

Patrik N. Juslin and John A. Sloboda (Eds.), *Music and Emotion: Theory and Research*. Oxford, U.K.: Oxford University Press, 2001. 487 pp., ISBN 0-19-263189-6 (hardcover); 0-19-263188-8 (paperback)

Along with mind and behavior, emotion is one of the key concepts in experimental psychology. Because the primary emotions—anger, fear, happiness, sadness—guide and energize behavior in crucial life situations, those with enormous biological consequences, they have been subjected to considerable selective and adaptive evolutionary pressures. Emotions are psychologically, physiologically, and metabolically “expensive” and thus reserved for emergencies; when they do occur, they are major events in human phenomenology. The key attributes of the basic emotions are that numerous bodily systems are involved, simultaneously and in tandem; that they are acute, occurring in “episodes,” with feedback loops; highly pronounced; readily identifiable and reportable by the experiencer; that they flood consciousness and are pan-cultural in terms of experience and expression; and that they have an unambiguous cause/object. They are to be distinguished from moods (such as anxiety or elation), drives (hunger, sex), traits or dispositions (such as introversion and generosity), and attitudes (hostility, tolerance, etc.).

What then can music, an activity whose very adaptive value has been challenged by reasonable people (cf. Huron, 2001; Pinker, 1997), possibly have to do with emotion? “Everything,” folk opinion teaches, in all cultures. “Lots,” say both standard musicology and conservatory teachers worldwide who generally emphasize technique *and* “expression.” “Three main things,” music psychologists might state: (a) Emotions can differentially influence the music to which one chooses to listen; (b) music can express emotion; and (c) music can induce emotion in the listener. Viewed as a whole, *Music and Emotion* hardly mentions the considerable literature on (a), fails to examine critically the scientific status of “express” in (b), and seems insufficiently or inconsistently skeptical about the claims in (c) that genuine emotions can be induced by music.

One must, of course, be careful not to rule out the possibility of a phenomenon or relationship by definitional fiat. Scholars clearly disagree over basic issues regarding music and emotion, so the opportunity to read a range of opinions on the subject makes the publication of this book a welcome event. Nevertheless, emotion has been studied for over a hundred years in the fields of experimental psychology, physiology, and psychosomatic medicine. The criteria listed in the first paragraph of this review are a distillation of that century of rigorous thinking and research, and the clear implication is that instrumental music cannot directly induce genuine emotions in listeners. When such emotions are induced, they result only indirectly, by means of associations, which could also be created by many

nonmusical means. Various components of music can measurably affect physiological processes, but elevated physiological activity—while necessary—is generally not sufficient for an emotional state to be experienced, even if there is intra-individual patterning for discrete emotions (cf. Cacioppo, Berntson, Larsen, Poehlmann, & Ito, 2000; Konečni, 1991). These statements are rather close to those espoused by Scherer and Zentner (in Chap. 16), and it is not accidental that they are among the few *bona fide* emotion-theory specialists represented in the volume. None of the empirical evidence presented in the volume seriously challenges the above account, although many unsubstantiated statements do.

The volume has 20 chapters, organized into six sections, of which the first, “Introduction” and the last “Postlude,” have a single chapter each, written by the editors. The second section, “Multidisciplinary Perspectives,” consists of seven chapters; this section is followed by “The Composer” (three chapters), “The Performer” (three), and “The Listener” (five). The editors are involved—together, singly, or jointly with others—in a quarter of the chapters. Thirteen of the 21 contributors are from Europe (seven from the United Kingdom) and five from the U.S. and Canada.

The editors begin with the obligatory appeal to the need for and timeliness of this kind of volume. The perceived need is justified by a selective reading of the available literature which, in this reviewer’s opinion, understates the skepticism many researchers have regarding music and real emotions. A volume with this title can be of interest in a variety of fields, and that variety is reflected in the first, “multidisciplinary” section. There is, however, a predictably high price to be paid for the diversity of domains and views at this point in the field’s development. The result can be decreased coherence and a further increase in the terminological and definitional confusion. Even the three smaller sections that follow—composer—performer-listener—seem to suffer from thinking of the issue as $M \rightarrow E$ (music leads to emotion) rather than, more comprehensively and accurately, in $M \leftrightarrow E$ terms, the latter implying an $E_1 \rightarrow M_1 \rightarrow E_2 \rightarrow M_2 \dots$ sequence and thus indicating how music and emotion may be *bi-directionally* causally related to each other (in conjunction with other relevant social stimuli and physical and cognitive tasks) in “aesthetic mini-episodes” and thus imbedded in the stream of daily life (Konečni, 1982, 1994).

The meandering character of the book seems in part due to the editors’ ambivalence about certain key issues. For example, in Chapter 1, Juslin and Sloboda say, with apparent approval, that “a number of authors have expressed doubts that current theories of emotion are adequate for dealing with music” (p. 5). This stands the problem on its head. Scientific theories of emotion (as opposed to folk ideas about emotion) should not be held responsible for not dealing with non-emotions, quasi-emotions, and moods produced by music. As the first among the “fundamental questions ad-

dressed by [the] book,” they list: “Why does music induce emotion in listeners? Are the emotions we experience in relation to music different from the emotions we experience in everyday life?” (pp. 6–7). The strong expectations raised by these questions are not fulfilled by the data in (and out of) this book. Very few experiments indeed can even pretend to have asked these questions appropriately, and even the most carefully designed among them (Krumhansl, 1997; Nyklicek, Thayer, & Van Doornen, 1997; Sloboda, 1991; Waterman, 1996) are replete with methodological ambiguities and contradictory patterns of data (which others may have overinterpreted and cited uncritically).

The first chapter in the multidisciplinary section, by Stephen Davies, (“Philosophical Perspectives on Music’s Expressiveness”), contains, as do most of the others, an elementary introduction; it then proceeds with an analysis of pseudo-conundrums such as “how music [can] be expressive of emotion... when it is non-sentient” (p. 25). Such material is of limited value to music psychologists and empirical aestheticians, in part because there is no true dialogue with philosophers. Whereas Krumhansl (1997), for example, a prominent music psychologist, dutifully cites Peter Kivy’s “cognitivist”/“emotivist”—rather simplistic—dichotomy, Kivy, a prominent philosopher of music (cited in Davies’s and some five other chapters), has not once cited, in some four or five of his books from the 1980s and 1990s that I have examined, as just one example, D. E. Berlyne’s seminal and sophisticated 1971 book *Aesthetics and Psychobiology*.

The chapters that follow in this section address the musicological (Nicholas Cook and Nicola Dibben), psychological (Sloboda and Juslin), neuropsychological (Isabelle Peretz), anthropological (Judith Becker), sociological (Tia DeNora), and music-therapy (Leslie Bunt and Mercédès Pavlicevic) perspectives on the M-E relationship. What one finds, for the most part, are not complementary views of the same phenomenon, but divergent views on substantively different phenomena. This is especially true of the last three chapters. I found the Sloboda-Juslin chapter disappointing because of the authors’ casual introduction of unproven concepts (“musical” and “aesthetic” emotions, for example) and an approach to the music-emotion literature that seems idiosyncratically selective. Conceptual ambiguity and unproven assumptions also characterize Peretz’s chapter. Since there is a very limited amount of solid relevant data, a careful reader might be disturbed by the minimally justified conclusions, such as “the current evidence is pointing to the existence of a specific neural arrangement for certain musical emotions, such as happiness and sadness” (p. 127). Both of these chapters would profit from a close reading of Aristotle’s analysis of causality, specifically his definition of the four *aitia* (“because;” Aristotle, transl. 1929; Killeen, 2001). To this reviewer, the chapter by Cook and Dibben stands out in this section by its clarity of thought and informative-

ness about the core issues, with only an occasional lapse in definitional consistency.

The first chapter in the section on “The Composer” (“Emotion and Composition in Classical Music: Historiometric Perspectives”) is by Dean Keith Simonton, a researcher who is justly highly regarded for the careful use of this methodology in studying psycho-aesthetic problems. Here he presents interesting data on the relationship between melodic originality (computed from two-note transitional probabilities) and various measures of aesthetic appeal. In addition, “biographic stress” is computed for 10 composers and related to melodic originality. The latter relationship (positive) may offer solace to people who insist that the artist’s suffering is necessary for creativity, but it must be kept in mind that these are correlations among conceptually distal variables, mediated by many others that Simonton could not have, try as he may, statistically controlled. The chapter is cogent, in part *because* the author essentially dissociates himself from the title and its promise. Indeed, unless one regards emotion as an enduring disposition (which would ignore the temporal reality of the physiological response), how could a composer maintain the same emotion over the many months required to produce a major work?

“The Influence of Musical Structure on Emotional Expression,” by Alf Gabrielsson and Erik Lindström, follows. Like P. I. Chaikovsky (quoted) and like this reviewer, the authors doubt that “composers express their present feelings in their compositions” and think it more plausible that they “use various structural factors ...to achieve certain intended expressions” (p. 223). The key issue is one of *representation*, of music telling a story, of its *depiction* of emotion-driven behavior to listeners who have seen and experienced similar major life events as has the composer. The authors are sophisticated thinkers about music; one gets the impression that they say “expression of emotion” only to satisfy an unfortunate convention. Be that as it may, the chapter is useful in that it provides a survey of the studies that have examined the relationship between structural factors in music (close to 20 are identified) and “emotional expression.” The classificatory scheme benefits from K. Hevner’s classic studies from the 1930s being used as a point of departure and reference. A serious shortcoming is that the authors do not address the question of how the purely musical structural factors may be related to the statistical and psychological ones, such as the objective and subjective complexity, novelty, surprisingness, and incongruity, nor of how these are related to verbal and physiological measures. A massive amount of relevant work by Berlyne and his students (notably G. Cupchik and J. B. Crozier) is thus ignored.

This heterogeneous but informative section concludes with “Music as a Source of Emotion in Film” by Annabel J. Cohen, which is a very welcome review of studies in this much-neglected area (although Cohen’s references

ought to be updated with regard, especially, to the German work). The chapter is at its best when it analyzes the many functions of music in film. Cohen also provides a complex, but plausible, “congruence-associationist framework” for understanding the multiple aspects of film-music communication. It is at its weakest when Cohen over-reaches and claims that the M-E link is *better* studied in the context of film-music than with music alone, allegedly because music in film can be attached to an “object” of an emotion. This ignores both the many other attributes of real-life emotional states and the simple observation that the experiencer of film-induced “emotions” — pale as-if copies of the real thing — can snap out of these states at will.

Among the three chapters in the section on “The Performer,” the middle one on the “Negative Emotions in Music Making: The Problem of Performance Anxiety,” by Andrew Steptoe, is the most informative. The fact that it obviously does not deal with the “emotions” induced by *music*, is more than offset by the authenticity of the emotion in question and the enormous role it plays in the life of many music performers. For them, “anxiety” is a vast understatement and “raw fear” more to the point: Fear of dismal failure, of humiliation, of the destruction of one’s career that is as real as is fear of physical threat. Steptoe masterfully reviews the various social-psychological, psychophysiological, and pharmacotherapeutic issues and some ingenious research, although it is puzzling why in his discussion of the relationship between “tension” and performance quality, Steptoe does not to refer to Zajonc’s (1965) highly relevant “social facilitation” theory. The section on cognitive factors (pp. 298–299) is important because it states, at the outset, that “[T]he musician playing in public tends to be occupied with task-orientated thoughts...the cognitive apparatus is taken up with thoughts related to effective performance.” Musicians in performance are fiercely focused and have no time for “emoting” in the manner attributed to them by a number of the contributors.

The section begins with Roland S. Persson’s “The Subjective World of the Performer,” and ends with Juslin’s “Communicating Emotion in Music Performance.” Persson’s chapter relies mostly on his 1993 dissertation research that has already been reported in a number of articles. Readers who have not seen these earlier papers may enjoy learning about what 15 Huddersfield University (U. K.) performers say and do upon being assigned a largely inauthentic musical task, but the information is impressionistic and the term “emotion” is used colloquially and metaphorically, rather than technically. The performers were given the score of a short Glière piece, unknown to them and with all the interpretive clues removed, and had two weeks to prepare before they performed it and discussed it with the author. They “were specifically asked to deal with the music in a way that felt appropriate to them, rather than consider traditional conventions

for any...musical style" (p. 279). This procedure minimizes the difference between the composer and performer, reduces the importance of performance discipline, and removes much of the "evaluation apprehension." The ecological validity of this type of study is thus quite limited. Juslin's chapter similarly contains a disproportionately small amount of previously unpublished information for its length. The kind of terminological confusion that permeates much of the volume is reflected in his chapter's very title. Communicating, by musical means, some surface attributes of emotional states or telling musical anecdotes about emotions (e.g., by musical allusion to their physical manifestations), are very different things from "communicating emotion"—that is, from a genuinely happy, angry, or sad person conveying his feelings to others—yet Juslin uses these concepts interchangeably in all the chapters in which he is involved. The casual concept-substitution is clear when one examines the procedures actually used in a representative Juslin experiment (2000, and frequently mentioned in the chapter) and compares them to the wording in the title and the Abstract. Incidentally, there is little theory-testing in this type of research. The basic question is whether the listeners (most of them musically trained) can guess, via the scales of happy, sad, angry, and fearful, which "emotional expression" was intended in various versions of three popular tunes; the versions had been recorded by three guitarists following instructions to make them sound happy, sad, angry, and fearful ("[T]hese emotions were selected because they are among the most commonly proposed *basic emotions* in the literature," Juslin, 2000, p. 1800, italics in the original). Five acoustic cues were measured in each recorded version by the experimenter and multiple regressions applied to the respective relationships between the performers' intentions and the cues and the listeners' judgments and the cues; the two sets were then compared. Since at least the 1995 ESCOM/DGM conference in Bremen, Juslin has repeatedly invoked Brunswik's lens model as the appropriate theoretical framework for "emotional communication in musical performance" in this type of experiment (e.g., Juslin, 2000, p. 1799; p. 324 in the present chapter), but a convenient graphic representation is not a theory, nor is the comparison of two sets of multiple regressions a methodological breakthrough. Another idea of Brunswik's, that of *representative experimental designs*, might be more useful in the M-E field.

The section on "The Listener" begins with Leonard B. Meyer's "Music and Emotion: Distinctions and Uncertainties." In Chapter 3, Cook and Dibben quote Kivy as saying that Meyer's 1956 book *Emotion and Meaning in Music* "taught many of us for the first time that you can talk about music without talking nonsense" (p. 57). Here, Meyer is playful and erudite, but not as hard-nosed about definitional issues as one might have wished. It is as if he, too, has been swept up by the volume's M-E euphoria. The extension of his seminal theory of the role of uncertainty in music is

rather modest, but there are many astute observations. One of these is that whereas “musics (from Bach to rock)...were motorically accessible” (p. 353), this is not the case with much of the present avant-garde. It is unfortunate that Meyer does not pursue this theme to its logical conclusion, to the relationships among music, dance, and sex—an analysis of which this volume sorely lacks [cf. Miller’s (2000) suggestion that the adaptive value of music lies in its role in sexual selection]. Since the volume also lacks a formal statement on representation and meaning, it is a pity that Meyer did not refresh the readers’ (including Kivy’s) memory of the important distinctions he drew in 1956 between “absolutism” and “referentialism” and between “formalism” and “expressionism,” with music authorities such as Hanslick and Stravinsky given as examples of some of these terms.

The next chapter is by Klaus R. Scherer and Marcel R. Zentner; its awkward title (“Emotional Effects of Music: Production Rules”) does not do justice to the breadth and depth of this excellent, thoughtful treatment, nor could a few more lines of this review do so. It is interesting that whereas the editors state that Scherer and Zentner “include very stringent criteria for distinguishing different kinds of affective response” (Ch. 1, p. 16), in this reviewer’s opinion such criteria are merely reasonable and are in fact a minimal standard that the researchers in the M-E field need to adopt for the field to advance. The volume as a whole would have profited from this chapter being given a more central role, including some of its definitional sections being circulated to other contributors beforehand.

The next chapter is of far narrower scope. In “Continuous Measurement of Self-report Emotional Response to Music,” Emery Schubert provides the technical details associated with this type of measurement. It is unclear why the editors singled out this method for inclusion and not any number of others, such as, say, facial electromyography or the various measures of the cardiorespiratory response. Besides, even in this seemingly simple domain there are complications. For example, in Krumhansl’s study (1997), the subjects listened for about 3 minutes to a musical excerpt and were “instructed to continuously adjust the position of the slider on the display to indicate the amount of sadness they experienced” (p. 340). What is presumably continuous here is the *self-monitoring*; to the extent that there is no perceived change in “sadness,” the slider might be moved once or not at all in 3 minutes (putting aside the operation of “experimenter demand”), thus making the measurement continuous (or continual, as Schubert insists) only in terms of the *absence* of overt responses. My delving into this is actually to demonstrate how easily one can be tempted by technical trivia away from the big question: Is it really reasonable for Krumhansl (and, implicitly, Schubert) to expect to be inducing an emotion as major as *sadness* by means of a 3-minute excerpt of Albinoni, with this profound state responding so readily to the tiny details of the music that there needs to be second-by-second sampling of the slider movement?

At the very beginning of their chapter “Emotions in Everyday Listening to Music,” John Sloboda and Susan O’Neill state categorically that “music is always heard in a social context” (p. 415) and it is therefore odd that they do not cite *The Social Psychology of Music* (edited by Hargreaves and North, 1997), and specifically the work by these authors and others in Chapter 5 of that book (“Experimental Aesthetics and Everyday Music Listening” by North and Hargreaves). Sloboda and O’Neill continue: “[T]he impact of music on emotion is not direct but interdependent on the situations in which it is heard” (p. 415), which comes as a surprise in the light of Sloboda’s statements elsewhere in the volume, as well as in his earlier (e.g., Sloboda, 1991) and latest (e.g., Sloboda & Lehmann, 2001) papers. Much of the chapter consists of a leisurely report of a study that tracked eight people for a week (using pagers) by the modified Csikszentmihalyi-Lefevre experience sampling method. In this type of study, the sampling of subjects is all-important and *N* must be far greater, so the project was presumably meant as a methodological demonstration. For what that is worth, 44% of all “episodes” involved music, but in only 2% of the total was listening the principal activity. Can background music and Muzak really be expected to induce emotion? Of course not: “Becoming more positive [and] more alert” (p. 418) is what the subjects tended to report.

In the final chapter in “The Listener” section, Alf Gabrielsson reports on his well-known, descriptive, “Strong Experiences with Music” (SEM) project, in which some 400 interviews and written reports have been obtained from some 300 people since 1989. Such work by Gabrielsson and others on “peak experiences” (not limited to music), can perhaps begin to reveal the complex constellation of life-events, and social, cognitive, and emotional circumstances under which music can *touch*, *move*, and induce *awe* in at least some people. Scherer and Zentner mention the concept of “being moved” (there is a substantive in German, *Rührung*) almost as an afterthought (p. 384). In this reviewer’s opinion, it is this subjective and reliably reportable experience of being moved—often, but not always, accompanied by thrills or goose bumps (an obviously physiological, but not in itself *emotional*, response to music that has been reported in various studies since Goldstein, 1980)—that constitutes a genuine and important form of human response to music (though not uniquely to music). It is perhaps the ultimate humanistic moment, and it may well include an elitist element: of feeling privileged to regard Mozart as a brother, of sensing the larger truth hidden in the pinnacles of human achievement, and yet realizing, with some resignation, their miniscule role in the universe.

Such experiences nevertheless differ from the primary emotions in several respects, two of which are that it is difficult, if not impossible to reinstate them mentally, and that they do not have a goal to reach or obstacle to overcome. However, to return to the definitional issues mentioned at the outset, a careful study of “lofty sentiments” may be the best strategy for

solving the conundrum presented by the title of this book. The technical term “emotion” should perhaps be reserved exclusively for responses to events of biological importance. (But then, who is to say that gazing *in wonder* at a starry night-sky does not have evolutionary significance? Even without invoking Pythagoras and the consonance of sounds among the heavenly spheres.)

In conclusion, this is an uneven volume that sometimes lacks definitional and conceptual coherence, but it raises important issues. There are editorial problems of commission and omission. Nevertheless there are some splendid chapters that present important new information and exciting new ideas. They help make this a valuable book.¹

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Richard Colwell and Carol Richardson (Eds.), *The New Handbook of Research on Music Teaching and Learning*. New York: Oxford University Press, 2002. ISBN 0-19-513884-8, \$175.

Music professionals, both in and out of academe, have been slow to pick up on the burgeoning research and discussions of music perception from over the past two decades. Many within that population continue to doubt that such matters need concern them: “Psychology is one thing, music quite another!” Let us welcome any dents in that facade of indifference. Some essays of this second guidebook for music research may help.¹

A massive 1248 pages, its 61 essays are the produce of two principal editors, more than 13 “parts” editors, over 93 writers, and 234 “reviewers and advisory reviewers.” Ten parts flesh out the whole: I, Policy and Philosophy; II, Educational Context and the Curriculum; III, Music Development and Learning; IV, Musical Cognition and Development; V, Social and Cultural Contexts; VI, Music Teacher Education; VII, Music Education Connections; VIII, Neuroscience, Medicine, and Music; IX, Outcomes in General Education; and X, Research Design, Criticism, and Assessment in Music Education.

The book’s size (8 lb. 2 oz.) ensures that it will not be carted around in graduate students’ backpacks. Its optimistic coverage suggests Diderot-*redux*—but doing the band of *Encyclopædists* one better by filling but one volume. The will and the perspective are admirable; they may—or may not—be realistic. My own preference would be for more but smaller packages. If I seek guidance in neuroscience research, I prefer not having to grope with some 1184 pages that don’t provide it.

The book’s anticipated readership is succinctly delineated in Editor Andreas Lehmann’s introductory essay to Part IV: the chapters within, he tells us, “should now match the needs of aspiring or in-service music educators and music education researchers.” My review is framed within the understanding that the book’s interest for readers of *Music Perception* lies almost exclusively in only two of its Parts, IV (Musical Cognition and De-

1. Another such volume, about 3/4 the size of this one, was published in 1992 by Schirmer Books.