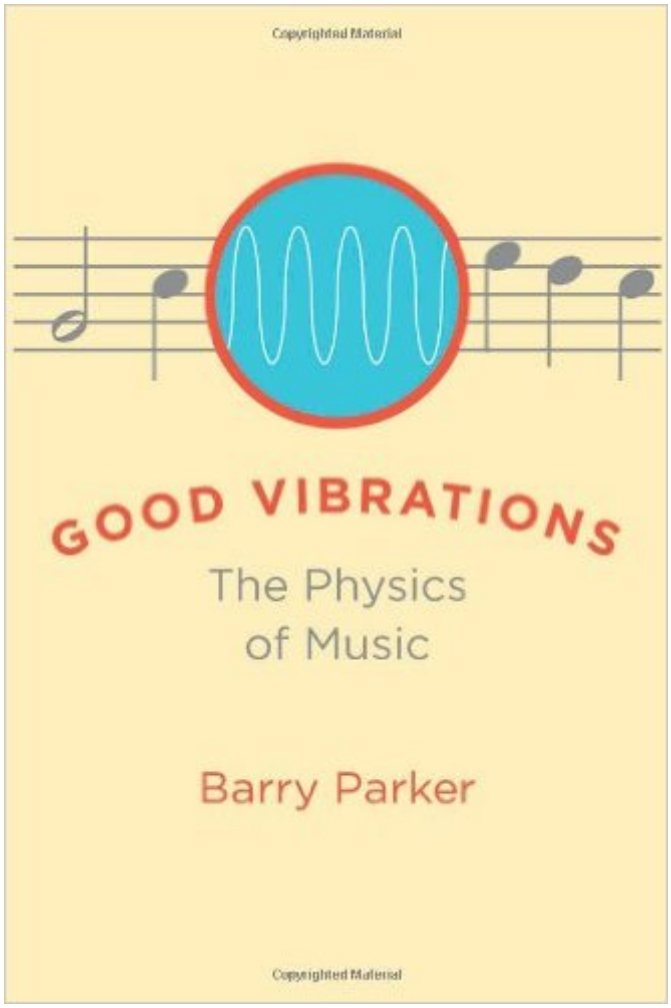
Good Vibrations: The Physics Of Music



Synopsis

Why does a harpsichord sound different from a piano? For that matter, why does middle C on a piano differ from middle C on a tuning fork, a trombone, or a flute? Good Vibrations explains in clear, friendly language the out-of-sight physics responsible not only for these differences but also for the whole range of noises we call music.The physical properties and history of sound are fascinating to study. Barry Parker’s tour of the physics of music details the science of how instruments, the acoustics of rooms, electronics, and humans create and alter the varied sounds we hear. Using physics as a base, Parker discusses the history of music, how sounds are made and perceived, and the various effects of acting on sounds. In the process, he demonstrates what acoustics can teach us about quantum theory and explains the relationship between harmonics and the theory of waves.Peppered throughout with anecdotes and examples illustrating key concepts, this invitingly written book provides a firm grounding in the actual and theoretical physics of music.

Book Information

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Customer Reviews

When I bought this book, I was expecting it to be a basic overview of the physics of sound with particular concentration on music. It turned out to be much more than that. The expected physics was certainly there - the explanations are crystal clear and include several useful diagrams. And very little mathematics is used throughout the book (good news for those who are math-phobic). But in addition to this are chapters on: the human ear (sound perception), musical scales, chords and sequences, the different types of music, the history and mechanisms behind various types of musical instruments, the human voice, electronic music and associated equipment/software, details

on making music recordings, the acoustics of rooms and even a discussion on iPods and MP3 players. For a couple of chapters, some basic knowledge of music theory is clearly assumed; those who can read music and are familiar with the associated theory and terminology have a clear advantage here. In my case, although I've been playing the guitar for many years and have a good ear for music, those sections completely lost me.Throughout the book, the writing style is very clear, friendly and authoritative. Regarding accessibility, it depends on the reader. Musicians, both amateur and professional, who want to know more about the physics of sound and who may want to know about electronic equipment and how to record, should enjoy the book thoroughly. Those, like me, who are not familiar with music theory and have no interest in recording, may find much of some chapters to be either less accessible or rather useless.Overall, there is a wealth of fascinating information contained in this book such that any general reader can learn quite a bit; but, as noted earlier, interested musicians are likely to enjoy it the most.

I flipped through this book in a bookstore before purchasing it from . At first glance, it seemed like a really interesting read, but I ended up really disappointed with it.Overall, I thought the science content was a bit lacking. The book is divided into 4 parts, but only the first part (Sounds and Waves) and half of the second part (The Building Blocks of Music) have any real science. There's a little bit of science in the discussion of instruments, also, but not much. I agree that the author did a good job of avoiding math using some nice diagrams. And I guess the science that was explained was pretty well articulated; I just wanted a bit more of it.Maybe my science-content-expectations were too high since I'm an engineer. But my main gripe was the author's tendency to list random facts. For example, in Chapter 7, the author covers rhythm and types of music. Most of this chapter is crammed with short descriptions of too-many music genres and listing people who are well-known in that genre---literally just listing names of famous musicians. Similarly, in part 3 of the book, the author covers musical instruments, ending each chapter with a page or two of famous musicians. I enjoy biographies and interesting tidbits of information, but as before, the author just crams in names of musicians with little or no compelling history to go with it.In summary, the science was explained well, but there wasn't enough of it. I thought some parts of the book devolved into a listing of random facts that weren't that relevant (or frankly, interesting).

While I did learn a lot from this book, I didn't feel like it was well written. For example, I think the author could have done a better job at explaining harmonics by slowing down the pace of discussion and clearly explaining each step. Another topic that could have used better explanation

is the part where he derives the musical scale using mathematical principles. Without a better explanation, I think the average reader will just coast through those parts without actually understanding them. I also think a lot of "fat" could have been edited out of the book to make for a more enjoyable and less repetitive read. This book would benefit greatly from a strong editing process.On the good side, I did get some knowledge out of the book. I found the part about the various instruments to be enjoyable. Taught me that instruments are constantly evolving over time, and that isn't likely to change. As a person with a physics degree, I also enjoyed learning about the connection between two subjects of interest to me: physics and music. Overall, glad I read it, but could use a little tweaking in a next edition.

Good Vibrations: The Physics of Music explains the physics responsible for differences in musical notes and properties. This combines with a history of sound and a survey of acoustics, electronics, and the human ear using physics as a base for understanding how sounds are made and perceived. An outstanding survey, this is a pick for all collections, particularly music libraries.

To Unified Theories (Frontiers in Physics)