Similarities and Differences between Theology and Other Sciences

Kerry Magruder, for Marty Folsom's Reading Group. June 12 & 19, 2025.

The first sections of Thomas F. Torrance, "Theological Science among the Special Sciences," in *Theological Science* (London, New York: Oxford University Press, 1969), 281-352; #1969-263g.

(Each non-indented bullet point below represents a specific paragraph.)

Introduction (pp. 281-286)

- "Theology is the unique science devoted to the knowledge of God..." (281)
    - Why are other sciences not devoted to the knowledge of God?
- A "theo-logical" way of thinking: "not from a centre in ourselves but from a centre in God..." (281-282)
    - Is it true that in every science we must think not from a center in ourselves but from a center in the object of that science?
- Theology interacts with every science: "Theological science is not therefore a special science in the sense to which all the other special sciences are bracketed off in their own specializations." (282-283)
    - What is meant by a "special science"?
    - Are there other sciences besides theology that are similarly "not a special science" in that sense?
    - How does the One God ground theology in a distinctive wholeness and unity?
    - What does TFT mean by affirming that theology's uniqueness "means that it does not overlap very much" with the authority of the special sciences, but "betrays itself when it seeks to acquire" that authority? (Note 1.)
    - What is meant by "bracketed off"?
      See my handout "The Transformation of Natural Theology: Reading GGT as Gifford Lectures," for Thomas F. Torrance, ch. 4 of *Ground and Grammar of Theology* (Charlottesville, Virginia: The University of Virginia Press, 1980), pp. 75-109; download at #1980-369e.
    - Do you think theology can find ways to dialogue with or to resonate with any other science?
- What is meant by the classic idea that theology is Queen of the Sciences? (283-284)
    - Does TFT affirm that theology presides over a hierarchy of special sciences?
    - How is theology concerned with humanity and nature?
    - What are the limits to the special sciences in seeking to understand contingent creaturely realities?
- Does theology stand to benefit from respectful dialogue with the special sciences? (284)
- "No direct comparison between theological science and the special sciences is possible." (284-285)
    - Only a comparison of relations.
- "Indirect comparision" may serve what kinds of purposes? (285-286)
    - Apologetic??
    - Preserve the purity of theology
    - Theological communication (to gain intellectual sympathy)
    - Guidance for special sciences so that they do not overstep their bounds by trying to apprehend God within a special science.

1.i. Similarities between Theology and the Other Sciences (pp. 286-295)

- (1) Theology, like other sciences, is a human inquiry (286-288).
    - Assumes the existence and intelligibility of its object.
    - Investigates its reality in a manner appropriate to "its own structure and order."
    - Employs models or cognitive tools with semantic realism, as "windows built into the structure of our thought ["noetic constructions"] through which the real nature of things ["ontic structures"] may be discerned..."
- (2) Respect for objectivity (288).
    - Reason actively at work: constructing models.
    - Reason passively at work: remaining open to reality, models open to criticism.
    - Models not archetypal (eternal, ideal) but ectypal (about actually existing things).
    - Key quote: "It is respect for the objectivity of contingent facts that characterizes every authentic empirical science, but theology makes that respect a religious as well as a scientific obligation."
    - Theology offers a greater obligation for objectivity, and a motivation for science.
- (3) Metaphysics arises after the fact, *a posteriori* (288-289).
    - No science should operate with a "*preconceived* metaphysics."
      (Metaphysics is the science of being, or ontology.)
    - Scientists cannot escape from metaphysics. The history, culture, and even language of science is metaphysics-laden. Presupposed ontological ideas – even regarding space, time, logic, causation, and natural law – must be brought to light and made subject to critique. Every science must be "dedicated to its proper object and method" without metaphysical distractions.
    - Sciences raise questions with metaphysical import, but are limited in their ability to address them.

    - The next paragraph summarizes these points about any science with respect to theological science in particular. (289-290)
    - "It is not enough for the theologian simply to disengage his thinking from philosophy in order to concentrate it scientifically upon its own special subject-matter,* for he must engage in his own meta-science and in his own form of meta-meta-science both to carry through the distinctive thought about the material content of his knowledge and to acquire the appropriate cognitive tools, logical and metaphysical conceptions, by means of which to articulate his knowledge. Here philosophical and scientific thinking are locked together as the theologian seeks to allow the nature of what he knows to determine the forms of his thought and speech about God and His saving acts. But in all this activity theology as a pure science makes use of metaphysical thinking solely in the service of its own distinctive ends." (290)
    - Substitute any science for theological science in the above quotation. Does it work?
    - The footnote in the first sentence of that quote (*) is particularly revealing about the necessity of any science both to disengage and to engage from other sciences, almost "against the world, for the world": "Disengagement of theology from philosophy is certainly necessary for the proper development of scientific theology, just as physics had to disengage itself from natural philosophy in order to be itself.... As Karl Barth has shown, this is very necessary for theology, and for its proper dialogue with the other sciences. But in order to engage in dialogue with philosophy theology must engage more positively in strenuous metaphysical and logical work *on its own ground*. Unless it does this it will find its positive results corroded through unconscious, and therefore bad, philosophical preconceptions...." (TFT's emphasis).

- (4) In any science, "investigations come up against a line beyond which they cannot penetrate and cannot even attempt to pass without inconsistency and error." (290-291)
    - This limit is more than just ignorance, since our ignorance is constantly increasing. A growing awareness of the unknown is a sign of progress in knowing. That progress will be endless.
    - "We cannot break free from the finite." Indeterminancy is relevant here as one form in which that limit presents itself. [Aristotle himself argued that such a limit exists, beyond what could be known in terms of his finite categories. Similarly Pascal, *Pensées*, that we are suspended between infinities on both sides, toward non-being and toward the source of Being.]
    - Observe TFT's use of the word "brackets" in this paragraph. Much needless ink has been spilled due to misunderstanding of Torrance's use of "bracketing." He uses it here to refer to aspects of reality which fall outside the domain of a particular science, toward which that science, in order to be faithful to its own nature, "must scientifically maintain a respectful silence." As I explain in the *Ground and Grammar of Theology* handout for ch. 4 (link above), "The term 'bracketing' has given rise to much confusion, but it does not signal a return to Traditional Natural Theology that needs to be completed by faith, nor an endorsement of 'methodological naturalism' in the natural sciences. Rather, when we see the 'bracketing' or 'methodological secularization' or 'completing' language, interpret it as a reference to respecting the kata physin methods of each particular science in the context of interdisciplinary relations between the sciences."
    - The relation of heaven to earth in theology provides a parallel to the relation between indeterminable and determinable in physics (291-292). Heaven is the "eschatological frontier."
- (5) The challenge of relating ordinary language to scientific language (292-293).
    - In any science, whether physics or theology or any other, ordinary terms take on a more and more technical meaning as the science develops historically. As a result, correlation between the two is not simple or obvious, for the meaning of the term "outruns the conceptions of ordinary language." Examples: charge, battery, planet, dwarf planet.
    - Occasionally, a technical term may need to be invented when no ordinary word can be appropriated. Example: shift to mathematical expression only, without accompanying language.
    - Not only does language take on a technical meaning, but our expressions reveal more than we can specify (293). Relations between language and reality "cannot be resolved into language alone."
    - Similarly in theology (293-294).
    - Examples of ordinary words shifted into technical terms: Father, Rabbi, Spirit. Trinity, homoousion.
    - Similarly with regard to the epistemological role of the Holy Spirit (294-295).
    - "Here we are up against something that has no counterpart in the natural or human sciences, the direct and personal action of the divine Being upon us through the Holy Spirit." What does TFT mean? Do you agree that this has no counterpart in the non-theological sciences?
    - "Ecstatic": being moved out of oneself. The Holy Spirit transforms, transfigures, transposes our selves, but does not diminish our selves or make us less human. This is why common language, or natural language, remains essential, both in theological and other sciences. "Unless the most refined theological conceptions interact with our ordinary knowledge at decisive points and our theological terms bear some relation to ordinary language, if only as the tool by which they are constructed, it is impossible for us as men on earth and in history to have any understanding of God or to say anything about him." See footnote #1: "Common sense concepts can and must be retained when we discern their interaction with the refined concepts of advanced physics..." I suggest that studying the history of any science (including theology) may provide a useful way in to the meaning of the terms, as one surveys the ways they have changed in meaning over time.

1.ii. Differences between Theology and the Other Sciences (pp. 295-312)

- "In spite of the overlap of concepts that they may involve it is unscientific to force the application of concepts from one field of investigation into another where they do not belong...."
    - Can you think of examples where there was an illegitimate transfer of concepts or principles from one science into another? When the source or receiving science was theology? When neither science was theology? We may call this illegitimate incursion of one science into the domain of the other "scientism."
    - Here is why the illegitimate incursion of other sciences into the domain of theological science is a particularlly eggregious form of scientism: "All the other sciences deal with creaturely realities and only with aspects of being, whereas in theology we have to do also with the creative Source of all being."

Objectivity (295-303)

- "In all the sciences we refer our thought to what is external to ourselves and are devoted to objectivity...." (295-296)
    - Realism and objectivity paradoxically require that "... rigorous formalizations of our knowledge are not to be treated like transcripts of reality..."

- In theology (297-298).
    - There is a "radical difference" in theology for God "cannot be confined to" our formulations.
    - God "can be known only through Himself and not by reference beyond Him."
    - In theology the "ultimacy of God ... is the true ground of objectivity..."
    - "Before God humility and certainty go inseparably together."

- In theology we have a "two-fold objectivity," ultimate and proximate (298).
    - Ultimate objectivity. God is distinct from our world, transcending our ability to apprehend.
    - Proximate objectivity: God makes himself known to us in our world and categories, which he assumes to himself. Contingent objectivity. Example: The humanity of Jesus.

- A restatement (298-299)
    - "In all the other sciences the human knower and the object known are both creaturely realities..."
    - We can presuppose that our minds and creaturely realities are in harmony, for humanity is the priest and prophet of creation. But we cannot assume a similar continuity with respect to God and so we have a greater danger of projecting ourselves onto him. For this reason, God is not even a "First Cause" (TFT cites Duns Scotus).
    - We must attend to both our contingent knowledge of God and to his transcendent Being.

- "Way of Grace" (299-300)
    - The "essential difference" between theological science and other sciences is that in theological science we are the object known. If we attempt to know God as an object of our knowledge, under our control, then we are engaging in magic and idolatry instead of submitting to his objectivity.
    - Michael Polanyi: "It is illogical to attempt the proof of the supernatural by natural tests..." Can you think of examples of such attempts?

- "The determinative significance of Grace..." (300)
    - God is "a voluntary object which we know only through response to His unconditional self-giving"
    - "This is a unique objectivity"

- Analogy with biology (300-301)
    - Stratification of the sciences: physics, chemistry, biology, theology. Against reductionism: Biological order cannot be reduced to the principles of chemistry or physics. Similarly with theology.
    - "We are faced with a similar impasse when we carry over into theological science" the principles of the lower stratified sciences.
    - TFT points out that theology deals with a unique object of knowledge, and brings up the idea of a "concrete universal." This distinction — that physics, chemistry, biology, etc. deal with multiple entities while theology deals with a singular entity — is of lesser force than the much stronger point that the singular entity for theology has a uniquely incomparable character as transcendent. Do any special sciences deal with a unique object of knowledge, albeit a contingent order? Can there be a science of rare or even singular contingent entities? (Yes! And we can regard these sciences as echoes of the Incarnation.)
    - While other sciences investigate creaturely realities, theology investigates them with respect to their contingency upon God. Will this provide a point of connection with other special sciences?

- The particular and the general (301-302)
    - Most special sciences investigate the general, and attempt to discern the general through the particulars.
    - Theology, on the other hand (like some other special sciences), investigates the particular.
    - "Theological truth... is unique, and cannot be interpreted... as an instance of general truth." How does this apply to the search for the historical Jesus? To demythologization? TFT quotes Kierkegaard to reinforce this point.
    - I would add that this fact eventually proved revolutionary for the sciences of the rare, unique, and the particular, such as the history of the Earth, of the cosmos, and of life on Earth (contingent history).

- Concrete particularity of Jesus (302-303).
    - A beautiful paragraph. One of my favorites. I would add that the historical sciences may serve both as echoes of the Incarnation and as a *preparatio evangelium* (a preparation for the gospel) by training their practitioners to value, affirm, and attend to concrete particulars.

Subjectivity (303-312)

- "All real knowledge has this personal co-efficient... eliminating the personal-coefficient... would eliminate science altogether." (303).
    - In what sense is scientific inquiry "disinterested," and in what sense is it not?
    - "We are engaged in intensely personal acts when we refer our thought away from ourselves to external reallities..."
    - "... science is a function of human minds in which spontaneity, imagination and judgment play a considerable role." Read the last two sentences of this paragraph in which TFT affirms the personal nature of science. Do you agree? How would appreciation of this character of science change science education? The public perception of science?

- It is through personal effort and discipline that we reach objectivity. Therefore, attempts to suppress the personal merely result in bias that is unconscious and unrecognized (304-305).
    - Does this principle have any corollaries for involving diverse social groups as both subjects of scientific research and as members of scientific research teams?

- In theology, "the personal is a predicate of the object and ... the object demands reciprocity from the

person of the theologian." (305-306)

- Can scientific theology be done in an impersonal mode?
- Are prayer and worship necessary for the theologian as theologian?
- How does TFT describe shifts in the meaning of "person" through history? What would you add to his account?

- The "person" according to Scotus and Calvin (306-307).
  - What is the role and significance of direct intuitive knowledge of God?
  - What does it mean for you that to do theology is to be addressed by the reality of God?
  - Why does this imply that the Word of God is the sole norm for theology, rather than conformity to other sciences?
- Face to face with the Divine (307-308)
  - Enjoy the first sentence of this paragraph. Read it over and over. Then do the same with the last sentence of this paragraph.
  - How is it that as theologians, we "come under the attack of a masterful, concrete objectivity"?
- Inversion of the Subject-Object relation (308).
  - "even in our knowledge of Him, the divine Object retains His primacy or priority..."
- Hazards or challenges of theology (308-309)
  - Why is theology knowing God, and being known by God, rather than knowing about God?
  - Why is an objectivist (not objective) approach to theology so damaging?
  - How can a Protestant believer avoid falling into that kind of objectivism, or "bloated subjectivity," in knowing about God?
- Anthropomorphism in biblical faith (309-310)
  - How is anthropomorphism related to God's assumption of our humanity, lifting it up into the divine communion? (TFT calls this the "epistemological significance of the Incarnation.")
- Theological self-critique (310-311)
  - How does theological self-critique identify and reject false employments of anthropomorphism?
- Is full objectivity possible? (311-312)
  - TFT muses about whether theology might be able to assist other sciences, particularly the human sciences, in achieving an objectivity appropriate to the personal aspects of the realities they investigate. Can you think of an example where this has actually happened? Might such an example be a sign that theological science is being practiced in a faithful manner?

2. The Relevance of Historical Science (pp. 312-337).

3. Theology as Dogmatic Science (pp. 337-352).

The following pages provide the last section of my handout "The Transformation of Natural Theology: Reading GGT as Gifford Lectures," for Thomas F. Torrance, ch. 4 of *Ground and Grammar of Theology* (Charlottesville, Virginia: The University of Virginia Press, 1980), pp. 75-109; download at #1980-369e. This section is on "bracketing"; the earlier sections (not reproduced here) are on the unity and relations of the sciences, two questions of relevance to this chapter of *Theological Science*.

3.3 What did Torrance mean by "bracketing," "methodological secularization," and "completing"?

On p. 95 he writes:

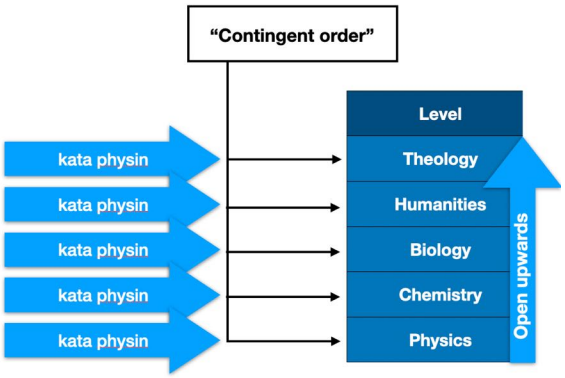
"Inevitably, in the focus of attention upon the unity of form and being and the singularity of the universe, some measure of temporary, methodological 'bracketing' of these issues will be entailed — but solely in the recognition that what we thus consider is complete only in the integrated unity of Christian theology, and fulfills its role there within the stratified structure of knowledge of God... on its proper level of connection in coordination with the other levels." (95)

The term "bracketing" has given rise to much confusion, but it does not signal a return to Traditional Natural Theology that needs to be completed by faith, nor an endorsement of "methodological naturalism" in the natural sciences. Rather, when we see the "bracketing" or "methodological secularization" (104) or "completing" language, interpret it as a reference to respecting the *kata physin* methods of each particular science in the context of interdisciplinary relations between the sciences. In the case of vertical relations across the stratified levels of sciences, each particular *kata physin* level is open to the contingent order of a higher level (cf. diagram, right) which completes it in some respect.

In *Space, Time, and Resurrection* (p. 188), Torrance explains:

"the various sciences themselves, ranging from physics and chemistry to the humanities and theology can be regarded as constituting a hierarchical structure of levels of inquiry which are open upwards into wider and more comprehensive systems of knowledge but are not reducible downwards."

Torrance's remark about "bracketing" is thus consistent with a Christian scientist doing her science in light of all that she knows, including her Triune faith, while still adhering to the proper methods appropriate to her subject matter in the natural science.



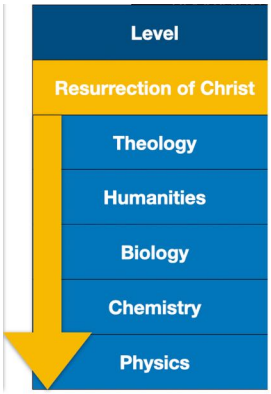
In GGT, Torrance's "we" pronoun is not always speaking for the theologian-as-theologian. He repeatedly dons the hat of the natural scientist, articulating the voice of the natural scientist-as-natural scientist in her work as a natural scientist. Such a scientist will take care to perform the work in the field of (non-theological) science in a *kata physin* manner for that science, while also remaining alert for a holistic integration of the sciences which might bear on the interdisciplinary aspects of the problems that arise.

In the new interdisciplinary dialogue that Torrance envisions, the work of natural scientists that has been temporarily and provisionally "bracketed off" on its own level of contingent order becomes related to theology in such a manner that the scope of the natural science will be "completed" through coordination with theological science, just as the work of any science (say, astronomy) might "complete" the understanding of another science (say, geology) when a truly interdisciplinary question arises (say, an asteroid impact). Again, this is *not a movement from reason to faith, but from one discipline to another*; a dialogue between different sciences which are each *kata physin* on their own level.[1]

[1] In *Theological Science*, p. 282, Torrance refers to the "bracketing off" of particular sciences in this context of interdisciplinary relations and stratified levels.

Integration is top-down

In the above quotation from *Space, Time, and Resurrection* (p. 188), Torrance states that each level of contingent order is open upwards, and cannot be reduced downwards. The context makes clear that the act of integration is top-down, for the Resurrection sets all other sciences on a new basis (diagram, right).



When physics was subordinated to geometry, that was an illegitimate bottom-up attempt at integration. Rather, geometry must be open upwards to physics instead of vice versa. Similarly, knowledge in the natural sciences must always be open upwards to theology, not vice versa.

Next pages

• Cf. the Note on the Ries Asteroid Impact. The question of the nature of this event was properly raised *within* the science of geology, but proved to have an interdisciplinary dimension that could only be completed within a mutually beneficial interdisciplinary dialogue respecting both disciplines and their different *kata physin* methods.

• Cf. Georges Lemaître's caution to the pope in the Note on Big Bang Cosmology, which illustrates how a resonance between a natural science and theological science does not entail a Traditional Natural Theology.

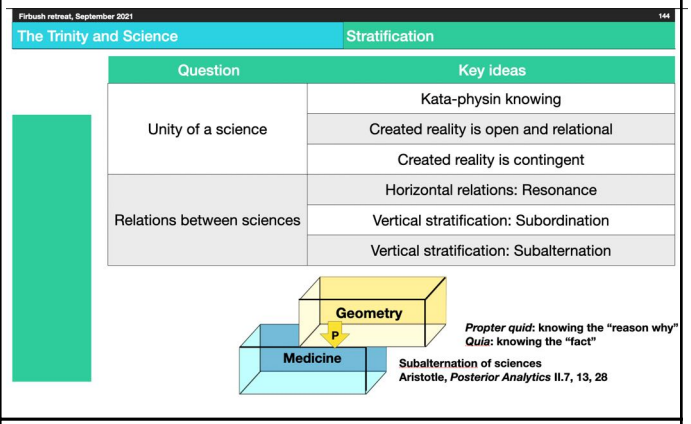
• I hope the concrete examples conveyed in the three notes below may throw light on the examples to which Torrance refers throughout this chapter (e.g., pp. 95-109).

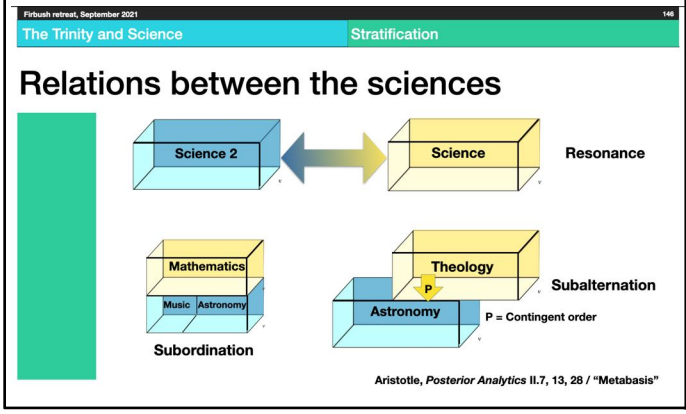
Types of Relations between Sciences

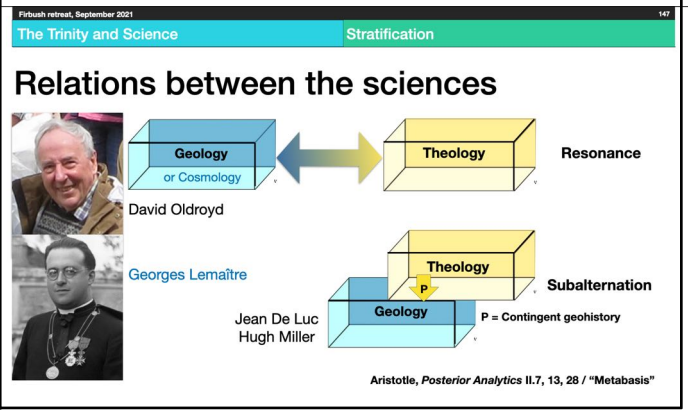
In this handout, including the case studies on the next pages, we have encountered three different kinds of relations between sciences:

- Horizontal resonance
- Vertical Subordination
- Vertical Subalternation

Here they are illustrated in three slides from my Trinity and Geoscience lecture which provides additional explanations (cf. footnote #1).

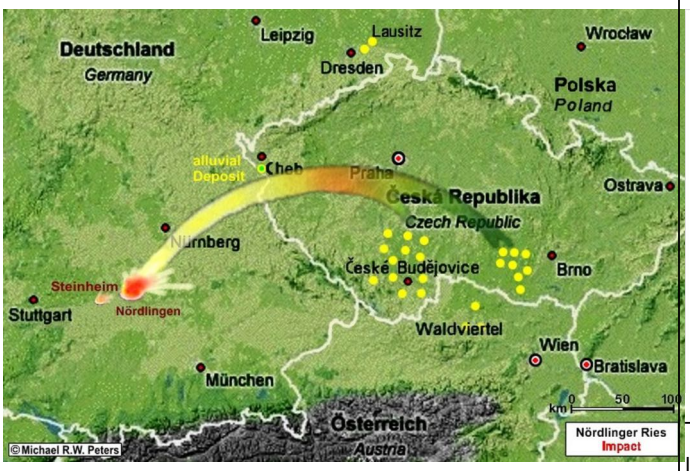




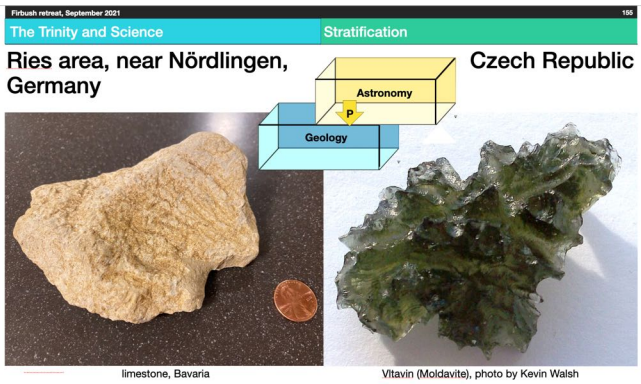


Note on the Ries Asteroid Impact (stratification of sciences)

From Goethe onward, for more than a century, the peculiar area of Ries puzzled geologists. Perhaps it was the site of a giant volcanic eruption. Perhaps, as one prominent 19th century geologist argued, it was evidence of a geological process he called “craters of elevation.”



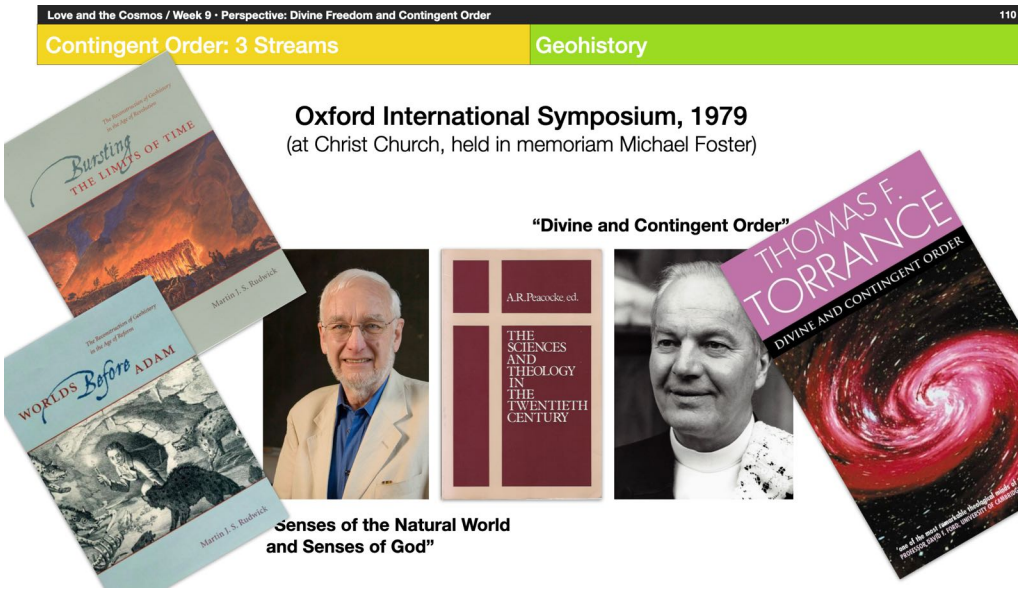
The modern consensus is that the Ries area was the site of a meteorite impact, which came in at an angle and launched molten ejecta into the neighboring areas of the Czech Republic.



The specimen on the left is a shatter cone. The shell like markings are shock waves from the impact. The vltavin on the right was formed from molten material ejected upon impact, which cooled and solidified while airborne, landing up to 450 km (280 miles) northeast of the impact site. These rocks are not fully understood in terms of the processes of the Earth alone, but only when astronomical events are also taken into account.

With the stratification of geology and astronomy, the order known by geology is open to the order known by astronomy and completed by it in a vertical relation. Here geology draws upon astronomical knowledge of asteroids and their planetary impacts (P) in a subalternate manner consistent with its own *kata physin* understanding of geological processes, including mineralogy, and igneous and metamorphic processes on Earth.

Note on Geohistory (the contingent order and contingent history of the Earth)



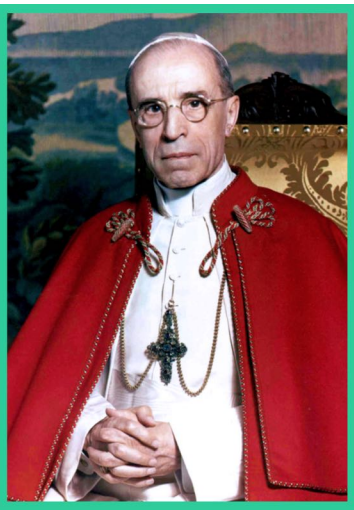
In the "Kata physin relations" diagram on p. 11, imagine that the blue box labeled "Natural science" is geology and the yellow box labeled "Theological science" is theology. How does contingent order serve as a surface of resonance between them?

The distinguished historian of geology Martin Rudwick defines "geohistory" in terms of contingent order and contingent history. Rudwick describes the early work by Jean André de Luc, for example, around 1800: "The impact of de Luc's theistic commitments can be seen in the radical contingency that he attributed to earth history, and which he grounded in God's ultimate role as creator of everything. As de Luc conceived it, earth history at every stage could have taken another course, with a different outcome, without of course abrogating the ordinary laws of nature. It followed that the sequence of events could not, even in principle, be inferred from the ahistorical laws of physics, as both Hutton and Buffon implied: there was too much contingency in earth history, as in human history, for any such determinism. Rather than imposing top-down some grand conclusion of what 'must' have happened, based on unchanging laws of nature, it was necessary, in de Luc's view, to assemble bottom-up the evidence of nature's documents and archives, which showed what in fact had happened. So the new way of analyzing the physical traces of earth history, applying the methods of reconstruction being used for human history... was not just an effective heuristic but was rooted in an ultimately divine reality."[1]

The permeating of early modern culture with a Christian sensibility of contingent order, and of linear history and historical significance, had everything to do with the discovery of geohistory (e.g., de Luc and Hugh Miller), but this was not by direct implication, still less by philosophical or theological derivation. Even if the "social coefficient" of intellectual culture favored its emergence at that time, geohistory was still a *kata physin* development within geology. One might also imagine that the historical development of a sense of "geohistory" might have served as a prompt for theologians to reconsider the perspective of contingent order on their own grounds of divine freedom to love.

[1] Martin J. S. Rudwick, *Geology and Genesis* (Baylor University, 2005; https://www.baylor.edu/content/services/document.php/30846.pdf). Cf. Rudwick's magisterial studies of the emergence of geohistory, *Breaking the Limits of*

Note on Big Bang cosmology (the contingent order and contingent history of the universe)



Pope Pius XII, 1951

Compatibility

Avoidance

The Belgian physicist and priest George Lemaître (above, middle) worked out the principles of Big Bang cosmology before Hubble, who is more often credited with the theory.

Pope Pius XII hailed Lemaître's work on the Big Bang as a scientific proof of Christian faith. However, Lemaître rejected the Pope's position, insisting that his work should be evaluated on its own scientific merits rather than in light of his theological commitments. The Big Bang does not prove the Christian faith, in any kind of concordist manner, although it is compatible with Christian faith, and it resonates well with a Christian theological intuition, so much more so than did the Aristotelian or Newtonian cosmologies.

Lemaître prevailed with the Pope, and Pius XII soon ceased proclaiming the union of Big Bang theory with Christian faith, as if a natural theology or logical bridge could be built upon the Big Bang.

Yet the very resonance of the Big Bang theory with Christian faith, given its directional sense of history, its relational sense of space and time, and pointers to contingency, prompts some cosmologists like Stephen Hawking to avoidance behavior. They seek any kind of alternative to Big Bang cosmology that would be more compatible with the myth of eternal return, even infinite cycles of Big Bangs or alternative multiverses that cannot even in principle be observed from within our own universe. In such cases, theology may help to protect scientists from unwarranted efforts to resolve contingency away.

Torrance's relational natural theology, as understood here, recognizes the implicit dialogue that takes place between sciences, theological and otherwise, and seeks to discern and pursue more explicit modes of dialogue that will be mutually beneficial while properly respecting each science's *kata physin* integrity and methods.

Time and *Worlds Before Adam*, both published by Chicago University Press (2005, 2008).