After suffering a dearth of attention, the intricate mechanico-anatomical illustrations produced under the guidance of German-Jewish surgeon, gynecologist, obstetrician, writer and polymath, Fritz Kahn (1888-1968), have attracted a plethora of publicity. In 2009 Uta and Thilo von Debschitz's monograph with 350 illustrations was published by Taschen. The following year, the first large-scale exhibition of his work was held in Berlin at the Medizinhistorisches Museum der Charité followed by several others including, in 2017-18, *Transformer. Infografik 1920 bis 1945: Fritz Kahn, Otto Neurath et al* at the Deutsches Buch und Schriftmuseum, Leipzig, and *Can Graphic Design Save Your Life*? at the Wellcome Collection. Nevertheless the most incisively analytical and theoretical is the recently published book, *Body Modern: Fritz Kahn, Scientific Illustration and the Homuncular Subject,* by the academic based at the Swedish Collegium for Advanced Study in Uppsala, Michael Sappol.

Judiciously Sappol chooses his quotes to convey Taylorist industrialization and visual modernity experienced by "the salaried masses" when Kahn embarked upon commissioning illustrations in 1922 from Roman Rechn, Alwin Freund-Beliani and Otmar Trester for *Das Leben des Menschen*. "The experience of this century mocks human laws", wrote Joseph Roth. "Man surrounded by machines, is compelled to become a machine himself." Acutely aware of his beholders' experience of machines, Kahn and his team of illustrators developed, according to Sappol, modernizing tropes of scientific and medical illustrations not to explain how the human body looks but to reveal how it functions as an invisible industrial process like a factory or machine. While Corbusier conceived the home as a machine to live in, Sappol surmizes that Kahn reconceived the body as a machine to live in. Fittingly industrial technologies were used to produce the 1,200 halftone photomechanical and photolithographic images illustrating this concept.

Conceiving the body as a cross-sectioned diagram of a factory, most famously illustrated by *Der Mensch als Industriepalast*, Kahn directed Fritz Schüler to depict

¹ Fritz Kahn – Man Machine / Maschine Mensch,

² Kahn's inclusion in exhibitions include the US National Library of Medicine Gallery, *Dream Anatomy* and the British Library *Gallery of Machines*.

³ Joseph Roth, *Neue Berliner Zeitung ("12-Uhr-Blatt")*, 24 February 1923; *What I Saw*, 88; Sappol, 9, note 33, 203.

⁴ Sappol 76.

those staffing its machinery and overseeing its assembly lines as homunculi. Although few scholars have satisfactorily unravelled their function, Sappol deduces that these homunculi play covert roles as avatars to mediate an image of the worker as a "working machine" and as "a mechanical part of a larger entity". 5 Far from Max Weber's dystopian vision of rationalized industrial modernity as an 'iron cage', let alone Georg Grosz's Dadaist paintings and cartoons satirizing capitalist anonymity and alienation, Sappol reveals how Kern's didactic images represent an apotheosis of the "technical spirit" and its "dynamic energy". ⁶ This becomes clearer in Sappol's analysis of Wunder in uns capturing the rationalization of factory work transpiring across the Weimar Republic alongside the application of Frederick Winslow Taylor's principles of scientific management. "The clean, modern, electrified head office", as Sappol points out, is located in the brain being staffed by "men in suits" while the "sweaty, industrial dirty work" requiring "muscle power" in the mouth and the digestive system is performed by "men in aprons and work clothes". By no means without its adherents, Sappol reveals that between 1922 and 1931, Das Leben des Menschen alone sold over 70,000 copies. Conterminously, Sappol points out, the popularity of Kahn's publications as sources for public health agencies, medical journalists, magazine illustrators, poster artists, cartoon animators and exhibition curators in a range of countries, including the Soviet Union, although rarely with due acknowledgements.⁸ Yet once the Nazi Party came to power, a dramatic change ensued.

Forced to flee Nazi Germany where his books were placed on the list of 'undesirable writing' with many publicly burned, Kahn endeavoured to renegotiate with his publisher, Franckh. Yet once Aryanized, Franckh claimed the German rights to all of Kahn's texts and images and, as Sappol reveals, retained possession of all the original artwork. As if to add insult to injury, the Nazi approved author and editor, Gerhard Venzmer, was granted permission to use Kahn's images. Publishing on many of Kahn's medical subjects, as well as racial hygiene and heredity, Sappol estimates

⁵ Sappol, 27.

⁶ Ibid.

⁷ Ibid., 31.

⁸ Ibid., 137.

⁹ Ibid., 147.

that roughly half of Venzmer's images came from Das Leben des Menschen but were credited to 'Bildarchiv Franckh'. 10

Exiled in Haifa and Jerusalem before settling in Paris, it was only through the intervention of Varian Fry after the Occupation and Kahn's internment as an 'enemy alien' that he was able to migrate to America in 1941 and settle in Manhattan. Yet even though he scored a seven-page spread in a 1943 issue of *Life* magazine and even though Where in the Brain the Most Important Functions Take Place had been shown at the 1939 New York World's Fair, Sappol points out that "Kahn never became a household name in the United States". 11 With the advent of those who Sappol calls "a group of brilliant young animators" who banded together against Disney to work on commissions from the American military, educational publishers, religious organizations and trade corporations, they revealed a debt to Kahn but produced a different modernist aesthetic and visual rhetoric in relation to modernity. 12 Acknowledging the formalist experimentation of Action painters and Colour Field Expressionists, their graphic designs contained simple elements without technical detail, dynamic compositions without clutter, abstract spaces without illusionistic perspective and appeared able to project a message with "lucid forcefulness". 13 "This was a giant step away from Kahn", Sappol concludes. "For visual modernism to signify, it had to be new – and by the 1950s, as Modernism radiated in every direction, Kahn's way was no longer that." ¹⁴ Accompanying the Modernist formalist episteme, the study and exhibition of art and visual culture was similarly affected, although unmentioned by Sappol.

In The Order of Things: An Archaeology of the Human Sciences, Michel Foucault points out that all periods of history possess underlying epistemological assumptions that determine what is acceptable knowledge. While Foucault focused upon its application in biology, economics, linguistics and natural history, studies of the teaching of art and its histories reveal that the dominant episteme from the 1950s was formalist focusing exclusively upon the specificity of art language, not its

¹⁰ Ibid

¹¹ Ibid., 148.

¹² Ibid., 153.

¹³ Ibid., 156, with reference to György Kepes, *Language of Vision* (Chicago: Paul Theobald, 1944) 130.

¹⁴ Ibid., 160.

interrelationship with such other disciplines as science or medicine, let alone to visual culture. Although Sappol does not pursue the ramifications of this epistemology upon the fall of Kahn, it is arguably a reason why his work was no longer deemed relevant. Yet with the recent epistemic shift to visual culture and to interdisciplinary and transdisciplinary praxes, the fertile ways in which Kahn's work is able to intersect with a range of disciplines and unify them into a single image has been revalidated. Within the current episteme of visual culture, this may be why Kahn's work has become the subject of so many exhibitions and publications, as well as transdisciplinary decodings epitomized by Sappol's analysis of Kahn's images in a mass-mediaized world of proliferating images. In fulfilling his aims by revealing, in his words, "the dialogic relation between embodied life, subjectivity, and pictures", Sappol succeeds in unravelling the transdisciplinary dimensions of Kahn's images in their traversals of art, and the social histories of medicine and science and, in so doing, demonstrate why Kahn's images have become so significant for visual culture today. 15

¹⁵ Sappol, xii.