Homosexual behaviour is often portrayed as an ‘evolutionary paradox’, because it ‘cannot obviously lead to immediate fertilization’ (page 2). The same can be said for reading books, in particular this one. Whoever wants to be asexual for a long time to come should work his or her way through the 558 densely fonted sheets, which include 91 pages of almost 3000 references. Only when it came to the index does the author seem to have run out of steam, leaving us with a haphazard assemblage of entries. Otherwise, everything about homosexuality can be found somewhere in this book, whether it concerns rather physiological aspects, such as genetics (chapter 3), ontogenesis (chapter 4), endocrinology and neurobiology (chapter 5), and immunology (chapter 6), or the more functional aspects of sexual segregation (chapter 7) and life history (chapters 8, 10).

Aldo Poiani is an evolutionary ecologist at Monash University, Australia, with social and sexual behaviour in birds a main thrust of his research. His book offers the most comprehensive synthesis of knowledge about the phenomenon of homosexuality that exists to date. Whoever wants to teach or research on this topic must own this book. For me, this is sufficient praise for an important book with which I struggled in some other ways.

The book’s title and subtitle are, apart from two words, identical to those of an edited volume that Paul Vasey and I published, *Homosexual Behaviour in Animals: An Evolutionary Perspective* (Sommer and Vasey 2006). Like Poiani, we worked in the standard biological framework of distinguishing between proximate mechanisms (‘how come?’) and ultimate functions (‘what for?’), as well as reconstructing ontogenetic and phylogenetic pathways. Like Poiani, we also looked at our own species as a particular type of animal – a comparative angle that so easily infuriates postmodernists.

Nevertheless, I find something strange about Poiani’s choice of title. Vasey and I deliberately decided against the catchy phrase ‘Animal Homosexuality’ and instead chose the more cumbersome ‘Homosexual Behaviour in Animals’. We did this because ‘Homosexual behaviour’ implies a sexual attraction, often exclusively, towards members of one’s own sex. Thus, someone might have a homosexual orientation but not engage in same-sex sexual behaviour (such as when forced into a heterosexual marriage). Others may engage in homosexual behaviour but not fantasize about such sex acts (such as when other-sex partners are not available). Finally, many animals have sexual interactions with members of both sexes, thus displaying bisexuality and homo- bisexuality.

Poiani knows all that, of course (page 2), and also defines ‘homosexuality’ as ‘sexual orientation characterized by sexual attraction for individuals of the same sex’ (pp. 1, 430). Consequently, despite the title of his book, many of the behaviours that he details are not reflections of a sexual orientation. His choice of title is all the more puzzling because Poiani reworks the rather simple idea that a lack of other-sex partners might correlate with increased frequencies of same-sex activity into what he calls ‘The Synthetic Reproductive Slew Model of Homosexuality’, a vision that he rebrands (chapter 10) as ‘The Biosocial Model of Homosexuality’.

To arrive at such a model that tries to integrate numerous potential evolutionary explanations required Poiani, in his own words, to take a ‘long and winding road’ (page 403), a path littered with dozens of suppositions, some of which come across as stepping stones, whereas others seem more like obstacles. In fact, Poiani’s ‘taxonomy of hypotheses’ runs over 14 pages (pp. 12–25). The 53 headings list numerous hypotheses that aim to solve the ‘evolutionary paradox’ of same-sex sexual interactions by pointing towards at least indirect benefits of non-conceptive sex. These include the paradigms of kin selection, reciprocal altruism, reproductive suppression, parental manipulation, hypersexualis, best-of-a-bad-job and heterozygote advantage as well as sexually antagonistic selection (a scenario in which homosexual brothers are some sort of genetic fallout of sisters who enjoy boosted attractiveness).

All hypotheses are given a descriptive treatment. However, Poiani loses his cool when he mentions Bagemihl’s (1999) *Biological Exuberance: Animal Homosexuality and Natural Diversity*, a big book offering the rather esoteric vision that a surplus of sunlight leads to a luxuriant portfolio of sex. Poiani finds that this ‘vague’ idea and Bagemihl’s ‘facile dismissal’ (page 11) of any standard evolutionary perspective adds ‘very little’ (page 24) to our understanding of homosexuality. One could not agree more, as Bagemihl lumps ‘together all sorts of social activities that cannot be uncritically interpreted as sexual, let alone homosexual’ (page 11). Despite these flaws, Bagemihl’s book can still serve as a Wikipedia-like reservoir, given that his book covers also animal taxa other than birds and mammals, which are the focus of Poiani’s work.

Poiani’s tome includes a surprise cameo by renowned sexologist Alan Dixon, stretching over 19 pages and thus just 3% of the book, covering ‘homosexual behaviour’ (sic!) in primates. One wonders why the multitalented Poiani requested assistance for this taxon. In any case, Dixon’s contribution is written in accessible and lucid prose, and he could probably have reworked the whole text to considerable benefit.

This brings me to the issue of Poiani’s own style, which is often labyrinthine, with sentences that snake on until the reader has forgotten how they began. Then there are the so-called ‘simplified’ charts (page 363f) that accompany Poiani’s synthetic model. These allegedly ‘simple’ ideas include dozens of factors and hundreds of associated values. The author’s explanation for this plenitude provides little consolation: ‘We need a mathematical formulation that is at the same time realistic and that takes into account the
complexity of the phenomenon’ (page 332). That sounds reasonable, albeit trivial. But I really like how the paragraph goes on: ‘Oversimplifying the problem in order to make it more easily treatable mathematically will be tantamount, to paraphrase the old Islamic tale of Mullah Nasruddin, to looking for a lost ring where you did not drop it simply because there you have plenty of light’ (page 332). Still thinking about this one.

From Poiani’s perspective, everything needs to be taken into account while tackling the riddle of homosexuality: ecological constraints, mating systems, genetic relatedness, reproductive physiology, sex ratio, sexual dimorphism, social bonds. Such staggering complexity rules out any concise and unifying take-home message one might have foolishly wished and hoped for, given that this book was conceived by a single mind, and is not the product of multiple authors coming together under the umbrella of an edited volume.

Indeed, same-sex sexual behaviour is probably too convoluted to allow for a simple take on it. Recent research has made clear that numerous animal taxa engage regularly in homosexual activities, whereas closely related groups of animals are remarkably abstinent. Thus, same-sex sex has various ontogenetic and phylogenetic pathways as well as different proximate and ultimate causes (page 413). The phenomenon of ‘homosexuality’ is therefore not a uniform trait but encompasses extreme plasticity and a correspondingly great diversity of behaviours. What unites them is our inclination to categorize, rather than any underlying structure of reality. That conclusion might not be enlightening, but Poiani’s monumental work serves as a monumental reminder of this mantra of social constructivists (page 26).

To sum up, I learned little new about the topic of homosexuality from Poiani. But whoever explores his book can learn all that we do know.

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References