

Beginnings of the Divorce: Physics and Theology

What is crucial for the theologian to note is not only what is present as evidence for the divine existence, but what is absent. Religion offers nothing as warrant for its most central assertion. Religious experience of whatever dimension or character counts for nothing, neither the interior claims of an absolute, nor the disclosures of "limit experiences," nor the movements and attractions towards the transcendent. Or, if one looks not for the witness of subjectivity but for the historical or external witness within human tradition, one will look in vain for the history of holiness as a perpetual manifestation of mystery, the testimony of mystics, the depth of human religious practice over thousands of years, and — even more remarkably for a Christian culture — anything of the reality and meaning of Jesus of Nazareth. Religion either in its internal, intuitive, affective dimensions or in its historical, institutional, external, traditional dimensions has nothing to offer to the question. It is presumed, though this statement is never made, that religion stands empty before such an issue. That is why it looks to physics to sustain its truth.

Ernst Mach credits Lagrange with the next pertinent development of physics, the elimination of theological concerns:

After an attempt in a youthful work to found mechanics on Euler's principle of least action, Lagrange, in a subsequent treatment of the subject, declared his intention of utterly disregarding theological and metaphysical speculations, as in their nature precarious and foreign to science. He erected a new mechanical system on entirely different foundations, and no one conversant with the subject will dispute its excellences. All subsequent scientists of eminence accepted Lagrange's view, and the present attitude of physics to theology was thus substantially determined. The idea that theology and physics are two distinct branches of knowledge thus took, from its first germination in Copernicus till its final promulgation by Lagrange, almost two centuries to attain clearness in the minds of investigators.³⁶

The effect of this new autonomy of physics from theological concerns is often symbolized in the famous interchange between Napoleon and Laplace, recorded by William Herschel from a visit by the First Consul on August 8, 1802. The conversation turned to celestial mechanics and Napoleon asked: "And who is the author of all this?" M. de Laplace wished to show that a chain of natural causes would account for the construction and preservation of the wonderful system. This the First Consul rather opposed." Subsequent legend has shortened the story by having Laplace reply to Napoleon's Newtonian theology: "Je n'avais pas besoin de cette hypothèse-là."³⁷ Neither, of course, did Descartes for the design of the universe! Given matter and motion, the universe would of necessity have eventually arranged itself in its present configurations. Laplace is not denying the existence of God. He is only insisting [with Descartes] that mechanical problems must have mechanical principles as their solution, not theological ones. Laplace had assisted Newtonian celestial mechanics as no other figure in French astronomy, but his efforts

entailed both the restoration of mechanical principles as ultimate in science and the consequent elimination of theology. In Laplace, Cartesian methodology had its partial revenge.

Whether one awards the palm to Lagrange or to Laplace, both of them bring to completion a dialectical revolution that had begun much earlier and gathered strength during the Enlightenment: physics needs nothing beyond physical principles to explain itself. No one better exhibits the change than Denis Diderot, from the Newtonian *apologia* of the *Pensées philosophiques* to the elimination of all such physico-theologies in the *Lettre sur les aveugles* and finally to the open atheism of *La Rêve de d'Alembert*. Perhaps better than any single figure, this great genius of the Enlightenment develops the internal alienation of this "first foundation of religion" into its contradiction.

In Diderot's *Lettre sur les aveugles*, the Reverend Mr. Holmes attempts the argument of Newton, Leibniz, and Clarke on the blind Cambridge mathematician, Nicholas Saunderson. How would or could Saunderson explain the design even "dans le mécanisme admirable de vos organes?" Saunderson counters that his own blindness must also be explained as well as the broader history of deformed monsters and of the diseased, lingering away into half-death. The intelligent Author of design is not adequate to explain all of this, and so Saunderson introduces another principle, collapsing the disjunction between matter and motion, and insisting against the mass of Newton and the extension of Descartes "Je matière se mouvoir et le chaos se débrouiller."³⁸ Matter, blind but dynamic, evolving form after form in the gradual establishment of those organic beings which are self-sustaining, was no longer the passive extension of Descartes. Neither was it the mass of Newton that "was unable to initiate any action itself, passively dominated by external forces but endowed with a power to resist them."³⁹ Newton had allowed that mass had the *potentia resistendi*, and in its very resistance had the power to change the impressed forces brought against it. Newton had also acknowledged the necessity of active principles to be found in Nature: fermentation, magnetism, and the cause of gravitation, and Leibniz gave matter the dynamism of *vis viva* [momentum] and the *conatus* for continuance which could be awakened on contact. But both needed a cause other than matter to initiate action.⁴⁰ No longer. Taking his understanding of matter and the evolution of organic forms from Lucretius, Saunderson had something that explained all natural phenomena better and was itself commensurate with it: "La matière faisait éclore l'univers."⁴¹

Diderot has taken something from both Newton and Descartes and turned these weapons against those who forged them. From Newton, he takes the universality of mechanics and its competence to handle definitively the existence of God. He accepts the *Newtonian Settlement*. From Descartes, he takes not the nature of his method, but the nature of his principles; they must be mechanical, reflexively commensurate with the subject-matter to be explored. Experimental physics remains universal [Newton], but contains within itself mechanical principles [Descartes]. Diderot's understanding and use of dynamic matter was coordinate with