75; van Huyssteen 2006, 12).

Schrag sees rationality not simply as a cerebral faculty but as a practical skill ranging over and across the array of actions and experiences which form our lives. As such, it engages these and knits them together through three intercalated phases of "communicative praxis": praxial critique, interactive articulation, and incursive disclosure (Schrag 1992, 63). Engaging these "coefficient dynamics of transversal rationality" allows the formation of transhistorical judgments and assessments which avoid both the discredited universalism of modernity and the disruptive heterogeneity of postmodernism (Schrag 1994, 75). This idea of the transversal operation of rationality also becomes a key feature of van Huyssteen's dialogical model.

Praxial critique is essentially a pragmatic dialectic of participation and distanciation. The first provides an entwined "knowing how and knowing what" of discourse and action arising from "the ongoing life of our intercommunal situatedness in the world" (Schrag 1992, 64). The second involves a stepping back from this knowing in order to "discern what it is that has been going on behind our backs" and furnishes the necessary and distinctively critical moment of rationality. Both elements are vital: participation without distanciation is blind to the resources of critical evaluation, while distanciation without participation cannot offer discernment since this requires the prejudgments which flow from our specific situatedness in worlds of language and social practice (Schrag 1992, 64–65). Hence, the dialectic enables different options to be distinguished and assessed through the employment of practical judgments whose criteria are not antecedently defined (Schrag 1992, 61–64). This "transversal" rationality thus enables us to review the range of thoughts and actions which make up our situated experiences and to identify areas of consensus and dissensus between them. Furthermore, it also enables us to discern where organic connections already exist and where, if established, they might allow modification or transformation to occur, or conversely where there is a complete absence of connectional potential (Schrag 1994, 66–70). There are clear resonances here with some of the methodological requirements identified earlier as necessary for the development of a robust and coherent neurotheological approach.

In the second key movement of communicative praxis, transversal rationality then finds its expression through interactive articulation of the choices made in praxial critique and of the best reasons supporting these (Schrag 1994, 70). Once again, rationality moves from being understood as simply an abstract mental act and takes form instead through social practice: the understanding and articulation of how our beliefs and praxes "hang together, bind and separate, come to be and pass away," and of the background features through which such practices are expressed and shaped (Schrag 1994, 71). van Huyssteen further argues that this articulation is also anticipative in the sense that it identifies and marks out new possibilities for both discourse and praxis (again a useful pointer to dialogical potential). This provides a new benchmark against which past and present forms of these can be reevaluated. Critically, it also preserves praxial critique from being simply deconstructive, and thus takes it beyond the problems occasioned by extreme postmodernism (Van Huyssteen 1999, 137–38). Once again, the necessity of articulating the reasons for our rational choices is underlined as an important element of both postfoundational rationality and the kind of interdisciplinary dialogue which it can engender and sustain. As we will see, this also becomes a critical element of transversal dialogue in the form of a mechanism for selecting and winnowing material to be included in it.

Whereas articulation grapples with meaning, discursive disclosure is seen as being "an act of reference" (Schrag 1992, 141) which prevents rationality becoming re-enmeshed in a hermeneutical subjectivism and self-enclosed textualism. The incursive revelations of otherness into its dynamic serve as a reminder and reaffirmation of its connection with the concrete life-world, giving rise to the experience and praxis on which it is operating. Disclosure therefore reminds us of the fact that we relate to our world(s) only through interpreted experience (van Huyssteen 1999, 138) and this, and the associated dynamic of experiential accountability, become critical features of van Huyssteen's articulation of rationality and thus central to his dialogical model.

What Schrag's approach offers therefore is an account of rationality which is configured neither in terms of a vertical appeal to ahistorical foundations, nor of a horizontal one to localized contextuality. Instead, it involves a transversal appeal to specifically embedded and yet interconnected experience and custom. This is not merely a play of consciousness over a range of experiences, but instead represents an active extension over, and linking together of, various forms of discourse, modes of thought, and action. As such this transversal rationality "resides in the domain of our social, communal and institutional practices" (van Huyssteen 1999, 136). This understanding offers fruitful possibilities to both scientific and theological thinking. Moreover, in facilitating the transcendence of specific context while still in a very real sense remaining rooted in it, it also opens up the possibility of a completely new way of approaching interdisciplinary dialogue. But before this can be realized, a related and crucial question of what a postfoundational notion of rational accountability would look like must also be addressed (van Huyssteen 1999, 140).

REDEFINING EPISTEMIC RESPONSIBILITY

Alongside and intimately related to this reconfiguring of rationality, van Huyssteen also reconceptualizes the epistemic quest itself. Because this can no longer be conceived within a framework of modernist notions of linear progress, absolute truth, and standardized knowledge, van Huyssteen redefines it instead in terms of making progress toward optimal understanding in any given situation. Hence, the epistemic skills of rational judgment and theory choice are seen as forming part of a fallibilist process of progressive problem solving (van Huyssteen 1999, 12). Using the high-value language of "epistemic responsibility," he designates it "possibly the most important epistemic goal that shapes the way we interact with others, ourselves and our worlds on a daily basis" (van Huyssteen 2006,11).

This restatement of the epistemic quest brings two key questions in its wake which must also be addressed: what constitutes "optimal understanding," and by what mechanisms do we make progress towards it? The quest

for intelligibility is a crucial factor for van Huyssteen here but, as his reconfiguring of rationality makes plain, this can no longer be inextricably tied to modernistic notions of foundationalism or to a hope for the establishment of indubitable certainties (van Huyssteen 1999,114–15). Instead, he sets about establishing a postfoundational basis for the concept, envisaging it in terms of making assessments of, and judgments about, the relative problem-solving potential of different models and theories. His major conversational partner here is philosopher of science Larry Laudan (1977, 1990, 1996), whose thinking on the nature of scientific progress, particularly his decoupling of the classical linkage between progress, rationality, and truth and his dissociation of progress and cumulativeness, are important to van Huyssteen's development of the connections between postfoundational rationality and the exercise of responsible epistemic judgment.

In defending science and its progress from the errors of positivism (Laudan 1996, 3–5) and the intellectually bankrupt readings of postpositivism (Laudan 1990, x), Laudan offers a fresh reading of the threads which bind truth, rationality, and progress, and which link these attributes with scientific theories. He argues that rationality, rather than leading progress by its power to discern the increasing truthfulness of theories, actually consists in making more progressive theory choices (Laudan 1977, 6). Moreover, he dismisses the assertion that what science accesses can be claimed as either "truth" or increasing verisimilitude to it (cf. Popper 1969, 228–34), arguing that we have no way of knowing whether or when this is in fact the case (Laudan 1977,125), a skeptical stance which meshes comfortably with van Huyssteen's rejection of foundationalist frameworks. The most appropriate measures of the progressiveness of theories are thus related not to their nearness to truth but to their problem-solving ability. Consequently, the role of epistemically responsible judgment is no longer a matter of assessing different theories for their degree of correlation with truth, but instead for their relative effectiveness in problem solving, and then judging which is the more successful in this latter respect.

Laudan also challenges the almost universal assumption that scientific progress is linked to cumulativeness, arguing this is not only incorrect but also belied by the history of science itself (Laudan 1977, 148–49). Hence, progressive theories are not those which simply expand the domain of solved problems but those in which the balance of problems solved (whether empirical or conceptual)—and the relative importance of these— outweighs that of those created. Being able to assess this, and to specify circumstances in which a theory can be judged to be progressive even at the expense of a loss of some problem-solving capacity, thus also becomes an important element in the exercise of epistemically responsible judgment. Similarly, since theories are never isolated entities but always situated within larger networks of research traditions, epistemic judgment also encompasses evaluation of the wider tradition in which any theory is itself

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located—something which becomes important in the proposed neuro-
theological methodology.

In thus freeing rationality from being understood as an abstract cognitive
skill employed in the assessment of the relative truth of competing theories
and recasting it as a tool set used to assess and evaluate their respective
problem-solving potential, Laudan offers firm support to van Huyssteen's
postfoundational reading and its cross-disciplinary applicability. Similarly,
his account of scientific progress allows van Huyssteen to reformulate the
epistemic quest as one of working toward optimal understanding of an
issue via increasing clarity and intelligibility (van Huyssteen 2006, 11).
In this quest, the judgmental tools of postfoundational rationality can be
employed with respect not just to problem-solving itself, but also to support
the evaluative discrimination which is essential for making progressive
choices.

It is also clear that rationality thus conceived is inseparable from both
our self-awareness and from the various communities in which we are
embedded. This raises the inevitable question as to the role which our
experiences play in the outworkings of rationality and brings us thus to
the connection between rationality and experiential accountability, and the
role which evidence plays in this. As we have seen, the central dynamic in
this re-envisioned account of rationality is one of articulation and critique
which facilitates a constructive appropriation of the return to locality and
context demanded by postmodern understandings, but with a process
of critical judgment sitting over and above these. However, a necessary
element of the successful functioning of this dynamic is recognition of the
connection between experience and the shaping of rationality itself—in
effect a return to the content of Schrag's third movement of "incursive
disclosure."

REMEMBERING EXPERIENTIAL ACCOUNTABILITY

Our specific embeddedness within a particular culture and time, our
self-awareness, and our self-conceptions are not only intrinsic to rationality
but also vital points from which any account of the values that shape
human rationality must begin. Moreover, since the person-sensitive nature
of rationality inevitably leads toward the attuning of our beliefs, decisions,
and actions to the overall pattern of our experiences, we will always tend to
find these rationally compelling (van Huyssteen 1999, 271). Hence, both
theological and scientific reflection are also set within a wider community
context, and the reflections of these communities give rise to the concepts,
models, structures, and language which also shape the experiential aspects
of rationality: in the domain of science, choices about experiments, obser-
vations, and interpretation are theoretically selected and function within
the network of presupposed theories that constitute a specific research

strategy (cf. Smolin 2008). To make such claims is not in any way to accede to the postmodern deconstruction of science, but rather to recognize both how scientific belief has an inescapable personal dimension of commitment (cf. Polanyi 1962, 312; Ricoeur 1967, 351), and how all scientific knowledge can be seen as beginning in a local context. This is an important consideration with respect to some of the neuroscientific data alluded to in the third article and will be discussed further there. Similarly, religious experience is always interpretation-laden—shaped by the particular beliefs and commitments of the community in which it arises. Hence, in both science and theology, beliefs are both brought *to* and derived *from* experience, and interpreted experience thus becomes the matrix from which meaning and knowledge arise (van Huyssteen 1999, 191). A postfoundationalist model of rationality requires finding a balance between this matrix and the broader networks of belief in which such rationally compelling experiences are already embedded (van Huyssteen 1999, 14), something which is equally true for both science and theology. It is only once we recognize and acknowledge these roles which interpreted experience plays in shaping our access to reality that we can then engage the epistemic skill of responsible judgment.

Ultimately, then, what we know of the realities on which science and theology focus, irrespective of the extent to which these may be "mind-independent," represents information which is always and only attained through an interpretation of our experiences. For theology, a vital consequence of this is that the content of belief can never be directly given in the experience itself; similarly, religious cognition cannot be understood as directly experiential (van Huyssteen 1999, 188). This raises an important issue for theology, especially regarding the manner and extent to which its practitioners feel compelled to ensure that their theology and cosmology are consonant in the contribution they make to their worldview (cf. McMullin 1981, 52). Van Huyssteen argues strongly that for theology such beliefs cannot be declared off limits but must be critically examined in interdisciplinary conversation (van Huyssteen 2006, 114). What is obvious here is that the shared experiential accountability and rational resources revealed by a postfoundationalist approach mean that the rationality of theology cannot be seen as opposed to that of science. Thus, any uncritical retreat to fideistic commitments seriously challenges the epistemic status of theological reflection as a credible partner in interdisciplinary dialogue (van Huyssteen 1999, 195). While personal convictions deemed to be rationally compelling are not debarred from cross-contextual discussions, postfoundational rationality means that such convictions must be opened to critical evaluation as a part of any such dialogue (van Huyssteen 1999, 202). This brings us up against the dialogical dilemmas caused by the issues of "many voices" and "nonnegotiable commitments" touched on in the previous article, and raises the possibility that van Huyssteen's approach might provide

a way of confronting these. It also brings to the fore the crucial matter of the nature and role of evidence and its relationship to experience.

RE-EVALUATING THE NATURE OF EVIDENCE

Drawing this time on the work of Susan Haack and her pragmatist reconstruction of epistemology (Haack [1993]2009), van Huyssteen once again negotiates a path between extremes—in this instance the foundationalist notions which he has rejected as no longer credible, and the endlessly circling self-referentiality which postmodernism seems to entail. Haack's epistemology is also an evolutionary one (Haack [1993]2009, 281), and her basic stance is taken against the Popperian ideal of "epistemology without a knowing subject" (Popper 1979, 106–52). Instead, she argues that, because claims and theories are always "somebody's, or somebodies'," any theory of warrant must begin with the personal and then move to the social, before it can get to grips with the impersonal sense in which we speak of a well-warranted theory or an ill-founded conjecture (Haack 2007, 60ff). Arguing that all knowledge is anchored in experience but is then justified by claims to coherence, she proposes "'foundherentism' as a way" forward. Her goal is to explicate an epistemic justification which allows for both the relevance of experience to empirical justification, and for pervasive mutual support among beliefs (Haack [1993]2009, 117). The first of these requires an articulation of the interplay of causal and evaluative aspects, and the latter an account of the difference between "legitimate mutual support and objectionable circularity" (Haack [1993]2009, 118). Because van Huyssteen has already furnished himself with the former, he looks to Haack principally with respect to how she tackles the latter.

Haack examines in turn the different elements involved in belief: the differentiation between its state and content, the evidential and nonevidential components within the causal nexus of these, the strength of any justification for any belief, and the role of the passage of time. From this she argues a case that the justification of beliefs is never unidirectional but always involves relations of mutual support between them; moreover, that such support is not perpetually circular but rather is genuinely interlocking (Haack [1993]2009, 117–39). Here, she uses the helpful analogy of a crossword puzzle (Haack [1993]2009, 126ff) in which clues become analogues of the subject's experiential evidence, and already completed entries represent the resulting reasoned and justified beliefs which become part of their anchoring network. For any entry its reasonableness will depend on the closeness of its fit with both the clue and any other already completed intersecting entries, how reasonable those other entries are independent of the entry in question, and the overall state of completion of the puzzle. Similarly, how justified someone is in believing *that p* depends on how supportive their evidence is, the degree of security of any reason

independent of the belief itself, and how much of the relevant evidence, is included in that person's own particular portion. Hence, the good reasons for the beliefs we hold are always justified by a mixture of experience and other beliefs, that is, the explicandum is always couched in terms of "A is more/less justified in believing *that p* depending on . . ." (Haack [1993]2009, 58).

The fallibilism of Haack's approach, along with the way in which reason is employed to connect up, bind together, and evaluate different elements of experience, thus accords very closely with that of van Huyssteen. Moreover, her foundherentism offers support to key elements of his thesis—for example, the argument that epistemically responsible judgment will always imply a choice between good, better, and best reasons for retaining certain beliefs (van Huyssteen 1999, 224). Similarly, her notion of what counts as empirical experience, including as it does a wide spectrum of sensory introspective and memory experiences—all of which she argues are necessary for justified epistemic belief (Haack [1993]2009, 16, 274)—accords with van Huyssteen's view. A slight caveat here is that Haack is herself somewhat inconsistent in her application since, in keeping with her own rational precommitments, she admits to construing "empirical" in such a way as to exclude religious experience (Haack [1993]2009, 275). Van Huyssteen has also questioned whether in her application she is still in fact covertly privileging a species of scientific foundationalism (van Huyssteen 1999, 229). Nevertheless, he sees her approach to evidence and belief as essentially supporting his articulation of how postfoundational rationality operates.

In summary, then, van Huyssteen, through his engagement with Schrag, Laudan, and Haack, offers a rich, flexible, and well-supported revisioning of rationality which responds to the postmodern challenge without becoming dissolved and dissipated in it. This understanding sees rationality as a complex set of cognitive tools used for evaluation and expression which are shared across all domains of human investigative cognition. It recognizes and acknowledges the vital role of experiential understanding, and allows us to remain significantly connected with the formative traditions in which this arises. But at the same time, it also compels us to step outside of such traditions and stand in critical relation to them. Furthermore, it supplies us with the necessary skills and tools for this task, thus enabling us to reach out beyond our own immediate contexts in order to pursue plausible forms of intersubjective, cross-contextual, and cross-disciplinary conversation (van Huyssteen 2006, 10). Indeed, in constructing his account through diverse and many-leveled conversations with a range of other disciplinary voices, van Huyssteen himself does just this, and thus he also presents a vivid example of the skills of postfoundational rationality in action.

Van Huyssteen's approach is not without its critics. For example, Gregory Peterson (2008, 468–69) deems his dependence on evolutionary epistemology to be itself "transparently foundational," a charge which van

Huyssteen has vigorously rejected (van Huyssteen 2008, 513–14); and Richard Osmer has expressed concerns that the language of problem solving can be too easily assimilated back into the instrumental reasoning which characterizes science and technology and questioned its appropriateness for theology (Osmer 2006, 345). Nevertheless, van Huyssteen's undertaking represents a significant move forward in understanding the nature of rationality. Moreover, in effecting a critical shift in the center of gravity with respect to epistemological parity, it provides a very different basis for engagement between science and theology. This, in conjunction with the evaluative tools and critical imperatives which come in its train, opens up interesting new possibilities for constructing dialogue between the two disciplines.

RELOCATING EPISTEMOLOGICAL PARITY

The critical and novel moment here is that van Huyssteen's reconfiguring of rationality moves the epistemological locus of interdisciplinary connection from the *specific methodological* to the *shared rational*: under the postfoundational rubric, commonality between the disciplines becomes located first in the problem-solving activities which form the core of all investigative traditions, and second in their appropriation of the same tools of rationality for the prosecution of these, albeit within very different reasoning strategies. This move has a number of significant consequences from the dialogical perspective.

First, epistemological and cognitive parity is now understood as inhering in the shared use of the rational skills and tools which are common to humanity, rather than in an appeal to some universal guaranteed epistemology. Consequently, the common epistemic standards to which each discipline is answerable are thus no longer *domain-specific* but are *integral to the nature of rationality itself*, and hence epistemological sovereignty no longer resides with science. Instead, the rational merits of ideas and positions, particularly as they are proffered as contributions to dialogue, are evaluated not with respect to a particular worldview, or in terms of a perceived approximation to "truth" or "reality," but against the standards demanded by a postfoundational understanding of rationality: progress toward optimum intelligibility; the employment of responsible and justifiable epistemic judgment; a recognition and acknowledgement of the role of experiential accountability; and a willingness not only to engage critically ourselves with that which we find rationally compelling but also to open it up to critical evaluation by others. Such standards, along with the quality of epistemic humility which they entail, provide a distinctively different transversal route for evaluating the rationality of any stance within any particular research tradition. They also provide a way of selecting suitable contributors to any envisaged neurotheological (or other) dialogue, and in

the following article (Bennett 2019c) I will outline how this worked in practice in my own particular neurotheological project.

Second, moving the philosophical fulcrum for dialogue enables the epistemological and ontological tensions identified in the previous article to be negotiated in a more positive way. In linking disciplinary likeness to the centrality of problem solving, the distinctive differences in scientific and theological approaches are recognized and their validity acknowledged. Although the issue of criticality is not removed, the dynamics of postfoundational rationality present, as suggested above, a different framework within which specific theological positions and ideas can be evaluated in this respect, particularly in the context of being offered as contributions to dialogue. In liberating theology from the need to transform itself into natural science or perpetually defend itself against dismissal as nonscience, van Huyssteen's move also enables concentration to be focused on the development of theology's own unique perspectives; and also provides a way, through cross-contextual and interdisciplinary engagement, of strengthening the rational redeemability of these, thus increasing their dialogical potential.

Finally, this relocation of epistemological parity enables and facilitates a move away from any need to try and establish overgeneralized blueprints for how to "do" science/theology dialogue. Hence, it now becomes possible to focus instead on defining specific loci for engagement in terms of the very specific science and very specific theology which might be usefully engaged: as will become clear, the nature of van Huyssteen's model allows for the identification and development of precise dialogical intersections. From the specific perspective of pursuing neurotheological dialogue, this also offers a solution to the problem identified with respect to Newberg of potential territorial vastness. Simultaneously, the standards of accountability inherent in postfoundational rationality provide a way of assessing the suitability of specific voices as potential dialogical partners at such intersections, thus opening a way to approach the dilemma of "which voices?" raised in the previous article (Bennett 2019a).

RESHAPING DIALOGUE: A TRANSVERSAL MODEL

Starting from postfoundational rationality leads to a set of dialogical dynamics which are very different from those of more traditional models. This in turn enables a way of pursuing dialogue between science and religion which is very different in its aims, mechanics, and outcomes to those which have so far been the mainstay of the field. Van Huyssteen's model is basically conceived and executed using the ideas and language of transversality which arise from his explorations of rationality. This finds form in two important ways: first, through employing a notion of transversal reasoning by which dialogue is facilitated; and second, in the

delineation of what he terms "transversal spaces" in which dialogue can be located.

Transversal reasoning is essentially coterminous with the transversal performative dynamics at the heart of postfoundational rationality examined earlier. In summary, these are the skills which, through the cognitive fluidity they enable, allow us to gather and bind together the patterns of our experience; to set these within the wider contexts which enmesh us; to recognize the extent to which these shape our interpretations; and through discernment and articulation to give account of that which we take to be rationally compelling. In interdisciplinary exchanges, the same skill set enables us to work, again in ways commensurate with epistemic responsibility, at the intersections of very different disciplinary discourses as they come together in dialogue. Under the operations of transversal reasoning, questions of asymmetry and hierarchy become, as I have argued above, nonissues since interdisciplinary dialogue is opened up in a way which identifies the various contributory voices, whether from science, theology, or other disciplines, as different but equally legitimate ways of looking at the world.

Transversal reasoning thus allows us to move from context to context, across different disciplines and research traditions in search of what van Huyssteen terms "a wide reflective equilibrium" (van Huyssteen 2006, 31). This in no way implies that complete consensus is a necessary endpoint but is instead the fragile communal understanding which we might be capable of achieving in "the transversal moment" (van Huyssteen 2006, 219). An essential element of this process of moving across boundaries is the actualization of the "transcendence-in-rootedness" which transversal dynamics facilitate. This is the ability to retain a connection to our disciplinary commitments and beliefs and yet simultaneously to be able to consciously move beyond their constraints and explore other perspectives.

This dynamic of moving beyond is vital if we are to gain the maximum benefit from the interdisciplinary encounter. However, this is not simply about the possibility of being enriched by the insights, theories, or evidence that a different discipline finds to be rationally persuasive. It is also a recognition of the fact that, under the epistemic imperative of postfoundational rationality, we have an obligation to also stand in critical relation to our own beliefs and the traditions and worldviews which give rise to them. One arena in which critical reflection can shape disciplinary identity and endeavor is in the kind of transversal interdisciplinary encounter which van Huyssteen's approach enables. The freedom from competitive and assimilative pressures which his model entails not only provides the security to experience and explore the riches and the challenges of interdisciplinary dialogue, but also makes it dense with possibilities for fruitful outcomes.

Such freedom is also a function of the second element of van Huyssteen's elegant model, *viz.* the creation of a very different and distinctive location

in which the complex many-leveled connections and exchanges facilitated by transversal reasoning occur. These "transversal spaces"—which are key to the model's rich potential—sit *between* disciplines at their "porous boundaries" (van Huyssteen 2006, 9, 43) thus providing a unique locus for dialogue *outside* the confines of any one contributing discipline. Since they do not belong to any of the participating disciplines they are not constrained by any of their particular features *vis-à-vis* epistemological strategies or particulars of proof. Hence, they could appropriately be conceived as liminal spaces—Victor Turner's "realms of pure possibility" (Turner 1967, 97)—with all the openness of outcome possibilities inherent in this idea.

Rather than being a disciplinary construct, transversal spaces can more usefully be thought of as being *a shared rational space*. In fact, they are generated and sustained by the very nature of dialogue shaped by postfoundational rationality, and are thus places where the different disciplinary voices can operate with a freedom from the assorted constraints which characterize other models. Their distinctive shape, form, and function are a direct consequence of the shift in locus for disciplinary connection and the related change in epistemic standards previously outlined. The net result is that the voices contributing to dialogue need no longer be seen as in contradiction or competitive, thus allowing a dynamic of interaction which can be both expansive and challenging for those participating. From a neurotheological perspective, such spaces provide an ideal way of accommodating Newberg's insistence that neither the assumptions of science nor those of theology are to be taken as normative. Moreover, as I will argue further below, they can also be further developed in a way which enables them to support the production of distinctive neurotheological perspectives.

In identifying potential locations where transversal spaces might be generated, van Huyssteen draws on Schrag's mathematically informed picture of a line intersecting a system of other lines or interfaces (Schrag 1994, 64; van Huyssteen 2006, 20). The idea here is one of convergent paths moving toward an imagined vanishing point—the transversal space. Various things might point towards potential intersections, for example, common interests and shared research foci, or phrases in common currency in different disciplines (van Huyssteen 2006, 9). Once such possibilities have been identified, more precise specifications can further refine them. Van Huyssteen himself sees the ideal standard as involving specific theologians and theological articulations, entering into dialogue with similarly designated scientists, working within specified sciences on clearly defined, shared problems (van Huyssteen 2006, 5). In the third article, I will give some examples of how this can work in practice and how it can open up dialogical possibilities in unexpected ways (Bennett 2019c).

Osmer (2006, 343–44) has suggested that the lack of a clear selection principles potentially allows participants to avoid engaging with anything which challenges their viewpoint, and to privilege congenial dialogical

partners. However, van Huyssteen makes it clear that prior agreement is not a *sine qua non* of attempting transversal space dialogue (van Huyssteen 1999, 274; 2000, 430; 2006, 9). On the contrary, he follows Nicholas Rescher in rejecting consensus as the ultimate epistemic touchstone (Rescher 1995, 6–7; van Huyssteen 1999, 270). Moreover, safeguards against both an avoidance of risk and a privileging or protecting of material are built into the model through the dynamics of postfoundational rationality itself and its associated epistemic contract: any material admitted to transversal space dialogue must first of all be shown to be rationally defensible as this concept is understood within the rubric of postfoundational rationality, and thus no belief or material—either scientific or theological—can claim a privileged status with respect to interrogation within such dialogue.

In summary, then, transversal spaces are dynamic places of interaction which are based on the shared tools of rational enquiry and which come into transient existence as part of specific cross-disciplinary engagements. Their distinctive nature conveys a freedom which facilitates the exchange of ideas and insights, models, and reasoning strategies, in a nonassimilative and a multidirectional manner, thus allowing the possibility of mutual influence and critique. Boundary transgression, particularly with respect to the borders between the natural sciences and humanities, is usually viewed as a subversive undertaking; van Huyssteen's model, by restructuring specific boundary intersections as liminal spaces under the governance of shared postfoundational rationality, turns it instead into a potent driver in the quest for optimal understanding of a given issue. As such, his model more than fulfills the first of the methodological criteria which I earlier suggested were necessary for a neurotheological engagement, *viz.* the facility to enable a free and fruitful exchange between the very different perspectives of neuroscience and theology. A second key question is thus to also consider the sort of dialogical outcomes it might be capable of generating and whether its employment as a methodology for engaging theology and neuroscience could give rise to a genuinely different kind of neurotheological discourse.

Van Huyssteen himself regards the outcomes of any multidisciplinary transversal engagement to be essentially interdisciplinary (e.g., van Huyssteen 2006, 35, 39–40). That is to say, the output trajectory of the transversal space dialogue is one of return *back into* the contributing disciplines to expand, clarify, or challenge their respective understandings of the area being explored (van Huyssteen 2006, 264). Thus, he talks in terms of other disciplines providing "clues, challenges, criteria, or other forms of persuasive evidence that will help us push the limits of our own discipline" (van Huyssteen 2006, 309); he also raises the possibility of making "new and exciting discoveries" at the boundaries between disciplines (van Huyssteen 2006, 9), though such discoveries are still essentially disciplinary in nature. These are clearly valuable outcomes and ones which, when taken

in conjunction with the other key features of the model as I have discussed them here, promise a rich potential harvest for theological thinking. However, this approach to outcomes means that arguably the model, for all its strengths, may ultimately still fail to negotiate the disciplinary imbalance noted in the first article. Hence, the question as to what precisely theology contributes to such dialogue still lingers, along with the feeling of dialogical asymmetry. It also calls into question whether the model as it stands, its dialogical potential notwithstanding, can generate outcomes which could be considered as a genuine neurotheological discourse as this has been previously discussed. However, I believe van Huyssteen's model can be further developed in a way which is a natural consequence of the epistemic imperatives which drive it. As such, the proposed extension accords with both the inherent nature of the basic model and the postfoundational rationality which undergirds it. It is also totally in keeping with the liminal nature of transversal spaces that they can give rise to things "counter, original, spare, strange"—the novel configurations of the kind being envisaged here. Such "transversal outputs," as I will outline below, take the form of rationally and epistemologically defensible composite arguments and models which combine the insights and data of both disciplines without either reduction or improper blending. Thus, I believe they can (when involving theology and neuroscience) legitimately be designated as being distinctively neurotheological in nature.

RENDERING "TRANSVERSAL" DIALOGICAL OUTPUTS

Given the dynamics of postfoundational rationality and transversal dialogue as they have been set out in this article, a good case can be made that in some instances additional outcomes could indeed be generated alongside the specific interdisciplinary ones envisaged by van Huyssteen. Rather than being *back into* the participating disciplines, the trajectory of these would instead lie *between and beyond* them in a way very similar to the spaces themselves. Like the dialogue which engenders them, they would thus exist and be supported in the shared rational spaces between the disciplines. Hence, they too would neither belong to nor be fully constrained by these. Any such arguments and models would not therefore be either strictly 'scientific" or "theological" in form and expression. Instead, their drawing on and knitting together of disparate material brought into the transversal space by the contributing disciplines could see them appropriately designated as "transversal." Just as with the transversal dialogue itself, the epistemic standards to which they would be answerable would be those inherent in postfoundational rationality itself, rather than those of a specific disciplinary domain. The argument here is that the model's inherent characteristics validate the attempt, where appropriate, to use the different disciplinary contributions to build *composite* arguments

and models. Indeed, to do so is actually a logical development of the model itself, standing in direct continuation with the dynamic operations of both transverse rationality and the transversal space interactions themselves. Thus, it receives both sanction and support from the model's two central elements.

The hallmark of postfoundational rationality is a certain cognitive fluidity allowing us to identify, explore, and bind together different elements and patterns in our assorted experiences. Such skills enable us to set up and engage in the transversal spaces in the interdisciplinary way described, I would argue that this self-same cognitive fluidity can also allow us to range over and above the different developments *in the transversal space dialogue itself*; likewise the same practical skills of transversal rationality enable us to evaluate and connect elements from different discourses which are held in the transversal space as part of the interdisciplinary dialogue. In effect, this is simply the same dynamics and skills being engaged in connection with a different constellation of thought and action— that which belongs to the "situated experience" of a specific transversal space dialogue. As such, it can also be seen as being a natural extension of van Huyssteen's "first movement of transversal rationality" which identifies and evaluates the possibilities of viable and productive connections within specific interdisciplinary conversations (van Huyssteen 1999, 137). Similarly, it is also comfortably in line with the anticipative nature of rational articulation through which new possibilities for both discourse and praxis are identified and marked out.

The development of transversal outcomes also receives impetus from another integral element of van Huyssteen's refiguring, *viz.* the pursuit of optimal understanding, and its realigning with improved problem-solving ability, rather than with correlation to "absolute truth." This reconfiguration provides the imperative and furnishes the warrant for the use of the skills of rationality to pursue different possibilities for achieving these goals. It also becomes the means by which any resulting transversal argument or model can be evaluated. Thus, once again the formation of transversal outputs is seen to be a natural extension of the cognitive skills of postfoundational rationality which already undergird and facilitate the basic transversal space model. Moreover, the model's own internal regulation makes the development of such outputs not only an obvious but also a reasonably secure course to pursue in this regard.

The second key element offering validation and support for the proposed development to the model is the critical filtering mechanisms which are already integral to it and which ensure that any dialogical ground is already fairly specifically demarcated. This preselection of closely intersecting interests, even where there are dissenting voices, increases the likelihood of discovering elements from different disciplines which could potentially be connected to yield transversal outputs; moreover, the ability to identify

these potentially fruitful intersections is itself a key skill of transversal rationality. Thus, it can also aid the preidentification of conversations for which the development of a transversal output might be a likely spontaneous outcome, or a course worth actively pursuing. Another key element of the model facilitating these developments is that any data, theories, and models offered to a transversal dialogue are progressively winnowed through the mechanisms associated with epistemic responsibility which are applied at different stages and levels of the dialogical process. Hence, various elements which might be incorporated into a planned transversal output will have already been evaluated against the model's inherent standards of rational and epistemic accountability; thus, any proposed output is also likely to have generated a concomitant and robust account of its defensibility in these respects.

The notion of defensibility leads to the issue of what warrants might be offered in support of both the general concept being developed here and for any specific transversal outcomes which might be generated from a transversal space dialogue. Once again the inherent dynamics of both postfoundational rationality and of the model itself hold the key, this time through the nature of the evidential support for beliefs and claims which they enable. The same crossword analogy used earlier to argue a case for the feasibility of developing legitimate mutual support between beliefs (Haack [1993]2009,126ff) can also be used in support of both the development of transversal models and arguments generally, and also more specifically as a way of assessing the relative coherence and strength of any particular ones. It should be noted here that the transversal developments proposed involve neither the uncritical transfer of theological convictions into science to function as "data" within its systems, nor the placing of theological agendas under the direction of science—both of which van Huyssteen has rightly cautioned against in the context of transversal space dialogues (van Huyssteen 2006, 323–24). Rather, what is envisaged is that different disciplinary perspectives could interlock to provide the sort of "pervasive relations of mutual support" for a thesis or model which Haack ([1993]2009, 57) describes. Arguments and models might thus be built in response to particular questions, even when direct definitive evidence from within a particular discipline is absent, on the basis of mutually supportive, albeit radically different types of evidence, and an example of this will be offered in the third article (Bennett 2019c).

It is here that the applicability of Haack's crossword analogy becomes clear. If we translate the key features of supportiveness, independent security, and comprehensiveness already discussed into the context of the proposed transversal arguments and models, then contributions to a specific transversal space dialogue from different disciplinary voices can be seen as standing for the different entries in the puzzle and as offering support for other possible entries to be added, even if the clues leading to

these are not always completely clear; assessment of supporting evidence for each individual entry comes from the operation of the tools and dynamics already described, at both disciplinary and transversal level. There is likely to be variation in the degree of confidence with which any such entry can be made and thus, whereas some answers may be "inked in" with a fair degree of certainty, other elements of the model or argument being built may remain in the form of rather more provisional "penciled" entries, possibly to be revised at a future date in the light of new data or development of ideas. As such, this would be completely in keeping with the dynamics of epistemic responsibility entailed by postfoundational rationality; moreover, it addresses the issue of obsolescence raised in connection with Ashbrook's approach. Indeed, Haack herself uses the picture of a giant crossword with a mixture of blank entries, ones completed with indelible ink, and still others penciled in and rubbed out multiple times, to describe how the development of scientific knowledge itself proceeds (Haack 2007, 93–94). In addition to this method of evaluation, the strength of any proposed transversal model can also be judged on the same criterion as those proposed by Laudan with respect to scientific progress generally: the degree of conceptual clarification enabled, and the balance achieved between resolving/generating empirical and conceptual problems. Once again, such indicators of the coherence and usefulness of any particular argument or model thus generated are also completely consonant with the conceptualization of epistemic accountability which has been set out in this article.

My argument is thus that the proposed development of van Huyssteen's model to enable transversal outputs is not only a natural extension of its normal workings, but also demanded by the imperatives of the epistemic quest which the model serves. Furthermore, the identification and development of such outputs employs the self-same skills which are already at work driving the dynamics of the model as it currently operates.

In the light of these discussions, I want to propose that neurotheology might in fact be best conceived of as a transversal venture of the kind outlined here. This would help it to avoid the trap of becoming restricted to the neurobiological study of the cognitive markers of different aspects of religious life and thought. It would also allow theology to contribute more to the neurotheological enterprise than simply the provision of better definitions of spirituality, or improved design for studies of brain activity in connection with religious experience. The neurosciences are generating vast amounts of experimental data, much of which challenges long-held folk ideas about personal identity and the existence of the soul, free will and intentionality, morality and responsibility, and so on. Such themes have long been reflected on within different theological systems and thus, while clearly standing to gain insight from such neuroscientific data, theology also has much to contribute toward an expanded understanding in such arenas. Van Huyssteen's reconfiguration of rationality with its attendant

consequences for dialogical exchange, along with the extended transversal space model outlined here, open up the possibility of very different sorts of neurotheological projects which could deepen and enrich our understandings of humanness. In the final article of this series (Bennett 2019c), I will give an account of such a project in which theology, cognitive neuroscience, and psychoneuroimmunology—"their gear and tackle and trim"—are brought together in a transversal exchange which explores a complex issue located beyond any of their specific disciplinary reaches but potentially answerable through transversal engagement (Bennett 2013).

NOTE

1.   I use the term science/religion in these articles rather than science/theology as this is the most commonly used designator of the field.

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