famously, by Karl Marx – a key figure for Darwin's vegetarian correspondent, the German socialist publisher Karl Höchberg). Russell's most compelling chapter aims to show how much industrialization depended on the arrival in eighteenth-century Lancashire mills, via the ports of Liverpool, of the long-fibred varieties of cotton that had evolved, for reasons not yet well understood, only in the New World.

Such an enterprise will not, of course, be to everyone's taste. But even those repelled by the thought of mixing science into their history of science could probably do with some reflection on why they think that way, and whether there are losses as well as gains in maintaining so firm a segregation. For those purposes, as well as for the more creative and constructive ones that Russell hopes to see, his *Evolutionary History* is inspiring company.

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Christine Ferguson, **Determined Spirits: Eugenics, Heredity and Racial Regeneration in Anglo-American Spiritualist Writing, 1848–1930**. Edinburgh: Edinburgh University Press, 2012. Pp. x + 230. ISBN 978-0-7486-3965-6. £70.00 (hardback).
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Since the 1970s, spiritualism has been experiencing a notable renaissance amongst scholars. The attention of the likes of Janet Oppenheim, Alex Owen and others has increasingly, as Ferguson explains, brought spiritualism in from the 'lunatic fringe' (p. 1). The movement is now largely seen to reflect many of the cultural, social and emotional moods of the second half of the nineteenth century. Ferguson's work continues to develop this scholarly conversation by uncovering yet further ways in which the movement reflected the concerns of the time.

For Ferguson, however, these previous studies tend to overemphasize the radical discourse within the spiritualist movement – in particular, regarding gender. The result is that the movement is presented as 'perhaps suspiciously' too familiarly in line with our contemporary paradigms of radicalism (pp. 2–3). As a result, *Determined Spirits* 'aims to reconstitute the movement in terms that would be more recognisable to its early adherents than those offered by its recent post-modern interpreters' (p. 3).

In many respects, therefore, Ferguson's work is a superb exposition of what Robert S. Cox referred to in his *Body and Soul* (2003) as the 'inherently polyvocal' nature of the Anglo-American movement. Cox highlighted that this included conservative and reactionary members as well as the radical elements. However, the truly innovative dimension of Ferguson's thesis is her emphasis on the movement's darker dimension: its eugenic, hereditarian and biodeterministic thought.

This comparatively short work takes on an impressively broad scope both thematically and temporally. Temporally it attempts to encompass the entire period from modern spiritualism's 1848 birth in upstate New York all the way through to 1930. Thematically it takes on spiritualism's relationship with its radical deterministic antecedents (Chapter 1), mental disability and atavism (Chapter 2), eugenics and reproduction (Chapter 3), race and miscegnation (Chapter 4), criminal deviance and rehabilitation (Chapter 5) and aestheticism and realism (Chapter 6).

One of the weaknesses of this work is a by-product of this brave breadth and depth. Those reading this book for insights relating to the latter period (chiefly post-1900) may find themselves a little disappointed. A quick perusal of the bibliography reveals a significant preferential weighting towards the pre-1900 period, which is borne out in the text itself. This imbalance is understandable, however, and does not affect the thesis. Indeed, the emphasis on the earlier period allows Ferguson to highlight the already intense relationship between spiritualism and biodeterministic thought which existed from its origins and fed into as much as fed off the *fin de siècle* degenerationism. However, extension of Ferguson's innovative thesis more substantially into this later period is a piece of research crying out to be undertaken.

Nonetheless, this is just one minor weakness in a book filled with successes. Through the equally brave breadth of topics covered, Ferguson provides a confident and convincing corrective of spiritualist scholarship. Spiritualism's much-lauded proto-feminism is tempered by the appreciation of the thanato-patriarchy that emerges from her reading of the understudied afterlife novels. In one such novel, wives become the heavenly handmaidens to their husbands for eternity. Similarly, she highlights the highly unsatisfactory treatment of spiritualism's discourse on race. She uncovers that much writing within the community presented non-whites becoming white in heaven (as part of the thanato-perfectionist narrative) or a form of celestial apartheid. It is important that this awareness of a less progressive discourse on gender and race feeds into the wider work on spiritualism.

Chapter 2 and the first half of Chapter 5 are two particular highlights. Chapter 2 quickly picks apart the spiritualist movement's complex relationship with the mentally defective and disabled. Ferguson notes that spiritualists were not just objects of medico-cultural discussion of mental defect (E.B. Tylor, for example, seeing their belief as mentally primitive and atavistic), but active participants in the broader discussion. She carefully unravels the complex antagonism between, on one hand, their elevation of intellect and denigration of the mentally disabled in wider society and, on the other, their simultaneous elevation of the ignorant in the promotion of the movement itself.

The first half of Chapter 5 is also fascinating. It offers a brief reappraisal of the celebrated criminologist Cesare Lombroso. Lombroso's adoption of spiritualism in later life is often considered an atavism in itself. However, Ferguson chooses deliberately to focus on 'the persistent but hitherto unexamined affinity between nineteenth-century biocriminology and modern Spiritualism' (p. 144). This is a valuable contribution to the still nascent move to offer a more sympathetic reading of the conversion of leading scientific figures to spiritualism. Future works on other 'atavisitic' spiritualist scientists – such as Alfred Russel Wallace, Oliver Lodge and William Crookes – will no doubt benefit from aspects of this work. Equally, future biographers of Lombroso will find this entire chapter particularly enlightening.

Overall, this book does exactly what it sets out to do. For those familiar with the period under study, the image pulled from Ferguson's book is undoubtedly more clearly rooted in its time. Ferguson brings to relief the 'conflicted discourse' of the spiritualist movement with regard to race, gender, criminality and mental ability and disability with great clarity (p. 81). As a result, *Determined Spirits* provides an intelligent and impressive corrective of the radical bias in spiritualist studies. Similarly, her focus on spiritualism's complex but notable place in the wider scientific discourse of the age will offer scholars a worthy go-to text to build a fuller picture of spiritualism's place in the history of science.

Determined Spirits is, undoubtedly, a worthy purchase for those within the field of spiritualist and occult studies. What is more, Ferguson's highlighting of the movement's 'overt commitment to bioessentialism and eugenics' heightens the movement's place within the history of science (p. 3). As such it should find its way onto the bookshelves of many academic libraries and individual scholars alike.

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Alexander C.T. Geppert (ed.), **Imagining Outer Space: European Astroculture in the Twentieth Century**. Basingstoke: Palgrave Macmillan, 2012. Pp. xvii + 393. ISBN 978-0-230-23172-6. £70.00 (hardback).
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'It is virtually impossible', notes Alexander Geppert, 'to experience outer space in a direct, unmediated manner' (p. 13). Before the space programmes of the twentieth century, humans could only observe at a distance or imagine the extraterrestrial. Even the handful of people who have