Creativity is usually defined as mental activity that produces new ideas and concepts, or new links between existing ideas or concepts. Although seemingly a simple phenomenon, it is in fact highly complex. This is manifested, for instance, by the tens of different definitions of it given in the psychological literature and the lack of any authoritative perspective of it. Although psychological research on creativity has been carried out for more than half a century (the beginning of this activity being often associated with J. P. Guilford’s presidential address to the American Psychological Association in 1950), as of yet there is no standardized measurement technique for this phenomenon.

Creativity is perhaps most often associated with the fields of art, music, and literature. In fact, it was as late as at the turn of the 20th century when the first reflections on creativity in other fields of human activity, such as science, began to emerge. Music provides a potentially fruitful platform for the study of creativity, because, contrary to many other forms of human activity, it mostly lacks referential meaning. Given the complexity of the phenomenon, it is perhaps not surprising that the phenomenon of musical creativity has not been extensively dealt with in the music-psychological literature. In fact, the book reviewed here, Musical Creativity: Multidisciplinary theory and practice by Irène Deliège and Geraint A. Wiggins, is to the knowledge of this author the first book entirely devoted to this phenomenon. The book is based on talks given at the conference held at the University of Liège in April 2002 on the occasion of the 10th anniversary of the founding of the European Society for Cognitive Sciences of Music (ESCOM). It comprises 20 chapters written by specialists representing a wide range of fields; the chapters are organized into seven parts, which explore musical creativity from the viewpoints of philosophy, listening, education, performance, therapy, neuroscience, and computational modeling. In addition, it comprises a prelude chapter, in which Irène Deliège and Marc Richelle review central questions that have been raised in the study on creativity, and a postlude chapter, in which Irène Deliège and Jonathan Harvey discuss creativity in composers’ work.

The first part, “Creativity in musicology and philosophy of music,” starts with the chapter by Nicholas Cook entitled “Playing God: Creativity, analysis, and aesthetic inclusion.” He argues that much of the analytical writing of music is pervaded by language about compositional decisions and intentions. He states, “...the aesthetic values that underlie most analytic work...are those that emerge from the attempt to understand music...as an expression of creative mastery.” This again has, according to him, led to an aesthetic viewpoint in relation to everyday life that is too exclusive to be taken seriously. As a solution, he proposes broadening the conception of what the term “theory” might embrace. In his chapter, Björn Merker discusses different forms of musical creativity. He points out that musical activities require different kinds of creative processes, depending on whether they happen in real time or not. Furthermore, he identifies four forms of creative musical activity: composition, interpretation, expression, and improvisation, and presents a model, in which these activities are mapped onto the dimensions of novelty-fidelity and preparation-performance. He also discusses musical constraints on creativity, such as tonality, and points out that these kinds of constraints related to historical and cultural contingencies are necessary for musical appreciation. Marc Reybrouck aims to provide an operational description of creativity based on cybernetics and systems theory. He argues for a definition of musical creativity based on adaptive behavior at three levels of the epistemic control systems (input, central processing, and output). Moreover, he emphasizes the distinction between combinatorial and creative emergence, where the former refers to novelty resulting from new combinations of existing elements, and the latter to de novo creation of new elements.

Creativity is not only associated with generative activities of music, but also with music listening. This is the topic of the second part of the book. Irène Deliège discusses the role of analogy in creative musical listening. She elucidates how analogy works in her cue abstraction model (Deliège, 1995), particularly in relation to rhythmic grouping, cue abstraction, segmentation, reduction of musical information, and categorization.
She concludes by pointing out that there are analogies between the strategies we use to perceive visual scenes and musical pieces. Mario Baroni discusses whether creativity comes into play in the process of recognition of musical styles, and how it is manifested. He points out the (somewhat problematic) relationship between knowledge and creativity: knowledge inhibits creativity by producing stereotypic responses, but on the other hand there is no creativity without some kind of knowledge. He also describes an experiment on musical style recognition, using a fragment of a quartet by Gaetano Donizetti, and explains the results using the framework of theories of creativity.

Most of the research on musical creativity pursued to date has focused on education. This is the topic of the third part of the book, “Creativity in educational settings.” Maud Hickey and Scott D. Lipscomb address the question of how creative thinking can be encouraged and assessed in children’s composition teaching. To investigate this, they carried out a study, in which they utilized a subset of Alan Lomax’s (1976) cantometric scales to analyze compositions produced by children during a school music project. They concluded that the cantometrics provide a promising alternative for identifying the characteristics that are shared by creative compositions. Pamela Burnard’s chapter discusses children’s meaning-making as composers. She emphasizes the role of contextuality and sociocultural situatedness in the research on children’s music-making, and points out that the type of creativity the child operates on is qualitatively different from adults. She presents a study, whose research design was “nested within the parameters of an interpretive-constructivist paradigm underpinned by a hermeneutic phenomenological perspective as a descriptive analytical focus” (p. 119). She concludes that “multiple representations of the phenomenal world of children composing are essential to the music research enterprise” (p. 127) and that more care is needed to clarify the connection between individual creativity and the social context in which it is situated. They present a model of the relationship between creativity, originality, and value in Western classical performance, which suggests a positively skewed relationship between perceived value as a function of perceived originality. Their model also suggests that the most controversial performances, i.e., those with the highest variance in perceived value, are those that have a degree of originality slightly higher than that of the highest-valued performances. The topic of Jane Davidson’s and Alice Coulam’s chapter is creativity in performance behavior. They present an exploratory study in which jazz and classical singers were asked to perform “Summertime” by George Gershwin. Video analysis on gaze, facial expressions, and bodily gestures supplemented with interviews revealed, among other things, that physical gestures were preferred across styles, and that highly regarded performers used illustrative and adaptive gestures more than less highly regarded ones. They concluded that in a creative performance, musical skill and inventiveness have to be balanced between extrovert stage presence and intimate behaviors. In their chapter, Roger Chaffin and his colleagues discuss spontaneity and creativity in highly practiced performance. They point out the apparent contradiction between creativity and a highly automated performance. However, they believe that spontaneity in such performances is not an illusion, but repeated performances of a musical piece by the same performer differ in ways that are small but musically significant. The authors distinguish three types of performance cues: basic, interpretive, and expressive. According to them, all these levels of hierarchy are taken into account while practicing, but expressive cues become dominant in the final stages of practice. They also report a case study, the aim of which was to test these intuitions.

Music therapy has a great potential in conveying creativity and expressivity to various clinical populations. The fifth part of the book discusses the role of creativity in music therapy. Improvisation is a widely used method for promoting expressiveness and communication for music therapy clients. This is the topic of first two chapters of this part. Tony Wigram discusses creativity in music making by children with developmental disorders such as autistic spectrum disorder (ASD) and Asperger’s syndrome. He discusses the potential of creative improvisation as a clinical tool.
with such children. In a case study with an ASD client, he shows how the technique of frameworking can be used to elicit creativity. The chapter by Colin Lee discusses clinical improvisation from an aesthetic point of view. He emphasizes the importance of understanding musical creativity as a nonverbal means of communication. According to him, clinical practice can be “informed” by musical structure and therefore it is important to understand the musical form of music therapy improvisations. He also emphasizes the similarity between improvisation and compositions as well as the importance of understanding seminal composers’ composition processes. Finally, he proposes a nine-stage method for the analysis of music therapy improvisations. In the last chapter of this part, Julie P. Sutton explores the role of silence in music therapy. She points out the scarcity of research on this topic and argues that silence is an important factor in both verbal and musical communication. This is supported by an example from a music therapy session with an autistic boy, which leads the author to conclude, “silences are hidden music to which we must listen most carefully” (p. 268).

The sixth part of the book deals with neuroscientific approaches to musical creativity. The first chapter of this part, written by Martin Lotze and his colleagues, discusses cerebral differences between professional and amateur musicians. They present results from fMRI recordings during actual and imagined performances. In both conditions they observe a higher economy in brain activation in professionals than amateurs, and they argue that this functional and anatomical difference may be a neuronal correlate of the quality of performance. In the next chapter, Elvira Brattico and Mari Tervaniemi provide an excellent overview of neurophysiological approaches that might help clarify the biological bases of musical creativity. In fact, it would have been logical to have this chapter as the first one of part six, as it provides much of the necessary background needed to follow the other chapters. The authors cover a wide range of issues such as melody perception, hemispheric specialization, music performance, composition, and expertise. In particular, they focus on studies that have searched for evidence of music talent by comparing musicians with nonmusicians. Based on these studies, they propose a number of suggestions for further studies that might elucidate the neural bases of musical creativity. In the last chapter of this part, Marta Olivetti Belardinelli discusses the degree of globality of the neural basis of musical creativity. She proposes three alternative theories: global, local, and intermediate. Based on a variety of brain imaging studies on multimodality of central representation, genre recognition, and tonality perception, she concludes that only the local theory seems to be uncorroborated.

The last part of the book considers computational models of musical creativity. The first two chapters of this part are by François Pachet. In the first one, “Creativity studies and musical interaction,” he somewhat provocatively questions the importance of attempts to formalize creativity. He states that as a consequence of these formalizations, creativity has been “trivialized.” Furthermore, according to him the question of where creativity lies is “probably unanswerable.” In the rest of the chapter, he reviews studies on creativity assessment (focusing on Csikszentmihalyi’s concept of flow), and provides an overview of computer music programs (including programs for music generation, style modeling and musical interaction. The role of this chapter was not quite clear to me, except that it serves as an introduction to the next chapter, in which Pachet presents the concept of interactive reflexive musical system and one instance of such, the impressive Continuator system. The Continuator is a computer music system that can learn in real time stylistic properties of a human’s playing and produce a musical conversation with the human. He reports that the use of the Continuator has often resulted in flow experiences. The last chapter of the book, “Putting some (artificial) life into models of musical creativity” by Peter M. Todd and Eduardo R. Miranda, provides an excellently written overview of attempts to use various biologically inspired methods, or artificial life, for the modeling of musical creativity and interaction. The chapter discusses three different approaches: sonification of behavior, evolutionary simulation that ignores social interaction, and evolutionary simulation that allows for social interaction. They conclude that the last approach in particular has the potential of increasing our understanding about the nature of musical creativity.

Given the difficulty of the concept of musical creativity (which is acknowledged by many if not most authors of the book), I think the book fulfilled my expectations. It contains articles by some of the leading scholars of this field, representing a wide range of approaches and methodologies. On the negative side, I think the book has a certain lack of coherence, common to many compilations of individual articles. Due to the multidisciplinary nature of the research area and differences in the writers’ approaches as well as style and depth of presentation, the individual articles fail to form an integrated whole. Perhaps adding a summary article and cross-referencing could have alleviated this shortcoming.
In spite of these shortcomings, this book provides in my opinion an important contribution to this largely unexplored area. Given the high quality of many contributions, the book definitely serves as a good source of new ideas for graduates and researchers with interest in musical creativity.

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References
