



Tuning, Timbre, Spectrum, Scale

Second Edition

William A. Sethares



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Tuning Timbre Spectrum Scale:

Tuning, Timbre, Spectrum, Scale William A. Sethares, 2013-06-05 *Tuning Timbre Spectrum Scale* focuses on perceptions of consonance and dissonance and how these are dependent on timbre This also relates to musical scale certain timbres sound more consonant in some scales than others Sensory consonance and the ability to measure it have important implications for the design of audio devices and for musical theory and analysis Applications include methods of adapting sounds for arbitrary scales ways to specify scales for nonharmonic sounds and techniques of sound manipulation based on maximizing or minimizing consonance Special consideration is given here to a new method of adaptive tuning that can automatically adjust the tuning of a piece based its timbral character so as to minimize dissonance Audio examples illustrating the ideas presented are provided on an accompanying CD This unique analysis of sound and scale will be of interest to physicists and engineers working in acoustics as well as to musicians and psychologists [Tuning, Timbre, Spectrum, Scale](#) William A. Sethares, 1998 TTSS offers a unique analysis of the relationship between the structure of sound and the structure of scale and will be use to musicians and composers who use inharmonic tones and sounds TTSS also provides a unique approach to working with environmental sounds and there are clear applications for the use of inharmonic sounds in film scoring The book and CD package analyses a wide range of instruments from existing instruments electronic instruments artificial sounds and the sounds and scales on non western instruments including the only such analysis of Indonesian instruments Audio examples and new for this edition computer programs demonstrating the more mathematical aspects of theory of sound allowing increasing the value of the book musicologist and others of a non mathematical background This fascinating exploration of sounds and perception will interest anyone with a deep interest in music

Tuning, Timbre, Spectrum, Scale William A. Sethares, 2014-03-12 *Interpreting the Synthesizer* Nick Wilson, 2020-09-03 This volume examines the synthesizer s significance for music and culture with a range of contributors providing historical musicological practical and theoretical perspectives The synthesizer as an instrument has evolved rapidly over the last 50 years conveying different meanings in musical culture at various times in its history For example post punk and new wave acts used synths to signify their embrace of futurism and modernity Earlier psychedelic bands used the instrument to sonically represent mind expansion while prog acts signposted their lineage to the classical avant garde Techno artists used synths to escape the strictures of acoustic music in parallel with rave culture s desire for escapism from the mundanity of daily existence It is now seemingly ubiquitous in modern pop music production *Rhythm and Transforms* William Arthur Sethares, 2007-08-06 People naturally identify the rhythm of music as they tap their feet and sway in time with the beat Underlying such motions is an act of cognition that is not easily reproduced in a computer program or automated by machine *Rhythm and Transforms* asks and answers the question How can we build a device that can tap its foot along with the music The result is a tool for detecting and measuring the temporal aspects of a musical performance the periodicities

the regularities and irregularities the beat the rhythm The impact of such a rhythm meter on music theory and on the design of sound processing electronics is described It allows discussion of the relationship between cognitive processing of temporal information and mathematical techniques used to describe and understand regularities in data This book will interest engineers and others interested in the design of audio devices such as musical synthesizers special effects devices drum machines and electronic keyboards It will be useful to musicians and composers who exploit computer based tools arrangers musicologists and others interested in musical analysis and those interested in the way the ear works and how this influences the types of sound patterns we like to listen to *Polytempic Polymicrotonal Music* Peter Alexander Thøgersen, 2022-09-08 This book introduces polytempic polymicrotonality as a new musical aesthetic It proposes music with more than one microtonal tuning system and discusses examples from the literature to give an historic framework showing that this tendency has been present throughout human musical history Polytempo is a tool for which polymicrotonal structures can function in relief from its background and it acts as a frame or ground structure that is multidimensional akin to the advancement of perspective in Renaissance art The book has historic significance as it is the only book of its category or genre in music that features polymicrotonality in music composition or production It displays examples of music literature for musical precedence in this area focusing on Charles Ives's *Universe Symphony* unfinished since 1925

The Origins of Language Revisited Nobuo Masataka, 2020-06-11 This book summarizes the latest research on the origins of language with a focus on the process of evolution and differentiation of language It provides an update on the earlier successful book *The Origins of Language* edited by Nobuo Masataka and published in 2008 with new content on emerging topics Drawing on the empirical evidence in each respective chapter the editor presents a coherent account of how language evolved how music differentiated from language and how humans finally became neurodivergent as a species Chapters on nonhuman primate communication reveal that the evolution of language required the neural rewiring of circuits that controlled vocalization Language contributed not only to the differentiation of our conceptual ability but also to the differentiation of psychic functions of concepts emotion and behavior It is noteworthy that a rudimentary form of syntax regularity of call sequences has emerged in nonhuman primates The following chapters explain how music differentiated from language whereas the pre-linguistic system or the prosodic protolanguage in nonhuman primates provided a precursor for both language and music Readers will gain a new understanding of music as a rudimentary form of language that has been discarded in the course of evolution and its role in restoring the primordial synthesis in the human psyche The discussion leads to an inspiring insight into autism and neurodiversity in humans This thought provoking and carefully presented book will appeal to a wide range of readers in linguistics psychology phonology biology anthropology and music

Sound Inventions Bart Hopkin, Sudhu Tewari, 2021-08-04 *Sound Inventions* is a collection of 34 articles taken from *Experimental Musical Instruments* the seminal journal published from 1984 through 1999 In addition to the selected articles the editors have contributed introductory

essays placing the material in cultural and temporal context providing an overview of the field both before and after the time of original publication The Experimental Musical Instruments journal contributed extensively to a number of sub fields including sound sculpture and sound art sound design tuning theory musical instrument acoustics timbre and timbral perception musical instrument construction and materials pedagogy and contemporary performance and composition This book provides a picture of this important early period presenting a wealth of material that is as valuable and relevant today as it was when first published making it essential reading for anyone researching working with or studying sound

Microtones and Microtonalities Christopher Fox,2003 *The Journal of the Acoustical Society of America* Acoustical Society of America,2004 *Computer Music Modeling and Retrieval* ,2005 **Harmonic Analysis and Tone Systems** ,2001 *IEEE ... Workshop on Multimedia Signal Processing* ,2004 **Journal of the American Musical Instrument Society** American Musical Instrument Society,1999 *Beyond the Spectrum of Music* Diego Banuelos,2005 *Journal of the Audio Engineering Society* Audio Engineering Society,2005 Directory of members published as pt 2 of Apr 1954 issue

The Cambridge Companion to Electronic Music Nicholas Collins,Julio d' Escrivan Rincón,2007-12-13 A contributory volume covering the history and current scene of electronic music [The Oxford Handbook of Music Psychology](#) Susan Hallam,Ian Cross,Michael Thaut,2009 The Oxford Handbook of Music Psychology is the definitive comprehensive and authoritative text on this burgeoning field With contributions from over fifty experts in the field the range and depth of coverage is unequalled It will be an essential resource for students and researchers in psychology [McGraw-Hill encyclopedia of science & technology](#) McGraw-Hill,2002 **American Journal of Physics** ,2002

Unveiling the Magic of Words: A Overview of "**Tuning Timbre Spectrum Scale**"

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