

Book Review

Esther Leslie: *Synthetic Worlds – Nature, Art and the Chemical Industry*, London: Reaktion Books, 2005, 246 pp., ISBN 1-86189-248-9

by Sophia Efstathiou

This book breaks boundaries and does so by synthesis. Its topic is synthesis – the synthesis of *Nature, Art and the Chemical Industry* – and its method is synthesis – the synthesis of representational media and discipline-specific tools. As I see it, the book works on two levels. On one level, it tells a story of how the initially German chemical industry was formed and how it evolved. On another level, it makes a point about story-telling: pictures, poems, and theories are a part of it! Leslie's meta-thesis is that art, philosophy, and science is how history tells itself. And I say 'how history tells *itself*' rather than how 'historians' tell it, because this is what Leslie sets as her aim: the telling of history by the things/pictures/ideas themselves. *Synthetic Worlds* tests the proposition that materials can be articulated as "historical entities" – "as transformative, transitory, non-eternal, productive" (p. 24). *Synthetic Worlds* enquires whether it is possible to tell the history of the German chemical industry, a history told before by many disciplinary perspectives, now "through aesthetic qualities, such as colour and blackness, light and dark, transparency and opacity, shine and twinkle", possessed by the products of this industry (p. 24). But can things tell a story without a narrator? And does a 'history' told through Hegelian dialectics of opposition, progression, and regression capture the point of view of 'matter'?

Leslie's enterprise of synthesis slips sometimes into confusion and is not as boundary-breaking as it intends to be. Her romantic aim of telling a story from the point of view of matter seems at odds with the imposition of a Hegelian framework on this story, counterposing opposites' struggle to reach a 'higher being'. Still, one has to acknowledge the scope, richness, and originality of this book. Its webs of meaning and threads of inference are purposefully tangled up but maybe because they are, *Synthetic Worlds* leaves the reader well engaged.

The book traces six consecutive episodes in the history of the German chemical industry, each weaved together with artistic and philosophical ideas

that Leslie finds topical and all held together by a motif of dialectical synthesis. Chronologically ordered, the episodes are: Late 18th century coal mining (Chapter 1); 19th century chemical experimentation (Chapter 2); early 20th century textile industry (Chapters 3 and 4); color and drug industry circa WWI (Chapter 5); chemical industry during the Nazi Reich (Chapters 6 and 7); and chemical industry post WWII (of Germany and the Allies) (Chapter 8). These episodes trace the development of the German chemical industry from the origins of its materials in coal mines and the lore surrounding them, through their subsequent manipulation in labs, factories, and the broader chemical and entertainment industries that these fuel.

The six historical episodes are presented by Leslie embedded in art and philosophy:

(1) The coal mines of late 18th century Germany star in the Grimm brothers' tales and inspire the natural philosophy of the Romantics (Goethe, Fichte, and Schelling). "Where there is chemistry, there is sensation", says Schelling, painting a picture of nature as sensitive and sensuous, sensible to us through all our senses and able to speak back to us and reflect back our own intelligence (p. 36).

(2) We read about Friedlieb F. Runge's theory of how novel materials are synthesized (pp. 54-5) and how "regressive metamorphoses" (p. 49) involved in cycles of plant life diverge from a Romantic, progressive vision of nature and echo Georg W.F. Hegel's dialectics. We learn that Runge, who isolated by distillation from coal tar the first synthetic blue in 1833, what he called blue oil or 'cyanol' (termed 'aniline' by J. Fritzsche in 1840) (p. 51), defended his philosophical doctorate *viva voce* in the presence of Hegel in 1822 who closed the exam asking how ideas exposed in Runge's phytological supplement relate to formal aspects of scientific cognition (p. 49).

(3) We read about inhumane work conditions in the textile factories, operating 24 hours with 18-hour shifts, that inspired Marx's materialism. With an increasing depletion of natural resources comes the depletion of human potential, but also a magical, transformative act of the social upon the natural: making gold into money (p. 87). The nascent consumerism of capitalism is examined in *The Arcades Project* of critical theorist Walter Benjamin, who peers through shopping arcades' new spaces of illusion (optical as well as ideological). "An aesthetics of appearance, all twinkling surfaces, the play of light and reflection, a fairy-scape" (p. 109) is related by architect Peter Scheerbart's utopian vision in *Glass Architecture* (1914), the transparency of glass seen as making the private public, echoing socialist mandates, allowing for empathy with Nature or the outside, but also emphatically shining out electric lights into the night (pp. 108-109).

(4) The blooming of IG Farben circa WWI coincides with what Leslie terms aesthetics of the "techno-sublime" and "anti-nature" (the Vorticists,

expressionism and Dada). WWI is going to be a chemical war, destructive but a “marvelous performance”: “steel swarms pierce the blue, flares flash up and explosions prick the air and star shell phosphorus explodes to illuminate the battlefield” (p. 126). In 1914, just as the German color industry covers 85% of the world’s needs and WWI is around the corner, a London based group of artists led by Wyndham Lewis publish the periodical *Blast*, a ‘manifesto’ of the Vorticists, printed with a one foot cover of lurid pink and inspired from the blast furnaces of the North and the Midlands (p. 119) to counterpose the art of the South, of Mediterranean impressionism and Italian futurism.

(5) The mutual need to turn coal into rubber and into oil brought IG Farben and Hitler together (p. 170). With the nazification of German art the avant-guardists were deported from artistry to work in industry, either in paint factories or in the camps. Expressionist artist Willi Baumeister sent postcards of Arno Brecker’s Nordic sculptures with ‘Jewish’ noses drawn over their genitalia (p. 202) while, under the guise of Reich researcher, publishing on novel painting techniques – pictures of which resembled Runge’s early experimental results with indigo.

(6) The chemical industry of peace coincided with the Cold War. Aniline dyes, marketed as more ‘real’ because they do not decay, rehearsed Walt Disney pictures’ Technicolor life-likeness. ‘Decay’, or its realization, was suspended by the promise of cryogenics, or by what philosopher Guy Debord calls “frozen” time (p. 221), which, like chunks of labor time, aims to emulate the periodicity of natural cycles but tracks no actual change. Materials inspired J.H. Prynne’s poetry in the *Cool Britannia* of the 1960s (pp. 226-233) and the rubbish dumps in Hackney, where all these new materials ended up, not decaying, the work of London writers Iain Sinclair and Stewart Home. Chemistry, philosophy, and art are all part of a history of matter, which is still telling itself.

If the above story appears a little patchy, that is because it is! Leslie’s story-telling is not standard historiography. Instead of tracking (or purporting to track) cause and effect in the actions of human agents, Leslie wants to capture the point of view of matter. This is a proposition more wholeheartedly undertaken here than in books one might expect to do this, such as perhaps a volume edited by Lorraine Daston titled *Things that Talk: Object Lessons from Art and Science* (New York: Zone Books, 2004). The materials of industrial synthesis, their qualities, and the experience of those qualities are the ‘transformative’ agents in this story. Each of the book’s six episodes features particular substances, chemically developed and nested in the meanings attributed to them by art, science, and philosophy: (1) coal, (2) the first synthetic blue – cyanol, (3) gold, glass, celluloid, (4) the first synthetic drugs – antipyrin, phenacetin, heroin, (5) synthetic nitrates, oil, and rubber, and (6) freezing agents, fluorescent dyes, and plastics.

Leslie's drive is to unveil the stuff of our everyday lives as historical but also to experiment with standard historiography. She ends up making some very interesting observations, but also falls into some of the trademark pitfalls of experimentation.

Although Leslie's narrative seems free-associative and fluid, it sticks to explicit rules. 'Opposites' are put up and linked up at every stage of her narration (p. 7): (1) Coal, the *black* matter of the Romantics' mines, gives rise to the first synthetic *colors*. (2) Early experimentation turns *natural* materials into '*synthetic*' materials. (3) Capitalism converts *waste* matter into *value*, paper money takes the place of gold. Celluloid substitutes *truth* with *see-through-ness*. (4) WWI, the first chemical war, coincides with a rejection of impressionism and its *natural* pigment by an aesthetics of *anti-nature* and color for color's sake. (5) The Nazis' ideology of a natural, eternal *Volk* is acted out by disposable, *ersatz* humans in the death camps. (6) Chemicals of *war* become ones of *peace* and fluorescent dyes used to locate targets make whites 'whiter' and teeth brighter.

There is no problem *per se* with a Hegelian framework of polarity, struggle, and synthesis, but Leslie offers no good warrant for choosing it. The trajectory that synthetic materials follow once formed is not something that Leslie actually tracks. She puts dots between matter, word, and picture but does not always connect them and when she does the shape of dialectical synthesis is not the only possible one (a typical case of underdetermination).

Leslie asks herself if it is possible to tell *a* history through the point of view of matter, qualities, and industry. The more interesting question is whether *history* (any history) can be told through this perspective. In any case, if Leslie genuinely wants to switch frames of reference she should allow for novelty rather than form-fit the things/pictures/ideas to a Hegelian metaphor. Who says chemicals 'oppose' rather than 'match' each other in reactions? And would this question *really* emerge from the point of view of matter?

In conclusion, *Synthetic Worlds* is a book worthy of acclaim; for its industry, its artistry, and definitely for the philosophical questions it provokes.

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