Consanguinity in Context. By Alan H. Bittles. Cambridge UK: Cambridge University Press; 2012. 328 p. US $87.16 (Hardcover). ISBN: 978-0521781862.

I must admit that when I first volunteered to review Consanguinity in Context, I had confused consanguinity with ex-sang- guinity. Expecting a book about porphyria, rabies, and other possible sources of vampire myths, I was quite surprised to instead start reading about inbreeding. However, far from being disappointed, I found Alan Bittles’ book to be extremely fascinating. Bittles provides an eye-opening and exhaustive review of the political, religious, economic, social, and biological factors impinging on consanguineous unions. His goal for this work is well summarized at the end of chapter one: “… to provide an appropriately extensive framework of information within which the subject [of consanguineous unions] can be rationally and dispassionately evaluated.” Consanguinity in Context admirably fulfills this objective.

Bittles’ book can be roughly divided into four parts. First, he discusses how people around the world feel about consanguineous unions, moving smoothly from historical examples to present-day prejudices. Next, he describes why inbreeding can evoke such strong emotional responses in people by describing the religious, legislative, and early medical edicts that have condoned or condemned marriage between relatives. The bulk of the text looks at the genetic and biological ramifications of consanguineous unions, focusing on first-cousin marriages, for which the most data is available. Finally, Bittles ends the book with a number of concrete recommendations for moving forward, both in terms of legislation as well as how genetic counseling services can be better tailored to specific societies.

In keeping with the historical perspective throughout Consanguinity in Context, there are myriad details in the book, particularly in the first two sections. However, periodic references back to previous material keep the reader grounded. Further, Bittles has the rare ability to elevate historical analysis to an intriguing account of personal lives and how they motivate national actions. In addition, the author has a wry sense of humor, and small jokes are scattered through the text like gifts for the attentive reader.

An overarching theme of Consanguinity in Context is the lack of properly performed medical studies on consanguineous unions. The genetics and biology section begins with a discussion of population genetics in general, laying out the difficulties associated with studying the effects of inbreeding and well as the criteria that should be met for a scientific study to be reliable. Numerous studies are then summarized that analyze the relationship between consanguineous marriages and, among other metrics, birth defects, infant and child mortality, and adult diseases. Few of these studies meet Bittles’ standards, however, further supporting his claims that additional analyses must be conducted. In fact, a secondary goal of the book seems to be prompting fledgling geneticists to address this informational gap. So go! Perform these studies! But please use appropriate multivariate analysis.

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Introduction to the Senses: From Biology to Computer Science. By Terry R.J. Bossomaier. Cambridge, UK: Cambridge University Press; 2012. 345 p. US $75 (Hardcover). ISBN: 978-0521812665.

From the title alone, it is clear that Introduction to the Senses: From Biology to Computer Science is a highly interdisciplinary book. Targeting graduate students and advanced undergraduates in the biology, robotics, and computer science fields, Bosso- maier ambitiously gives a grand overview of the five traditional senses before delving deeper into topics like non-human sensory systems and sensory integration. Trying to understand the senses is a daunting task, for which there are many perspectives to approach from. This book defines the senses
as “extracting and processing information from the environment,” and its approach is mainly from a quantitative viewpoint. From here, the ultimate goal is to provide a foundation for “building artificial sensors, understanding human-computer interaction, and creating artificial creatures for real or virtual worlds.”

The writing style is very engaging, in an almost storyteller-like manner, peppered with historical anecdotes and highlights from the latest research developments, and the author’s expertise and enthusiasm are apparent. What makes this book fascinating, however, might also be one of its weaknesses. Taking the reader on a whirlwind tour of the sensory systems, Introduction to the Senses is at times in danger of reading like a laundry list of ideas and stories rather than a cohesive presentation. The book is very comprehensive, packing volumes worth of anatomical, physiological, mathematical knowledge and more in its dense 345 pages. Helpful diagrams, figures, and graphs anchor the book chapters, which typically start with a useful “Introduction” or “Overview” section and end with an “Envoi” section. Examples are abundant, both from nature and from technology; however, while a select few may help to enforce a point, too many bullet points in no patent order tend to dilute the overall message.

Each of the 11 main chapters, excluding the introduction, covers enough material for several textbooks. One chapter, for example, covers all of Fourier theory, while the proceeding chapter explains information theory. There is clearly too much information to be a light expository read, but despite the chapter sections and subsections of introductory descriptions, there is not enough technical detail to serve as a standalone textbook either. Important math and physics formulas are presented with solid verbal explanations, but little theoretical buildup. From the Nyquist sampling theorem to Shannon’s information theory, a background in or heavy exposure to signal processing is presumed of the target audience. However, this book does serve as a broad review of important signal processing concepts, as well as a survey of the latest innovations in sensory information processing.

Overall, both the breadth and depth of Introduction to the Senses are impressive, although the compact nature of the book precludes further discussion. More than anything, it serves to inspire. A go-to resource for pertinent ideas, this is indeed a reference book worth keeping on the shelf.

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