

Practice makes perfect

Practising Interdisciplinarity

Peter Weingart and Nico Stehr (eds.)
University of Toronto Press
Hardback ISBN: 0-8020-4328-3, £40.00
Paperback ISBN: 0-8020-8139-8, £16.00

Interdisciplinarity is often seen as a characteristic of humanities subjects – think, for example, of women’s studies and American studies, both valuable amalgams of history, sociology, politics and other disciplines. Boosted by student calls during the late 1960s for radical academic reform, such interdisciplinary programmes sought to improve academic relevance and holistic understandings.

The editors of this coherent collection argue, however, that interdisciplinarity is an important feature not only of soft-edged specialisms such as environmental or science studies, but of modern science itself. They claim that the natural sciences have more fluid boundaries than the humanities because “the production of knowledge is fast and the half-life of knowledge short” (p. x). So much so, that “the organizational matrix of disciplines is beginning to dissolve” (p. xi). The location is important: discipline-crossing is uncommon at universities, where knowledge production is meant primarily to *understand*, but favoured in innovatory environments where practical *problem-solving* has greater value.

Weingart and Stehr cite examples of scientific interdisciplinarity throughout the twentieth century – indeed, as a constant opposing force to the discipline-forming processes that culminated in stable university departments. The linking of physics and chemistry via the Third Law of Thermodynamics; neurobiology and psychology creating cognitive science; systems research; molecular biology; materials science; such cases drew science “out from its relative social isolation, its elite status, and moved closer to the mundane concerns of society” (p. xiv).

Yet the estimated nine thousand distinguishable fields of knowledge clearly have not coalesced into a unified science. This wide collection of specialisms has not been reduced to the norms of theoretical physics, as hoped by the logical positivists, nor have they yet been united by over-arching generalisations. Interdisciplinarity, argue the editors, is a response to this failed promise. The first wave of interdisciplinary programmes of the 1970s struggled to survive, and many were quietly discontinued.

Those that escaped the relabelling from ‘progressive’ to ‘outdated’ continue to face obstacles that are ideological, psychological and organisational.

The book’s first chapter by Julie Thompson Klein on the conceptual vocabulary of interdisciplinarity rehearses the difficulty in finding definitions. Scientific funding agencies and policy-making organisations have striven in vain to define specific disciplines and to characterise the nature of the collaborative process. The struggle for understanding has created a proliferation of analogies. The author notes that most significant research activity has occurred at the ‘interdisciplinary borderlands between established fields’. In such a situation, asks Klein, do the territorial metaphors of fields, domains and centres have any utility? Nevertheless, she repeats other unproductive metaphors, such as ‘interdisciplinary cognition’ being akin to ‘information theory’.

Defining disciplines should be easier, and is a necessary precursor to discussing inter-, cross- or trans-disciplinarity. The editors describe disciplines as “the social organizations of intellectual work” (p. 111). Stephen Turner argues that creation of disciplines has often been associated with the existence of a market – that is, an occupational need arising before the content and meaning of a disciplinary identity. This connection with occupational and professional interests is often lacking in interdisciplinary research.

This book focuses on the practise of interdisciplinary research. The contributions vary considerably in scope and depth. Eric Scerri provides the examples of the scientific practice of individual researchers currently at the Caltech Beckman Institute. Rogers Hollingsworth and Ellen Jane Hollingsworth discuss how the structures and cultures of research organisations can influence radical innovation. Anthony van Raan describes a bibliometric-empirical approach to scientific interdisciplinarity. Rhodri Windsor Liscombe discusses the working of the long-established Individual Interdisciplinary Studies Graduate Program at the University of British Columbia. Beyond these practitioners’ and analysts’ accounts, there is a valuable final section on the perspectives of the funders. This addresses the external funding of interdisciplinary research at universities (Wilhelm Krull) and specific initiatives at the National Science Foundation in the USA (Edward Hackett).

The chapters, while disparate, are well linked by the main and section introductions and concluding comments. Characterising interdisciplinarity is notoriously difficult. By focusing on examples of successful interdisciplinary practice, the editors have produced a book that should be of considerable relevance to policy makers and academics alike.

Sean Johnston is Senior Lecturer in Science Studies at the University of Glasgow, Crichton Campus, Dumfries DG1 4ZL, UK