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Synthetic histories which range across art and science can sometimes be a challenging read. The conceptual landscape inhabited by some cultural historians can result in analyses lacking in clarity; combining this with a narrative which also encompasses detailed consideration of laboratory procedures, wider socio-political context and visual culture might have resulted in a labyrinthine study fraught with peril. That Robert Brain has successfully navigated a course which has something valuable to offer to all these concerns is no small feat.

The Pulse of Modernism is an ambitious book, which takes relatively free reign across the arts and sciences in fin-de-siècle Europe (in practice concentrating heavily on France and Germany), with innovations in the recording of physiological phenomena and the corresponding synergies with artistic endeavour being the principal objects of focus. From the perspective of historians of science the first half of the book – dedicated to ‘Experimentalizing Life’ – is perhaps most familiar and comfortable territory. Here, Brain introduces three distinctive yet interconnected themes in late nineteenth century physiology: the ‘graphic method’ of representation, ‘the vibratory organism’ and experimental phonetics. The representation of physiological phenomena in visual form using traces and other inscriptive models was a key feature of the key period in the development of physiology in the second half of the nineteenth century. This approach made visible the hidden mechanical processes of the body, enabling a new understanding of this subject of perennial artistic interest.

Corresponding developments in artistic practice (and here Brain includes poetry and music as well as visual art) drew heavily on novel recording methods for inspiration. The inscription of lines in experimental science – a hallmark of physiological research in the second half of the nineteenth century – was therefore reinterpreted in art where the significance of line was correspondingly imbued with new meaning. *The Pulse of Modernism* provides ample reason for us to take these connections seriously; after all, the early stages of the modernist movement in the latter part of the nineteenth century was characterised above all else by a fascination with the body. The structure of the book, however, is one which reinforces this seemingly mono-directional transfer of method and inspiration. Following the first three chapters on experimental innovations in the pursuit of knowledge about life, Brain moves to examine ‘the transfer of that experimental system into physiological aesthetics and the arts’ (p.xxvii). In presenting the relationship as one of transference rather than translation, and in a direction from the sciences to the arts, something of the reciprocity of the relationship between these two fields of enquiry into the human condition is hidden.

Clear expressions of anxiety towards scientific interpretations of the human condition are to be found in artistic pieces in the latter stages of the nineteenth century. Brain sets well-known examples such as Edvard Munch’s *The Scream* (1893) alongside other works including *Anxiety* (1894) and other representations of the body as a physiological and psychological object of study and reducibility. Here is perhaps the most innovative aspect of *The Pulse of Modernism* – tracing direct lineage from a turbulent biological and socio-political context to artistic and aesthetic expression. By presenting these thematically, Brain is able to reimage both the modernist movement itself and the physical sites of artistic innovation.

The concluding chapter of the book is short and traces a post-nineteenth-century life for the reconfigured modernist movement, particularly in the United States. This is useful for scholars wishing to engage in a similarly critical fashion with the relationship between later artistic movements and their inspiration in the sciences, but it does rather leave the foundations of the salient point of the book – that '[b]y the eve of the First World War, artwork became a mode of engineering sensory and pulsatile life' – a little undermotivated. This is especially the case because the narrative is not presented chronologically. Brain is liberal with timescale, particularly in the second half of the book, in order to tease out more vividly the ties across the arts and sciences; the approach works well but leaves a conclusion rooted in chronology somewhat hanging.

A second and far more practical difficulty which attends the book is the liberal use of visual material, none of which is presented in colour. It is a shame that the large number of figures are not presented in a more engaging way and, indeed, this takes focus away from the striking and arresting nature of many of the examples used. As well as line, form and measurement, for example, descriptive language in the context of the laboratory also centred on a diverse range of other properties, amongst which colour and texture were prominent features, especially in the biomedical sciences. In an era of accompanying digital materials, it would have been especially useful to have available a companion set of colour images, audio clips and more complete versions of some of the literary sources cited in the book, and authors of texts such as this should consider seriously urging publishers to make the very most of the media available to them.

The Pulse of Modernism, however, is a highly creative endeavour in the cultural history of science and aesthetics which provides a compelling account of the inspiration which various early practitioners of the modernist movement drew from the physiological laboratories of the nineteenth century. For historians working at the intersection between

science and art it is essential reading, whilst historians of science, technology and medicine more generally can draw inspiration from this approach just as artists in the late nineteenth century looked outside the conventional boundaries of their practice to inform new directions of experimentation in the studio.

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