



REVIEW: BOOK

How Sonata Forms: A Bottom-Up Approach to Musical Form

Yoel Greenberg

New York: Oxford University Press, 2022

pp. xi + 264, ISBN 978 0 197 52628 6

Jan Miyake

Department of Music Theory, Oberlin College and Conservatory of Music, Oberlin, OH, USA

jan.miyake@oberlin.edu

In his book *How Sonata Forms: A Bottom-Up Approach to Musical Form* Yoel Greenberg makes a substantial contribution to our understanding of the evolution of sonata form. His analysis of the binary and concerto forms of mid-eighteenth-century composers sheds light on the emergence of a musical structure that has intrigued musicologists and listeners for centuries. Greenberg grounds his research in the writings of past and present sonata-form thinkers, engaging with a ‘who’s who’ list of musicians and scholars from Scheibe to recent twenty-first-century writers. He complements this grounding in the field with an interdisciplinary approach, drawing on concepts from diverse areas such as linguistics, evolutionary biology, sociology, statistics and philosophy. This approach provides the framework for a bottom-up investigation into the development of sonata form. Greenberg supports his arguments with evidence from historical treatises, data on thematic quotations in a corpus of almost one thousand works and statistical analysis. Acutely musical and skilfully written, Greenberg’s book presents analyses and arguments with clarity and accessibility. His prose is not only insightful but also infused with humour and grace, making it a compelling read for both scholars and enthusiasts alike.

Greenberg leans heavily on the distinction between synchrony and diachrony throughout this work. Synchrony represents a snapshot of a specific moment or period of time, allowing us to ask the question ‘what is sonata form?’. On the other hand, diachrony resembles a timeline and corresponds to the question ‘when and how did sonata form come into existence?’ (13). However, attempts to address these questions reveal counterexamples to neat narratives or categorizations, termed ‘fuzziness’ by Greenberg. When addressing the synchronic question, numerous sonata forms fit the definition perfectly, while many others fit it awkwardly. Similarly, answering the diachronic question complicates explaining the existence of sonata-form movements that occurred ‘too early’ in the timeline. None the less, Greenberg successfully makes valuable insights into the nature and evolution of sonata form.

Greenberg’s arguments frequently invoke the distinction between bottom-up and top-down approaches. A bottom-up approach focuses on individual features, such as genotypes or musical elements, and explores how they combine to form more complex systems, like phenotypes or musical forms. It is reductionist. A top-down approach starts with a complete whole and then deconstructs it into smaller segments. It is holistic. In music, top-down approaches dominate, often addressing the diachronic question through the lens of ‘great men’ who altered the paradigm or forged new paths for a particular form. Bottom-up approaches in musicology are relatively uncommon, even rare. They offer a new perspective that top-down approaches cannot. In the case of sonata form, a bottom-up approach allows us to understand it as ‘a problem, a collection of disparate common practices inherited from other works and expected by listeners, which must

be reined into order by the composer in every piece anew' (117). This book makes the case for a bottom-up approach by successfully applying it to the question 'how did sonatas form?'

How Sonata Forms is organized into eight chapters, with an introduction and two appendices, followed by endnotes, bibliography and indices. The book features a generous number of musical examples and figures that not only are easy to read, but also enhance the overall argument. Each chapter is pithily titled and opens with a relevant quotation from well-known works from the Western canon, further adding to its appeal and accessibility.

Chapters 1 and 2 lay the theoretical groundwork for the book. In chapter 1, entitled 'The Fuzziness of Form', Greenberg highlights the advantages of bottom-up approaches and suggests that certain musical forms belong to 'a broad and diverse class of bottom-up systems' (7). He also delves into the problems of synchronic and diachronic fuzziness. He identifies three common strategies employed by previous scholars for dealing with the synchronic problem (what to do with the sonata forms that do not fit their definition) and two approaches for diachronic fuzziness (how to explain early cases of sonata form). Rather than offering a strict definition of sonata form, Greenberg suggests constructing a hypothetical list of sonata elements that are 'generally associated with sonata form, even if they do not appear in each and every work in sonata form' (23). Although he does not provide this list, subsequent chapters focus on three sonata elements: (1) the double return of the original theme and the tonic key, (2) the return of the theme at the medial repeat that divides a binary form into two parts and (3) the end rhyme of the two parts of a binary form. Chapter 2, 'Wholes in the Theory', continues introductory work by examining the 'relationship between these two types of fuzziness and the assumptions that underlie the strategies' (27). Drawing on the linguistic work of Saussure, Greenberg connects diachronic perspectives with reductionist, bottom-up approaches and synchronic views with holistic, top-down approaches. Thus far, theories of sonata form have been overwhelmingly synchronic and holistic, leaving bottom-up approaches relatively unexplored.

The core of this book, chapters 3 to 6, works through the first two steps of John Dewey and Arthur Bentley's three main levels of organization and presentation of knowledge as described in their article 'Transactions as Known and Named' (*Journal of Philosophy* 43/20 (1946), 533–551). Initially, there is a period of 'self-action', when the elements of a bottom-up approach remain independent. Next comes a period of 'inter-action', when the elements occur together so frequently that they begin interact. Finally, 'trans-action' emerges, giving rise to a larger system recognized with a label or title (93–94, 184). Greenberg draws on writings from Scheibe, Koch, Galeazzi and Kollmann, among others, to describe these elements. The corpus for this project includes '732 fast or moderately paced binary instrumental works dated 1650–1769, by 84 composers born and active in Germany, Austria and Italy' (195). The author describes his corpus formation in detail in Appendix 1.

Chapters 3, 'From Selfish Sonatas to Egoistic Elements', and 4, 'A Periodic Table of Elements', introduce Greenberg's three 'egoistic' elements of sonata form and prove their independence from each other. This work draws heavily on the ideas of evolutionary biologist Richard Dawkins, as expressed in his popular book *The Selfish Gene* (Oxford: Oxford University Press, 1976). Dawkins explains why evolutionary theory should be applied at the level of the gene, not the species – or, for our purposes, at the level of the sonata-form element, not the formal section. Greenberg equates these three elements of sonata form (double return, medial repeat and end rhyme) with genes whose success is quantitative. In other words, they must multiply more than the genes they compete against, and 'there is much to gain by considering musical forms as temporary *survival machines* for their much more enduring constituent elements' (52; original italics). It is essential to prove that these elements are independent because the book's argument hinges on showing how they were not a 'package deal' until late in their evolution. For each of the three elements, Greenberg tracks its presence in his corpus of 732 binary forms by looking decade-by-decade at the percentage of works in which they appear. He illustrates this data through figures and

annotated examples of movements by Corelli, Froberger and Sammartini. Using statistical analysis, he evaluates variable independence in two ways. First, Greenberg demonstrates that the observed ratio of movements containing two of the three sonata-form elements closely approximates the anticipated ratio, obtained by multiplying the proportions of individual elements present in works. Secondly, he computes the correlation coefficient, revealing that, aside from a few exceptions, it remains close to zero – indicating minimal interdependence between the elements. The mathematical reasoning is well explained, and for those who prefer to skip over such intricacies, Greenberg offers a ‘pick your own adventure’ approach, directing the reader to a future page.

Chapters 5, ‘On Positive Interaction and the Emergence of the Recapitulation’, and 6, ‘Rival Repeats: On Negative Interaction and Form in Flux’, focus on Dewey and Bentley’s second stage of evolution: the interaction of elements. In the early stages of evolution, elements can interact positively, supporting each other, or negatively, by competing with each other. Greenberg carefully walks the reader through the tricky concept of emergence, where the whole becomes greater than the sum of its parts. Drawing on a traditional Jewish tale about being served only the fish’s head and tail for supper, Greenberg uses an analogy to represent the three elements: the medial repeat and double returns are heads because they initiate sections, while the end rhyme is a tail because it has concluding function. These two chapters demonstrate that (1) head-and-tail combinations lead to positive interaction and possible emergence into a larger phenomenon and (2) head-with-head combinations create an environment where it is difficult for both elements to survive. Greenberg takes each conclusion further. The two pairs of head-and-tail combinations compete with each other, the result of which is that the combination of medial repeat and end rhyme loses out to the combination of double return and end rhyme, thus allowing the recapitulation to emerge. Exploration of the head-and-head combination allows an important analytical payoff: a framework for understanding the early sonata forms of composers like W. F. Bach, C. P. E. Bach and Fortunato Chelleri.

Chapter 7, ‘Converging Forms’, co-written with Omer Maliniak, mirrors the process applied to sonata forms but this time focuses on concertos. This corpus includes ‘240 concerto movements dated 1720–1790, by 114 composers active throughout Europe’ (195). Greenberg and Maliniak prove that a bottom-up approach to form can be transferred to the concerto, helping to explain this form’s evolutionary path from Vivaldi to Mozart. The journey, however, differs from that of the sonata form because its starting-point, ritornello form, already includes thematic rotation. So, instead of looking at the tension between elements within a form, they look at the ‘tension between varying or contradictory functions and behaviours of the same element in different forms’ (152). Interestingly, the medial repeat, which was once the only clear marker of binary structure in sonata form’s narrative, plays a crucial role in the concerto’s evolutionary story. Greenberg and Maliniak reveal that the coalescence of concerto form into a package of sonata-form characteristics occurs only after the disappearance of the ritornello that most closely corresponds to the medial repeat. This chapter proves that structures that adopt sonata-form characteristics do not necessarily indicate the same ‘form genealogy’.

In ‘Beyond Sonata Form’, the final chapter, Greenberg explores the applicability of this approach to other musical forms like the rondo and creative arts like the novel. It provides a comprehensive summary of the work of the previous chapters and lays out several telling timelines that demonstrate the divide between the years typically emphasized by sonata-form scholars and the period when the form was evolving. The chapter concludes by advocating theories that embrace fuzziness, quoting Ansel Adams: ‘There is nothing more disturbing than a sharp image of a fuzzy concept’ (190).

How Sonata Forms offers a wealth of methodologies, vocabularies, examples and interdisciplinary insights for scholars grappling with the limitations of sonata-form theories. Using historical research, corpus-studies technique and musical analysis, this book presents a robust resource that has the potential to change the ways in which we teach and research sonata form. One avenue for deeper exploration, however, concerns the role of repetition in sonata form. Greenberg

speculates that ‘the incidence of excessive repetition within the entire population of binary works is likely to have an effect on the tolerance threshold for repetition within a single work’ (118). A decade-by-decade analysis of repetition of material from the opening theme would provide data to support or refute this hypothesis. The recurrence of a theme in a sonata-form movement can mark the beginning of distinct sections of an exposition or provide material for an imitative segment within the development. What does ‘excessive’ mean, though? How much of the theme returns? Are some composers more interested in this problem of excessive repetition? What do their solutions look like? Is there a decade-by-decade trend of how much repetition is to be found in the population of binary works? These repetition techniques are widespread and form a prominent focus in Ethan Haimo’s book *Haydn’s Symphonic Forms: Essays in Compositional Logic* (Oxford: Clarendon, 1995). Incorporating Greenberg’s methodologies into Haimo’s framework could yield valuable insights into both Haydn’s compositions and the changing incidence of repetition over time.

In pedagogical terms, a segment of a postgraduate-level course could be structured around this book. Initially, students would familiarize themselves with the three sonata-form elements highlighted by Greenberg. They would then trace the evolution of these components decade by decade, exposing them to a corpus of compositions often left unexplored by postgraduate programmes. With an understanding of ideas of positive and negative interaction, students would come to realize that top-down theories pose challenges for a significant body of works that do not fit neatly into their categories. If one approaches these works from a bottom-up perspective, however, a coherent narrative emerges in relation to the development of sonata forms. These future music scholars would enter the field equipped with a more sophisticated understanding and methodology, applicable to a variety of structural types beyond just sonata form.

Jan Miyake is Professor of Music Theory at Oberlin College and Conservatory. Her areas of research include sonata-form theories, inclusive pedagogy and approaches to linear analysis. In November 2023 she began her two-year term as President of the Society for Music Theory.