In Chapter 3 Berkowitz focuses in detail on the abovementioned basic pedagogical strategies, interestingly drawing on concepts and research from cognitive psychology. He discusses the process of automatization as the outcome of repeated rehearsal in terms of work in neurolinguistics by Michael Paradis, and in cognitive psychology, using John Anderson’s adaptive control of thought (ACT) model of learning, respectively. Berkowitz then turns to the variation strategy, this analyzed from the perspective of the
The article by Berkowitz acknowledges the literature on embodiment (including influential work on the human mirror neuron system that he himself conducted). Interestingly, in his article on motor sequences (Berkowitz & Ansari, 2008) he references to classical books, Berkowitz limits his discussion of current empirical research to two studies the interviews that the author conducted himself), the book's title may be misleading. Among numerous performance? Thus, although his ambition to use a range of different methodologies is admirable (including comprimed?); (2) How do we acquire and internalize this knowledge?; (3) How is this knowledge used in focus is on the following questions: (1) What is this knowledge (of what elements and processes is it comprised?); (2) How do we acquire and internalize this knowledge?; (3) How is this knowledge used in performance? Thus, although his ambition to use a range of different methodologies is admirable (including the interviews that the author conducted himself), the book's title may be misleading. Among numerous references to classical books, Berkowitz limits his discussion of current empirical research to two studies that he himself conducted. Interestingly, in his article on motor sequences (Berkowitz & Ansari, 2008) he acknowledges the literature on embodiment (including influential work on the human mirror neuron system.

Chapter 4, Berkowitz approaches learning to improvise in the Classical style from the perspective of the learner. The author draws heavily on interviews he conducted with piano soloists who have learned to improvise in this style, including Robert Levin and Malcolm Bilson. Chapter 5, compares music and language cognition from the perspective of acquisition. Berkowitz focuses on the findings discussed in the previous chapters of the book, and extends them by reference to research and theoretical works on language learning. He aims to understand what is a knowledge base and how it is acquired. The author does this by making a comparison of the learning processes in language and music while describing the elements of their respective knowledge bases. Going further, he defines some of the terminology used in the study of language and language acquisition, while looking for analogues to such concepts in music (including phonology, morphology, syntax, semantics, and pragmatics). This chapter also contains a discussion of theories of how these knowledge bases are acquired in language and music. Among these are Chomskian nativist approaches to language acquisition and various empirical approaches (constructivism and cognitive-functional usage-based linguistics).

Chapter 6 opens Part II of the book. Berkowitz explores the musical knowledge base described in previous chapters and the way in which it can be used in performance, returning to interviews conducted with Levin and Bilson. The author returns to the concepts of implicit/procedural and explicit/declarative memory in relation to studies of amnesic patients. In Chapter 7 Berkowitz focuses on the neural correlates of phenomena described in previous chapters. Interestingly, he starts by discussing his own study (Berkowitz & Ansari, 2008) on the neural substrates of jazz improvisation. This chapter also consists of discussion of a complementary study by Limb & Braun (2008). The subjects of the first study were classical pianists who were asked to perform, in controlled conditions, four different tasks designed to provide variable degrees of improvisatory freedom. On the other hand, the later study: “...sought to examine improvisation in a close to its real-world form as possible, providing a more panoramic view of the full panoply of neural activity involved in improvising” (p. 143). Berkowitz concludes:

> Since our study did not demonstrate activation changes in many of the frontal, temporal, or limbic regions that were shown to be active in the study of Limb and Braun, it is possible that these regions come into play only when true musical intent is present, from moment to moment and/or in the attempt to create a musical narrative over a longer time-span using one’s stock of musical materials, as was the case in their experiment. (ibid.)

Chapter 8 pursues the connection between improvisation and spontaneous speech, while comparing music and language cognition from the perspective of production. Berkowitz analyses the findings of Chapters 6 and 7 in the context of theoretical and neuroscientific studies of spontaneous speech. He aims to answer the question of how the knowledge base is used in musical performance. The last chapter of the book takes the Mozart-style cadenza as a case study. Berkowitz examines it from the perspectives of pedagogical treatises on cadenzas and interviews with Robert Levin on cadenza improvisation.

To summarize, Berkowitz is interested in the knowledge base necessary for improvisation. Although the title of the book suggests the broader understanding of (music) cognition, Berkowitz’s main focus is on the following questions: (1) What is this knowledge (of what elements and processes is it comprised?); (2) How do we acquire and internalize this knowledge?; (3) How is this knowledge used in performance? Thus, although his ambition to use a range of different methodologies is admirable (including the interviews that the author conducted himself), the book’s title may be misleading. Among numerous references to classical books, Berkowitz limits his discussion of current empirical research to two studies that he himself conducted. Interestingly, in his article on motor sequences (Berkowitz & Ansari, 2008) he acknowledges the literature on embodiment (including influential work on the human mirror neuron system.
(Molnar-Szakacs & Overy, 2006)), but it is unclear why he chooses to refer solely to brain-centered manipulations in his book.

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References


