

## BOOK REVIEW

***Psychology of Music: From Sound to Significance*, by Siu-Lan Tan, Peter Pfordresher, and Rom Harré. Oxford: Psychology Press, 2010. 368 pp. ISBN 978-1841698687. \$70.00**

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*Photos and brief biographies of the authors are available as supplemental materials.*

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Music psychology is ready for a new generation of textbooks. It has been a quarter of a century since Deutsch (1982), Sloboda (1985), and Dowling and Harwood (1986) staked out the new field, showing how the methods of cognitive psychology could be used to study music. Now music psychology has its own specialist journals, professional meetings, and organizations. Its scope has expanded beyond translating methods developed for studying language comprehension for use in music perception. Music psychology now includes performance, development, neurophysiology, composition, and the diverse functions of music in everyday life. The publication of a new textbook designed for undergraduate courses in music psychology reflects the growing maturity of the field.

Undergraduate textbooks are a benchmark in the development of a new field, as textbooks presume the existence of courses to provide a market. At the same time, they promote the propagation of such courses by making them easier to prepare. Textbooks also play an important role in establishing the boundaries and organization of a field. If music psychology follows the path of other new fields within psychology, for example, cognitive, health, gender, we may expect that the next few years will see an emerging consensus on a canonical organization for textbooks and courses.

Music psychology now seems to be at the point in its development that cognitive psychology was around 1980 when the first undergraduate textbooks were appearing (e.g., Anderson, 1980), 25 years after the seminal publications of the 1950s, 13 years after Neisser's (1967) eponymous "cognitive psychology," and a decade after Lindsay and Norman's (1972) introductory "human information processing" textbook. In music psychology, recent years have seen a growing stream of books laying theoretical and methodological foundations for new subareas of inquiry, summarizing the state of knowledge in more established areas, and informing the educated reading public about the hot issues. A new textbook that builds on all of this recent activity is particularly welcome to these reviewers who will be teaching an undergraduate course in music psychology for the first time next semester. The publication of this timely and well-researched book makes our task much easier.

In their preface, the authors, Siu-Lan Tan, Peter Pfordresher, and Rom Harré, tell us that the inspiration for their book came from their experience of teaching the psychology of music. Their goal, they tell us, is to cover not only the cognitive psychology of

music that has been the traditional focus of the field, but also more recent developments in "social, developmental and applied" aspects (p. ix), as well as to integrate the contributions of neuroscience throughout. In the interests of reaching a wide audience, the authors have "kept technical terminology for music and psychology to a minimum" (p. x). Only the chapter on musical structure assumes technical knowledge, both in music and psycholinguistics.

The book is organized in four parts. Part 1: Foundations introduces the reader to acoustics, the physiology of hearing, and the techniques of neuroscience in three chapters. Part 2: The Perception and Cognition of Music provides chapters on the perception of pitch and melody, rhythm and meter, and the analysis of musical structure. Part 3: Development, Learning, and Performance turns to areas that have developed more recently with chapters on the musical capacities of fetuses and infants, early musical development and education, practice, and performance. Finally, Part 4: The Meaning and Significance of Music examines the role of music in society with chapters on its social psychology, meaning, emotion, and culture.

The scope of the book is impressive, reflecting the diverse backgrounds of its authors. Although all three are psychology PhDs, they have very different backgrounds: music education (Tan), music cognition (Pfordresher), and social psychology (Harré). The organization of the book is clearly aligned with these different backgrounds. Indeed, the authors successfully interject their individual voices through the use of personal anecdotes that personalize the material. Although many chapters (in some cases passages within chapters) clearly reveal their authorial hand, the book speaks, for the most part, with a unitary voice. We particularly appreciated the authors' collective penchant for the gratuitous scholarly flourish: Who knew that Galen served as physician to the gladiator school at Pergamum (p. 61)?

In describing the concepts of sine waves, overtones, and complex sounds in Part 1: Foundations, the authors make the material accessible to mathematically unsophisticated readers by drawing on examples from popular music and avoiding complex mathematics and formulas. They provide an interesting overview of the acoustics of different classes of instruments and explain how the sounds of performance are structured by the acoustics of the room or hall. A thorough account of the difference between the acoustics and perception of sound concludes with a detailed explanation of the physiology of hearing. This part of the book ends with an explanation of the techniques of neuroscience. One has to wonder about the decision to allot 70 pages to this introductory material. Not only does it provide a slow start to the book, but the material is covered in more depth than strictly necessary while excluding basics of music theory that are surely as important.

Part 2: The Perception and Cognition of Music introduces the basic building blocks of music: pitch, intervals, harmony, and key in one chapter; pulse and meter in another. It is here that the reader begins to regret the lack of sound files illustrating the phenomena described. In particular, Deutsch's (1975) work on auditory illu-

sions is difficult to appreciate without ready access to auditory files of the illusions. (The interested reader can, however, find these on Deutsch's Website at [http://www.philomel.com/musical\\_illusions](http://www.philomel.com/musical_illusions).) The discussion of rhythm, meter, and timing is effectively introduced by an anecdote from Pfordresher about a workshop on rhythm where each music cognition researcher had a different definition of rhythm (p. 96), preparing the reader for the complexities to come. The final chapter of this part is largely devoted to a dry account of Lerdahl and Jackendoff's (1983) generative theory of tonal music and of Narmour's (1990) implication–realization model.

Part 3: Development, Learning, and Performance includes four chapters that follow the trajectory of musical development from fetus, through childhood, to music practice and training, to expert performance. Those unfamiliar with the methods used to study cognitive development in infants and young children are provided with a thorough primer, as the musical capacities of the young are explained. The much-misrepresented Mozart effect is dissected, providing a corrective to popular misconceptions and media accounts. The chapter on practice is nicely framed by Anders Ericsson's theory of how expertise is developed and concludes with an account of the effects of practice on the brain. We wished only for something a little more exciting by way of pictorial representation than the formally dressed young man seated at the piano and the silver-haired violinist in concert attire. The final chapter in this part describes the contributions to performance made by memory, motor control, and feedback before concluding with a brief description of the little that is known about brain activity during performance.

Part 4: The Meaning and Significance of Music is marked by a subtle but distinct change of style. Whereas earlier chapters generally compared competing theories evenhandedly, without taking a position on their relative merits, the final chapters take a more partisan approach, espousing theories and marshalling facts and arguments to support them. Social psychological theories of group processes are invoked to explain the roles of audience and musicians in concert performance; ensembles with and without conductors are accorded separate treatment. Social stereotypes are invoked to explain the effects of gender on choice of instrument and on the evaluation of both performers and composers. The chapter on musical meaning draws on musicology (Huron, 2006; Meyer, 1956), philosophy (Langer, 1942), and cognitive psychology (Kivy, 1990). Reading this section, we wished that the important questions of how music expresses and induces emotion were addressed earlier in the book rather than being reserved for the

penultimate chapter. The effective closing chapter, on culture and music, considers which aspects of music might be universal. A brief survey of the musical abilities of nonhuman animals is followed by cross-cultural comparisons of pitch and tonal structures and rhythm and metrical structure, with extended description of Indian and Indonesian music.

We expect that this book will play an influential role in establishing the canonical organization for music psychology textbooks and hope to see it go through many editions in the years to come. Several of the chapters already appear to be part of an established canon (e.g., pitch and melody, time, structure, performance). On the other hand, the author's four-part organization of the book is innovative; it will be interesting to see how it endures. In future editions, we hope to see online access to illustrative sound files and more effective use of figures and illustrations. Meanwhile, we heartily welcome this ambitious book as a valuable new resource for teaching the psychology of music.

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