



Being an Interdisciplinary Academic: How Institutions Shape University Careers. By Catherine Lyall. Palgrave Pivot, 2019. Pp. 154. Price EUR 51.99 (hardcover). ISBN 978-3-030-18658-6.

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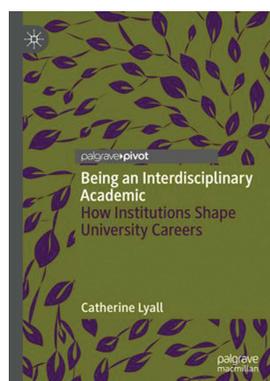
This is a very readable book from a very experienced researcher into the topic, originally a graduate chemist. She is someone who has provided reports on the topic for various important funding and university organizations. The subtext is one of eager youngsters trying to make their careers versus the bias of heads of single-subject departments with society looking on at the neglect of its pressing problems whilst it perceives that the focus is on dotting the *i*s and crossing the *t*s. So, this book by Catherine Lyall is a book for our time. I highly recommend it. Let me explain why I liked this book . . .

The challenge tackled by Catherine Lyall is underpinned firstly by her interviews of those who practise interdisciplinary research and her considerable personal experience: *e.g.* at loc. 152 of my ebook copy she states '[there] is a manifest misalignment [between interdisciplinary and single-discipline research] . . . the prevailing norms being discipline-based scholarship.' But why can some be so against interdisciplinary research? There is a fear of an erosion of the research funds for their discipline-driven departments. I tried to counter this fear in a posting at *Nature* that interdisciplinary science can pull in new research funds to science and its cash-strapped scientific researchers (Helliwell, 2007). Whilst these points document the big issues, the overall direction of travel is obvious with the merger in 2018 of the International Council of Science (formerly the International Council of Scientific Unions) and the International Social Sciences Council.

Lyall's interviews, 22 of them, reveal the career challenges that have been faced by interdisciplinary-driven researchers and showed up the need 'to improve on current practice . . . (loc. 291) especially of governance'. Then there were in addition ten leaders of universities who were interviewed. Lyall confides that a weakness of the interviewees as a group is their being UK or northern Europe based. That said, I found that the interviews are well balanced by the book's references, and for example chapter 1 includes policy documents from the Global Research Council, from the US National Science Foundation and on Australian research governance.

Chapter 2 focuses on summarizing the interviews. The researchers are a cohort of people originally trained some ten to fifteen years earlier during their PhDs on two schemes devoted to interdisciplinary research. One funding scheme was the UK's Economic and Social Research Council (ESRC) with the Natural Environment Research Council and the other was the ESRC with the Medical Research Council. At loc. 881 an aspect identified from the interviewees was 'identity fatigue', whose solution was focusing on their research areas rather than an academic subject. To preserve the anonymity of the interviewees, overall career highs and lows were nicely tabulated. At this I wondered, though, if these were much different from single-discipline career progressions, *i.e.* which could have formed a control group for comparison. The reference list cites two extensive evaluation reports authored by Lyall and co-authors; their weblinks are <https://esrc.ukri.org/files/research/research-and-impact-evaluation/esrc-nerc-interdisciplinary-research-studentship-scheme/> and <https://esrc.ukri.org/files/research/research-and-impact-evaluation/esrc-mrc-interdisciplinary-studentship-and-postdoctoral-fellowship-scheme/>.

Chapter 3 is entitled '*Are you one of us?*' *How institutions impact interdisciplinary careers*. This chapter sharply scrutinizes departmental cultures (loc. 1032). Shocking anecdotes are described by Lyall (loc. 1122), such as the interviewee who had been channelled by the funding body to face one of its funding panels (biology) and was asked



'Are you one of us?'. Also Lyall describes the researcher whose interdisciplinary publication was rated by their university as poor, and impeded their promotion, but for their co-author from a different subject their university had rated the same publication highly. Such research assessment inconsistencies confirm the extra hazards of being judged by single-discipline-based peers. The chapter summary concludes (loc. 1258) by stating 'What could be done to mitigate the negative consequences? on an interdisciplinary researcher's career'. The reference list includes further useful reports: https://www.research.ed.ac.uk/portal/files/23461807/Lyall_and_King_Interdisciplinary_Peer_Review.pdf and one from the US National Academy of Sciences, <https://www.nap.edu/catalog/11153/facilitating-interdisciplinary-research>.

Chapter 4 is entitled *The nets we weave: consequences for interdisciplinary capacity building*. This chapter addresses the when of becoming involved in interdisciplinary research, spanning the views of the PhD cohort and the university leaders' views as well as the funding agency viewpoint. This interdisciplinary research PhD cohort remained enthusiastic about their training with a few, modest, provisos, whereas university leaders stressed the need for being strong in a discipline before joining interdisciplinary research projects. Either way the interdisciplinary researcher should be a person who 'can see interconnections between disciplines and bring them together synergistically' (loc. 1543). Such a team leader for broad-based research challenges may fare better in their career development in industry or government science centres than the largely vertically arranged discipline alongside discipline in a university.

At loc. 1569 is the nice quote of Isaiah Berlin (1953) (based on Archilochus from 700 BC) of scholars being either single-discipline 'hedgehogs' or interdisciplinary 'foxes', and the following pages of this chapter develop these analogies further. The chapter concludes (loc. 1667) with a set of questions about what steps institutions should take to develop interdisciplinarity in their staff, noting that university leaders do not have a consensus and they show 'fundamental misunderstandings about the nature of interdisciplinary knowledge, how this is acquired, and the skills that interdisciplinary researchers offer'. Society at large should indeed be troubled about the universities claiming to be for the public good and yet showing such 'fundamental misunderstandings'. This chapter cites a useful overview report from the League of European Research Universities (LERU, 2016) involving a panel of 23 research-intensive universities. It is often cited in the next chapter.

Chapter 5 is entitled *Facilitating serendipity?* At loc. 1871 a core question is aired about 'whether scholarship is still about trial and error or ... planning and prediction in the modern academy.' This chapter surmises (loc. 2031) that 'there is an inherent hypocrisy in university leaders, research funders and policy makers claiming that they want to facilitate interdisciplinarity but not create the conditions for it.'

Chapter 6 is entitled *Towards new logics of interdisciplinarity*. This chapter opens with a bang (loc. 2100): 'Interdisciplinarity obviously presents an organizational problem for universities.' Society expects better and can get it, as Lyall explains. The final chapter is entitled *Conclusion: 'the funding can only do so much'* and includes, for example, at loc. 2670, specific practical proposals for the future research environment, and advocates that both types of research should be possible.

Appendix A is a comprehensive set of further reading and web advice tools. Appendix B describes the research design developed by the author for her book. There is a 'subject and names together' style of index.

So, overall, for the individual, 'why do interdisciplinary research?' (at loc. 177 Lyall posed that question). To inspire, the book could have focused more on specific research challenges. As I explain in chapter 18 of my recent book *The Whats of a Scientific Life* (Helliwell, 2019), major challenges such as climate change (chapter 16) or ageing do not respect academic boundaries. These can and do inspire, such as for the Global Challenges Research Fund (see <https://www.ukri.org/research/global-challenges-research-fund/>), and are mentioned by Lyall (loc. 176). However they can and should be set in the context of single-discipline research examples chosen to inspire, such as the Big Bang in astronomy or chemical catalysis, which are wonderful fruits of single-discipline research.

In summary, I liked this book, not least because of its data gathering from interviews of two decent-sized cohorts of interviewees, namely the practitioners and the senior university managers, set in a context of the formal work done by the extensive personal work of the author for various research bodies. The book also finishes well, with proposals for both practical and institutional governance reform. I found the book well written and with extensive references for each chapter, various of which I accessed via the web as pdfs, including the official reports. If Lyall's well researched recommendations are followed her book will have a very positive impact.

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