Coleridge and the '*fiction of science*'

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BEFORE I WAS A COLERIDGEAN, I was an aspiring medical student, driven by an interest in the larger theoretical questions surrounding the origins and development of life. In an Embryology course, I spent hours studying slides and producing drawings of human embryos, diligently labeling and memorizing the parts that appeared in each stage of development. In learning about the history of the field, I encountered the German naturalist Ernst Haeckel's famous drawings of various vertebrate embryos, whose resemblance

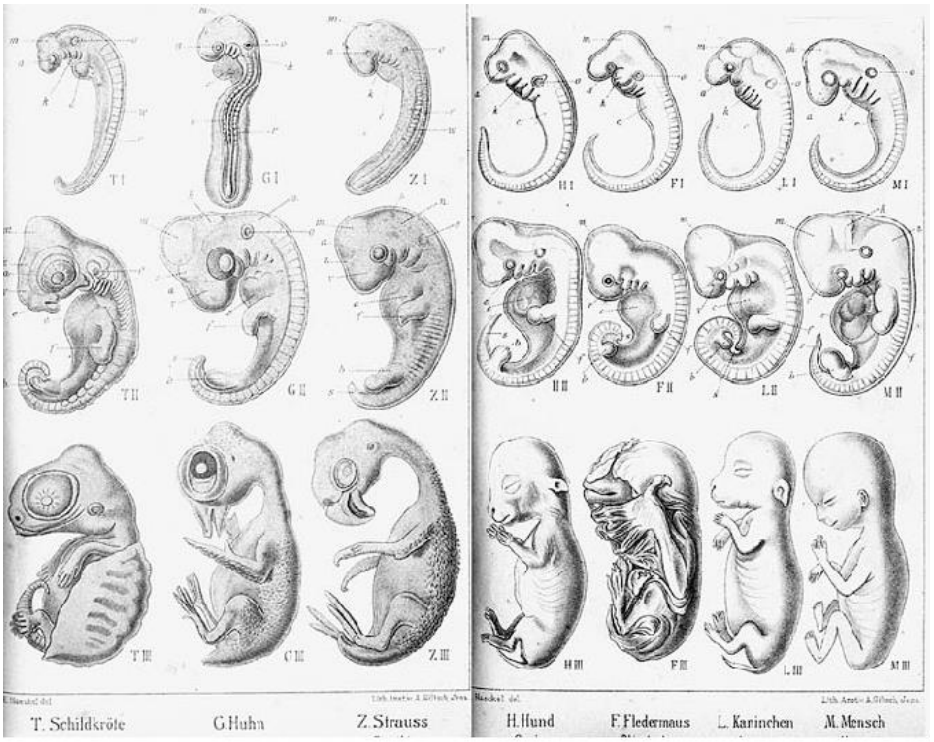

Illustration from Ernst Haeckel, *Anthropogenie*, 4th ed. (1891)

at the earliest stages of development he used to argue for key evolutionary concepts such as common ancestry and the theory of recapitulation. The symmetry displayed by the nascent forms of these diverse organisms—fish, salamander, tortoise, chicken, cow, human—was delightful to me in their suggestion of a larger cosmic order, in which the whole was reflected in each part. Developmental Biology promised to move beyond the study of form to the experimental investigation of the processes of development at the cellular and genetic levels. And yet, one afternoon, as I looked through the microscope at a chick embryo extracted from an egg injected with alcohol to observe its disruptive effects, it dawned on me that answers to the questions I sought couldn't be measured in a laboratory. As Coleridge wrote on the death of his

son Berkeley in 1799, I came to the conclusion: 'Life, Power, Being! Organization may [be] and probably is, their effect; their cause it cannot be!' (CL I 274).

Coleridge also showed early interest in a medical career, inspired by his brother Luke's training at London Hospital. He devoured books in the field ('Blanchard's Medical Dictionary I had nearly by heart') and regularly sought opportunities at the hospital to observe procedures.[1] This fascination with the flesh and blood methods of medical training was soon replaced, as he 'bewildered [him]self with metaphysics,' leading him to an unfinished degree at Cambridge (BL I 15). Afterwards, his poetic and political activities led him to a friendship and correspondence with Dr. Thomas Beddoes and other members of the radical scientific Lunar Society of Birmingham (whose 'members' also included Erasmus Darwin and Joseph Priestly). To further investigate the intersections between scientific, philosophical, and theological ideas, he enrolled at the University of Göttingen in 1799, where he attended lectures by J. F. Blumenbach on anatomy and physiology. Upon his return, he made the acquaintance of Humphry Davy and not only attended Davy's lectures on chemistry and natural philosophy, but also participated as an experimental subject in his study of the effects of nitrous oxide. Around 1816, the same period in which he started to dictate his *Biographia Literaria*, Coleridge composed *Hints Towards the Formation of a More Comprehensive Theory of Life*, an essay in which he confronts the question of life (power, being, and organization) in dialogue with physicians and scientists. I encountered this essay in a seminar during my first semester in graduate school, and it both confirmed that my decision to abandon the more practical path of medical training for the study of literature (and the history and philosophy of science). *Theory of Life* was the impetus for my dissertation research as well as the starting point for lifelong relationship with Coleridge's work.[2]

The ongoing search in Romantic-era science to isolate and identify a formative principle of life, such as Blumenbach's Bildungstrieb, Erasmus Darwin's formative nisus, and John Hunter's vital principle, was characterized by efforts to distinguish the processes of the living from the laws of the machine. Blumenbach had argued in his 1781 *Über den Bildungstrieb* that 'there is no such thing in nature, as pre-existing organized germs,' but rather a moment at which 'the unorganized matter of generation' takes on a 'particular action, or nisus' (21). These ideas worked their way into the cultural imaginary though phenomenon such as the 'vitality debates' between the surgeon John Abernathy and his student William Lawrence that took place in widely read journals. Vitalist positions held that life cannot be explained solely material and physical forces and must be defined through something else: perhaps the soul, a more secular spirit, or another animating force. The public perception of the opposing position—materialism—was shaped by the systems of several

[1] Richard Holmes, *Coleridge: Early Visions, 1772-1804* (New York: Pantheon Books, 1999), 29.

[2] This seminar on Romanticism and systems theory was led by Robert Mitchell, who let me know about the Coleridge Conference

prominent philosophers of the French Enlightenment. For example, LaMettrie, upon surveying the work of the emerging field of physiology, concludes his 1748 *Man a Machine* with the invitation to 'conclude boldly that man is a machine, and that in the whole universe there is but a single substance differently modified'.[3] Such images of a man-machine imprisoned by natural laws haunted writers who embraced the potential they saw in the Enlightenment project for human progress through a scientific program based on reason, observation, and experiment.

In an October 1804 notebook entry, Coleridge includes a fragment titled 'What is Life?' which he later transcribed in an 1819 letter 'as evidence of my very early Turn to metaphysics and speculative philosophy' (CL 4 937):

> Resembles life what once was deem'd of light,
> Too ample in itself for human sight?
> An absolute self – an element ungrounded –
> All that we see, all colours of all shade
> By encroach of darkness made? –
> Is very life by consciousness unbounded?
> And all the thoughts, pains, joys of mortal breath,
> A war – embrace of wrestling life and death? (PW 482)

In an extended analogy of the ongoing debates over the biological nature of life to the previous generation's focus on the repeated observation and measurement of physical phenomenon, Coleridge alludes to the Newtonian hypothesis that light and colors are products of the arrangements of corpuscular matter. The October 1804 notebook entry includes a telling deletion in an omitted version of line 6: 'Is Life pure act per se (in its own nature)/itself by consciousness unbounded,' with words 'pure act per se' crossed through. The 'war,' the 'wrestling life and death,' the struggle between 'light and darkness' that arises out of applying physical laws and principles to the development of living organisms is, according to Coleridge, is both false and threatening in its suggestion that consciousness, the willed human act, emerges passively from life as a whole instead of playing a role in its generation.

In the *Theory of Life*, Coleridge shifts the discourse on life from a question about the line separating life and death into an inquiry about the significance of the individual human life in a complex and reciprocal process of development that characterizes material nature. He argues the existing explanations of thinkers such as Hunter, Abernathy, and Laurence, derived from the research in the physiological sciences, 'presuppose the arbitrary division of all that surrounds us into things with life, and things without life—a division grounded on a mere assumption' (SWF I 488). As is characteristic of Coleridge's critical impulse, he continually searches for the most inclusive and infinitely flexible starting point from which to theorize 'Life' in the context of the experimental

[3] Julien Offray de La Mettrie, *Man a Machine*, trans. Gertrude C. Bussey (La Salle: Open Court, 1993), 148.

findings of the biological sciences. He proposes his own definition of life 'as the principle of individuation, or the power which unites a given all into a whole that is presupposed by all its parts' (SWF I 510). The distinguishing feature of life for Coleridge is the 'tendency to individuation.' This tendency is itself manifested in degrees:

Thus, from its utmost latency, in which life is one with the elementary powers of mechanism, that is, with the powers of mechanism considered as qualitative and actually synthetic, to its highest manifestation, (in which, as the vis vitae vivida [Living life-force], or life as life, it subordinates and modifies these powers, becoming contradistinguished from mechanism,* ab extra [From without], under the form of organization,) there is an ascending series of intermediate classes, and of analogous gradations in each class (SWF I 511)

Coleridge posits the emergence of the complexity and diversity of life through an opposition of intrinsic agency and external forces, based on a fundamentally anti-dualist an dynamic conception of matter.'[1] Through a gradual and progressive process, matter, whose impulses are first subject almost entirely to environmental influence, gradually develops to a point at which the vis vitae vivida, the powers 'ab intra,' are able to overpower and subordinate the forces from without, or 'ab extra.'

During a lecture given during March 1819, Coleridge elaborates on the concepts of organization and individuation that he employs in *Theory of Life*, contextualizing his position within the history of philosophical materialism. He begins by contrasting the assumptions of what he terms the 'ancient' and 'modern' schools of materialist thought:

It is sufficient for our purposes to know that the fundamental positions of ancient materialism were, first, that motion and sensation are properties of a specific kind of atoms and that the mind is but a species of sensation, and all the processes of perception and of reflection purely passive, and all the acts, or more accurately, all the phenomena or appearances of life (just as the seeming acts of a dream), are wholly mechanical or produced by necessitating antecedents. (LHP 518)

Ancient materialism, then, falters in its attribution of latent and prescribed powers to specific species of matter; such a scheme, according to Coleridge, leads to a system of necessity that renders life a series of passive and predetermined events. In contrast, he argues, '...the modern scheme of materialism differs...by representing life, mind, and will as the result of organisation, not as pre-existing in the specific [atoms so organised]' (LHP 518). Although the 'modern scheme of materialism' presents its own set of problems for Coleridge, he points to this distinction as a starting point for his continual assertion that life—here conflated with mind and will—are not given and essential properties, but emergent and ongoing processes.

Coleridge returns to this struggle repeatedly in his later prose. In the Conclusion to *Aids to Reflection*, he considers possibility that matter is characterized by inherent active properties, which lead to a more conscious, collective agency: 'perhaps the material particles possess this combining power

by inherent reciprocal attractions, repulsions, and elective affinities; and are themselves the joint Artists of their own combinations?' (AR 398). The acquisition of form through an emergent process separates the 'Organ from a Machine,' the living from the non-living (AR 398). He includes this argument in the Conclusion as a part of his larger refutation of dualism. He asserts that continued reflection upon the fruits of empirical research in the natural sciences will be enough to learn a powerful lesson: 'the utter emptiness and unmeaningness of the vaunted Mechanico-corpuscular Philosophy, with both its twins, Materialism on the one hand, and Idealism, rightlier named Subjective Idolism on the other: the one obtruding on us a World of Spectres and Apparitions; the other a mazy Dream! (AR 398-9).' This objection to the dualist 'Mechanic or corpuscular Scheme' echoes his argument against the variety of 'ancient' materialism that he criticizes in his philosophical lectures. He opposes tendency of scientific method to dismiss any explanation that cannot be derived from observable and measurable physical properties, referring to such attempts here, and repeatedly in the philosophical lectures as a '*fiction of scienc*e.' With this phrase, Coleridge invokes the familiar Enlightenment threat of the man-as-machine to counter, on the one hand, a mechanistic 'Materialism,' and on the other, 'Subjective Idolism.' The 'fiction' of science is that it is capable of illuminating everything about the world. Mistaking science for the *whole* truth rather than a particular and specialized *part* of it is a mistake with heavy metaphysical and ontological implications, reducing the human to 'a lifeless Machine whirled about by the dust of its own Grinding' (AR 399).

An account of the meeting of the 1833 British Association for the Advancement of Science in which the term 'scientist' reports that '*Philosophers* was felt to be too wide and too lofty a term, and was very properly forbidden them by Mr. Coleridge.' Instead, 'some ingenious gentleman proposed that, by analogy with *artist*, they might form *scientist*'.[4] Coleridge's lifelong project was defined, not by the facts or methods of any single discipline, but by a desire to reveal the inherent relationship between the various and seemingly disparate branches of the tree of knowledge that were proliferating rapidly in the Romantic Era. In a series of essays published in *The Friend*, he asserts that the highest form of knowledge, or 'Method,' which is responsible for 'the formation of the understanding, and in the constructions of science and literature,' takes into consideration 'not things only, or for their own sake along, but likewise and chiefly the relations of things, either their relations to each other, or to the observer, or to the state and apprehension of the hearers' (F I 451). In this endeavor, scientists and poets alike were capable of expressing the relationship between human and the nonhuman, the material and the immaterial: 'If in SHAKESPEARE we find nature idealized into poetry, through the creative power of a profound yet observant meditation, so through

[4] W. Whewell, 'On the Connexion of the Physical Sciences. By Mrs. Somerville.' *Quarterly Review*, 51 (1834), 59-60.

the meditative observation of a DAVY… we find poetry, as it were substantiated and realized in nature: yea, nature itself disclosed to us…at once the poet and the poem! (F I 451). This is the most important lesson I think Coleridge, and by extension Romanticism, has for current and future generations. Coleridge never dismisses scientific knowledge; he both appreciates its power and recognizes its limits. In a culture in which the value of the humanities disciplines is often dismissed and pitted against the more 'useful' STEM (science, technology, engineering, math) disciplines, the individual mind and the whole of society would both benefit from an education in which knowledge was pursued in the spirit of connection rather than division. The meaning and the wonder of life—human and nonhuman—is that it defies explanation, and the only way to truly know it is to immerse oneself in the creative activity that is at once its defining characteristic and its greatest mystery.

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George Dance (1746-1831); pencil on paper; 21 March 1804; (8 x 6 in.)
The Wordsworth Trust; MP cat. 8