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Science and Early German Romanticism

Introduction

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If all wit is the principle and organ of universal philosophy, and all philosophy nothing other than the spirit of universality, the science of all sciences eternally mixing with and separating again from each other, a logical chemistry...
*Athenaeum Fragment 220*¹

The sheer speed of development in the intellectual scene in Germany after Kant presents a problem for scholarship. The *Critique of Pure Reason* was published twice, first in 1781 and then in 1787, bookending the Pantheism controversy, which turned German thought to an evaluation of and move beyond the Enlightenment.² Blumenbach's *On the Formative Drive* also appeared in 1781, ending the debate on epigenesis from the Enlightenment and touching off a more general philosophical debate about the nature of science and the content of the slowly separating natural sciences.³ The years that follow, and especially those after 1794 – the year that Fichte gave his famous lectures in Jena – are bewilderingly productive. To be sure, the

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¹ “Ist aller Witz Prinzip und Organ der Universalphilosophie, und alle Philosophie nichts anders als der Geist der Universalität, die Wissenschaft aller sich ewig mischenden und wieder trennenden Wissenschaften, eine logische Chemie...” Friedrich Schlegel, *Kritische Friedrich-Schlegel-Ausgabe* (KFSa), eds. Ernst Behler, Jean Jacques Anstett, and Hans Eichner (Munich: Schöningh, 1958-), vol. II, 200; my translation.

² See Frederick C. Beiser, *The Fate of Reason: German Philosophy from Kant to Fichte* (Cambridge MA: Harvard University Press, 1993). Cf. Dieter Henrich, *Between Kant and Hegel: Lectures on German Idealism*. Edited by David S. Pacini (Cambridge MA: HUP, 2008).

³ See Helmut Müller-Sievers, *Self-Generation: Biology, Philosophy, and Literature around 1800* (Stanford, CA: Stanford University Press, 1997); John Zammito, *Kant, Herder, and the Birth of Anthropology* (Chicago: University of Chicago Press, 2002); John Zammito, *The Gestation of German Biology: Philosophy and Physiology from Stahl to Schelling* (Chicago: UCP, 2018).

“transcendental philosophy” played the central role, but it absorbed aesthetics, poetics, biology, chemistry, mathematics, political theory, and economics, often in unprecedented combinations. Philosophy itself moved at a rare clip in what Eckart Förster calls its “twenty-five years.”⁴ The composite texts so characteristic of Romanticism often defy summary of even ostensible meaning, before one would want to move to interpretation. Schlegel’s famous remark that the French Revolution, Fichte’s *Wissenschaftslehre*, and *Wilhelm Meister* are the “three tendencies of the age”⁵ seems almost a simplification when we pick up a text like, for example, Carl August Eschenmayer’s *Sätze aus der Natur-Metaphysik auf chemische und medicinische Gegenstände angewandt* (1797). This small treatise mixes Kant, Fichte, and Schelling with post-Newtonian debates on the nature of force, life, and chemistry. Certainly it is just as complex a situation in Franz von Baader’s *Über das pythagoräische Quadrat in der Natur oder die vier Weltgegenden* (1798), or Joseph Görres’s *Aphorismen über die Organonomie* (1803). If we turn back to the fragmentary work of Early German Romanticism – as in the epigraph above – or the aspiration to include science in the novel, or the topic of irony in Romanticism’s remediation of science, the complexity only deepens. Early German Romanticism aspired to *remediate science in linguistic expression*.

Even Romantic *Naturphilosophie* without aesthetic ambition makes use of rapid, repeated synthesis of philosophy that evades simple summary, as in the example of Schelling’s nature-philosophical system, which he advanced in at least three separate versions between 1797 and 1800 alone. In the final system we find this chart:

Organic	General	Anorganic Nature
Formative Drive	Light	Chemical Process
Irritability	Electricity	Electrical Process
Sensibility	Cause of magnetism?	Magnetism? ⁶
<i>Organische</i>	<i>Allgemeine</i>	<i>Anorganische Natur</i>
<i>Bildungstrieb</i>	<i>Licht</i>	<i>Chemischer Process</i>
<i>Irritabilität</i>	<i>Electrizität</i>	<i>Electrischer Process</i>
<i>Sensibilität</i>	<i>Ursache des Magnetismus?</i>	<i>Magnetismus?</i> ⁷

⁴ Eckart Förster, *The Twenty-Five Years of Philosophy*, trans. Brady Bowman (Cambridge MA: HUP, 2012).

⁵ Friedrich Schlegel, KFS II, 198, no. 216.

⁶ F.W.J. Schelling, *First Outline of a System of the Philosophy of Nature*, trans. Keith R. Peterson (Albany NY: State University of New York, 2004), 9.

⁷ F.W.J. Schelling, *Erster Entwurf eines Systems der Naturphilosophie* (Jena & Leipzig: Gabler, 1799), p. VIII. The universal unifying force is, of course, the *Weltseele* in the earlier writing of that name. Schelling leaves its determination open in all of these writings, positing only

The incompleteness of the categories, along with the extensive excursions into the science of the nerves, the organs, light, and post-Lavoisier chemistry, pose no more than a historical challenge. But the triad that adds up to “sensibility” renders the physical universe transparent to thought, or perhaps itself conscious, presenting the “spiritualization of nature” that Schelling announces as the project of *Naturphilosophie* (where his version of Idealism, also given in multiple systems from 1795-1800, requires the “objectification of spirit”). This means that the science of Romanticism is never innocent of Idealism, never untinged by a deep, thoroughgoing engagement with the trajectory of transcendental philosophy after Kant. When one adds literary form to this equation, as the Jena Romantics so influentially did, the difficulty really appears for the first time. That difficulty is not to spell out the various *ingredients* of the composite discourse – a task that the scholarship has slowly but surely chipped away at for the last several decades⁸ – but to interpret the synthesis of so many bodies of thought in language. Early German Romanticism throws down this gauntlet, claiming that philosophy and literature must mediate science. That project cannot be reduced to discursive reflection on science, the task of “orienting” us in a scientific world, or ancillary considerations of the destinies of morality and beauty in the scientific order. Its claim is to add to knowledge.

that one must conclude to it from the investigations. In the *Weltseele*: “Da nun dieses Prinzip die Kontinuität der anorganischen und der organischen Welt unterhält und die ganze Natur zu einem allgemeinen Organismus verknüpft, so erkennen wir aufs neue in ihm jenes Wesen, das die älteste Philosophie als die *gemeinschaftliche Seele der Natur* ahndend begrüßte, und das einige Physiker jener Zeit mit dem formenden und bildenden Äther (dem Anteil der edelsten Naturen) für Eines hielten.” F.W.J. Schelling, *Von der Weltseele*, in: *Schellings sämtliche Werke*, vol. I, 2, hrsg. von Karl Friedrich August Schelling (Stuttgart: Cotta Verlag, 1857), p. 569. In the *Entwurf*, as a harbinger of the next year’s breakthrough: “Es wurde vorausgesetzt, die Natur sey Entwicklung aus Einer ursprünglichen Involution. Diese Involution kann aber nach dem Obigen nichts Reelles seyn: sie kann also nur als *Act* vorgestellt werden, als *absolute Synthesis*, welche nur ideal ist, und gleichsam den Wendepunkt der Transcendental- und der Naturphilosophie bezeichnet.” (Schelling, *Erster Entwurf*, p. 321; emphasis in original.)

⁸ See Stefani Engelstein, *Anxious Anatomy: The Conception of the Human Form in Literary and Naturalist Discourse* (Albany NY: SUNY, 2008); Christine Lehleiter, *Romanticism, Origins, and the History of Heredity* (Lewisburg: Bucknell, 2014); Gabriel Trop, *Poetry as a Way of Life: Aesthetics and Askesis in the German Eighteenth Century* (Evanston: Northwestern, 2015); Michael Gamper, *Elektropoetologie: Fiktionen der Elektrizität, 1740–1870* (Göttingen: Wallstein, 2009); Benjamin Specht, *Physik als Kunst: Die Poetisierung der Elektrizität um 1800* (Berlin: de Gruyter, 2010); Jocelyn Holland, *German Romanticism and Science: The Procreative Poetics of Goethe, Novalis, and Ritter* (New York: Routledge, 2009), and more recently *The Lever as Instrument of Reason: Technological Constructions of Knowledge around 1800* (New York: Bloomsbury, 2019); Joan Steigerwald, *Experimenting at the Boundaries of Life: Organic Vitality in Germany around 1800* (Pittsburgh: University of Pittsburgh Press, 2019).

But we stand across a gulf from this synthetic language, and it is hard to take seriously a statement like the one made by Lorenz Oken in his *On the Universe as Continuation of the Nervous System* of 1808:

The universe is only *one* animal, whose sensorium commune or self-consciousness is the human, the animals its brain, the plants its senses, and the trunk is everything that remains, what you call “inorganic.” There is nowhere an interruption; just as essentially as the sense-organ is one with the brain, is just the distributed brain, so is the sense-object just as essentially one with the sense-organ, and is simply the sense organ further spread out into the universe. The brain extends itself through the sense-nerve, which extends itself into its organ, this extends itself into its object, and this extends itself into the endlessness of the universe.⁹

Discourse, in Foucault’s technical sense of what is possible to say, no longer occupies this space. To read Oken today is to see analogy, metaphor – “poetry,” in the colloquial sense. But underlying that metaphor is the literal way in which the scientist meant what he wrote, and which can only speak to us across that gulf with *both* the proper intellectual-historical basis *and* an interpretive synthesis of the rapid development of philosophy and science in the years around 1800. I have argued elsewhere that this and other examples of Schellingian *Naturphilosophie* prepared the ground for the modern philosophy of technology, since they imagine a world of nervous and communicational extensions, a sort of continuity based on a cognition delegated to the physical universe, as we have managed to pass off so many cognitive tasks to algorithms, servers, and networks.¹⁰ Discursively, it is not clear that Romantic science has any linear relation to the institution of science after positivism.¹¹ But to reduce Romantic thought solely to the realm of the

⁹ Lorenz Oken, *Über das Universum als Fortsetzung des Sinnensystems* (Jena: Frommann, 1808), 10: “Das Universum ist nur E i n Thier, dessen Sensorium commune oder Selbstbewusstsein der Menschenleib, dessen Hirn die Thiere, dessen Sinne die Pflanzen, dessen Rumpf aber alles Übrige ist, was ihr unorganisch nennt. Es ist nirgends ein Unterbrochenes; so wesentlich als das Sinnorgan mit dem Hirn eins, nur das ausgebreitete Hirn ist, so wesentlich ist das Sinnobject mit dem Sinnorgan ein, ist nur das weiter in das All ausgebreitete Sinnorgan. Das Hirn verlängert sich durch den Sinnesnerven, dieser verlängert sich in sein Organ, dieses verlängert sich in sein Object, und dieses verlängert sich in die Endlosigkeit des Universums.”

¹⁰ See Leif Weatherby, “Romantic Conceptions of Life,” in ed. Elizabeth Millán Brusslan, *The Palgrave Handbook of German Romanticism* (London: Palgrave, 2020), 449-471.

¹¹ See, however, Thomas Kuhn, “Energy Conservation as an Example of Scientific Discovery,” in Thomas Kuhn, *The Essential Tension. Selected Studies in Scientific Tradition and Change* (Chicago: UCP, 1977), 65-105.

aesthetic is to miss the metaphysical synthesis in the very notion of Romantic aesthetics. That metaphysics is one of a composite world, scientific and therefore uncertain, revolutionized and therefore unstable, yet expressible in unpredictable form. To get at this project, fundamental research is still in order. The articles that follow present just that kind of research, revealing new aspects of Romantic science and training the interpretive lens on the synthesis of philosophy, literature and science proper to Romanticism.

The special issue begins with Stefani Engelstein's "The Emergent Organism: Kielmeyer, Röschlaub, Schelling, Novalis," which reevaluates the intertwined histories of organic and mechanical thinking in. In a tour de force, Engelstein strips away the baggage of later notions of "organic" and "mechanical" to specify the paradox of the notion of "organism" as a relationship between being and becoming, *Gang* and *Bestand*. This article is sure to be a standard source for continued interrogation of the category of the organic around 1800, precisely because it reveals a discourse that cannot easily be subsumed into or dismissed on the grounds of later scientific and discursive developments. Jocelyn Holland then shifts the framework towards the Romantic notion of "hypothesis" ("*Ein Schuss in die blaue Luft* – The Early German Romantic Hypothesis"), tracing the hypothesis that Newton famously claimed "not to frame" through 18th-century scientific lexica and into Romanticism. Comparing Schlegel and Novalis (in dialogue) on the hypothesis, Holland shows how the "arbitrary" aspect of hypothetical thinking becomes a tool for contact with the real – the physical world, but also "America," in Novalis – and thus an instrument of Romantic scientific reason. Alberto Bonchino's "Von Lavoisier zu Baader. Einige Bemerkungen zur nachkantischen Naturphilosophie" argues that Baader turns out to be practicing exactly the type of synthesis between transcendental philosophy and early quantitative chemistry so characteristic of Romanticism. Bonchino argues that Baader adds a third, unifying force to Kant's "two-forces doctrine" in the *Metaphysical Principles of Natural Science*, creating the basis for a holistic chemistry. The issue continues with Gabrielle Reid's "Friedrich Schlegel's Philosophy of the Middle, or Physics and the Transition Between Forms." Reid explores the geometry of form in Schlegel's *Dialogue*, showing how Schlegel is able to bind physics and poetry into his "new mythology" in the encyclopedia notion without destroying either one. The upshot is a thoroughly self-reflective theory of poetry that, in its formal manifestation, is also science. Steven P. Lydon considers A.W. Schlegel's integration of physics into aesthetics ("The 'Sound Figures' and *Naturphilosophie* in A. W. Schlegel's Lectures on Art History and Aesthetics (1798/1801)"), which cohere the natural world by crossing boundaries erected by abstract scientific

doctrines, raising the possibility of an aesthetics that includes a fuller objective world than any single scientific discourse can offer, uniting perception and objectivity. Gabriel Trop's article, "Karoline von Günderrode's Aesthetics of *Naturphilosophie*," takes us into the realm of poetry, showing the mediation of the earth in the downward pull of attractive force in Günderrode's lyric work. A "dedifferentiation" of forces "transvalues the field of normativity," absorbing Schelling's *Naturphilosophie* into a creation of poetic form. The issue closes with Marcio Suzuki's "What is Life? At the Roots of Romantic Philosophy: Kant's Philosophical Vitalism," which digs back into Kant's own philosophy, arguing that a physiological vitalism is at the root of all Romantic borrowings from Kant. By this point there can be little naivety about the depth of the Romantic engagement with science, and there is a large body of scholarship that plumbs that depth. The articles in this issue take a step forward into the difficult interpretation of the Romantic synthesis of science and philosophy in literature and beyond.