

Access Free Musical  
Perceptions Neuroscience

# **Musical Perceptions Neuroscience**

**Roughly defined as any  
property other than pitch,  
duration, and loudness  
that allows two sounds to**

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**be distinguished, timbre is a foundational aspect of hearing. The remarkable ability of humans to recognize sound sources and events (e.g., glass breaking, a friend's**

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**voice, a tone from a piano) stems primarily from a capacity to perceive and process differences in the timbre of sounds. Timbre raises many important issues in**

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**psychology and the  
cognitive sciences,  
musical acoustics, speech  
processing, medical  
engineering, and  
artificial intelligence.  
Current research on timbre**

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**perception unfolds along  
three main fronts: On the  
one hand, researchers  
explore the principal  
perceptual processes that  
orchestrate timbre  
processing, such as the**

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**structure of its  
perceptual representation,  
sound categorization and  
recognition, memory for  
timbre, and its ability to  
elicit rich semantic  
associations, as well as**

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**the underlying neural mechanisms. On the other hand, timbre is studied as part of specific scenarios, including the perception of the human voice, as a structuring**

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**force in music, as  
perceived with cochlear  
implants, and through its  
role in affecting sound  
quality and sound design.  
Finally, computational  
acoustic models are sought**



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**through prediction of  
psychophysical data,  
physiologically inspired  
representations, and audio  
analysis-synthesis  
techniques. Along these  
three scientific fronts,**

## Access Free Musical Perceptions Neuroscience

**significant breakthroughs  
have been achieved during  
the last decade. This  
volume will be the first  
book dedicated to a  
comprehensive and  
authoritative presentation**

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**of timbre perception and  
cognition research and the  
acoustic modeling of  
timbre. The volume will  
serve as a natural  
complement to the SHAR  
volumes on the basic**

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**auditory parameters of  
Pitch edited by Plack,  
Oxenham, Popper, and Fay,  
and Loudness by  
Florentine, Popper, and  
Fay. Moreover, through the  
integration of**

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**complementary scientific  
methods ranging from  
signal processing to brain  
imaging, the book has the  
potential to leverage new  
interdisciplinary  
synergies in hearing**

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**science. For these reasons, the volume will be exceptionally valuable to various subfields of hearing science, including cognitive auditory neuroscience,**

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**psychoacoustics, music  
perception and cognition,  
but may even exert  
significant influence on  
fields such as musical  
acoustics, music  
information retrieval, and**

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**acoustic signal  
processing. It is expected  
that the volume will have  
broad appeal to  
psychologists,  
neuroscientists, and  
acousticians involved in**



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**research on auditory  
perception and cognition.  
Specifically, this book  
will have a strong impact  
on hearing researchers  
with interest in timbre  
and will serve as the key**

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**publication and up-to-date  
reference on timbre for  
graduate students,  
postdoctoral researchers,  
as well as established  
scholars.**

**Music and the Aging Brain**

## Access Free Musical Perceptions Neuroscience

**describes brain  
functioning in aging and  
addresses the power of  
music to protect the brain  
from loss of function and  
how to cope with the  
ravages of brain diseases**

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**that accompany aging. By studying the power of music in aging through the lens of neuroscience, behavioral, and clinical science, the book explains brain organization and**

## Access Free Musical Perceptions Neuroscience

**function. Written for those researching the brain and aging, the book provides solid examples of research fundamentals, including rigorous standards for sample**

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**selection, control groups,  
description of  
intervention activities,  
measures of health  
outcomes, statistical  
methods, and logically  
stated conclusions.**

# Access Free Musical Perceptions Neuroscience

**Summarizes brain  
structures supporting  
music perception and  
cognition Examines and  
explains music as  
neuroprotective in normal  
aging Addresses the**

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**association of hearing  
loss to dementia Promotes  
a neurological approach  
for research in music as  
therapy Proposes questions  
for future research in  
music and aging**



## Access Free Musical Perceptions Neuroscience

**A rich source of authoritative information that supports reading and study in the field of cognitive neuroscience, this two-volume handbook reviews the current state-**

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**of-the-science in all  
major areas of the field.  
This collection initiates  
a resolutely  
interdisciplinary research  
dynamic specifically  
concerning musical**

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**creativity. Creativity is one of the most challenging issues currently facing scientific psychology and its study has been relatively rare in the**

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**cognitive sciences,  
especially in artificial  
intelligence. This book  
will address the need for  
a coherent and thorough  
exploration. Musical  
Creativity:**

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**Multidisciplinary Research  
in Theory and Practice  
comprises seven sections,  
each viewing musical  
creativity from a  
different scientific  
vantage point, from the**

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**philosophy of computer  
modelling, through music  
education, interpretation,  
neuroscience, and music  
therapy, to experimental  
psychology. Each section  
contains discussions by**

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**eminent international  
specialists of the issues  
raised, and the book  
concludes with a postlude  
discussing how we can  
understand creativity in  
the work of eminent**

## Access Free Musical Perceptions Neuroscience

**composer, Jonathan Harvey.  
This unique volume  
presents an up-to-date  
snapshot of the scientific  
study of musical  
creativity, in conjunction  
with ESCOM (the European**



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**Society for the Cognitive  
Sciences of Music).**

**Describing many of the  
different aspects of  
musical creativity and  
their study, it will form  
a useful springboard for**

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**further such study in  
future years, and will be  
of interest to academics  
and practitioners in  
music, psychology,  
cognitive science,  
artificial intelligence,**

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neuroscience and other  
fields concerning the  
study of human cognition  
in this most human of  
behaviours.

The Routledge Companion to  
Music Cognition

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**The Physics and  
Neuroscience of Music  
The Emotional Power of  
Music  
The Psychology of Music  
Studies in the Neurology  
of Music**

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**Multidisciplinary Research  
in Theory and Practice**

*From the author of The  
Changing Mind and The  
Organized Mind comes a  
New York Times  
bestseller that unravels*

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*the mystery of our  
perennial love affair  
with music \*\*\*\*\* 'What  
do the music of Bach,  
Depeche Mode and John  
Cage fundamentally have  
in common?' Music is an*

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*obsession at the heart  
of human nature, even  
more fundamental to our  
species than language.  
From Mozart to the  
Beatles, neuroscientist,  
psychologist and interna*

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*tionally-bestselling  
author Daniel Levitin  
reveals the role of  
music in human  
evolution, shows how our  
musical preferences  
begin to form even*



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*before we are born and explains why music can offer such an emotional experience. In This Is Your Brain On Music Levitin offers nothing less than a new way to*

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*understand music, and  
what it can teach us  
about ourselves. \*\*\*\*\**

*'Music seems to have an  
almost wilful, evasive  
quality, defying simple  
explanation, so that the*

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*more we find out, the  
more there is to know .  
. . Daniel Levitin's  
book is an eloquent and  
poetic exploration of  
this paradox' Sting  
'You'll never hear music*

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*in the same way again'*  
*Classic FM magazine*  
*'Music, Levitin argues,*  
*is not a decadent modern*  
*diversion but something*  
*of fundamental*  
*importance to the*

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*history of human  
development' Literary  
Review*

*In Psychology of Music:  
From Sound to  
Significance (2nd  
edition), the authors*

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*consider music on a broad scale, from its beginning as an acoustical signal to its different manifestations across cultures. In their second edition,*

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*the authors apply the same richness of depth and scope that was a hallmark of the first edition of this text. In addition, having laid out the topography of*

## Access Free Musical Perceptions Neuroscience

*the field in the original book, the second edition puts greater emphasis on linking academic learning to real-world contexts, and on*



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*including compelling topics that appeal to students' natural curiosity. Chapters have been updated with approximately 500 new citations to reflect*

## Access Free Musical Perceptions Neuroscience

*advances in the field.  
The organization of the  
book remains the same as  
the first edition, while  
chapters have been  
updated and often  
expanded with new*

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*topics. 'Part I:  
Foundations' explores  
the acoustics of sound,  
the auditory system, and  
responses to music in  
the brain. 'Part II: The  
Perception and Cognition*

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*of Music' focuses on how we process pitch, melody, meter, rhythm, and musical structure. 'Part III: Development, Learning, and Performance' describes*

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*how musical capacities  
and skills unfold,  
beginning before birth  
and extending to the  
advanced and expert  
musician. And finally,*

*'Part IV: The Meaning*

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*and Significance of  
Music' explores social,  
emotional, philosophical  
and cultural dimensions  
of music and meaning.*

*This book will be  
invaluable to*

## Access Free Musical Perceptions Neuroscience

*undergraduates and  
postgraduate students in  
psychology and music,  
and will appeal to  
anyone who is interested  
in the vital and  
expanding field of*

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*psychology of music.  
Synthesizing coverage of  
sensation and reward  
into a comprehensive  
systems overview,  
Neurobiology of  
Sensation and Reward*



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*presents a cutting-edge  
and multidisciplinary  
approach to the  
interplay of sensory and  
reward processing in the  
brain. While over the  
past 70 years these*

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*areas have drifted  
apart, this book makes a  
case for reuniting  
sensation and reward by  
highlighting the  
important links and  
interface between the*

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*two. Emphasizing the role of reward in reinforcing behaviors, the book begins with an exploration of the history, ecology, and evolution of sensation*

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*and reward. Progressing through the five senses, contributors explore how the brain extracts information from sensory cues. The chapter authors examine how*

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*different animal species predict rewards, thereby integrating sensation and reward in learning, focusing on effects in anatomy, physiology, and behavior. Drawing on*

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*empirical research,  
contributors build on  
the themes of the book  
to present insights into  
the human sensory  
rewards of perfume, art,  
and music, setting the*

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*scene for further cross-  
disciplinary  
collaborations that  
bridge the  
neurobiological  
interface between  
sensation and reward.*

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*The field of Music  
Psychology has grown  
dramatically in the past  
20 years, to emerge from  
being just a minor topic  
to one of mainstream  
interest within the*



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*brain sciences. However, until now, there has been no comprehensive reference text in the field. The Oxford Handbook of Music Psychology is a landmark*

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*text providing, for the first time ever, a comprehensive overview of the latest developments in this fast-growing area of research. With*

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*contributions from over fifty experts in the field, the range and depth of coverage is unequalled. All the chapters combine a solid review of the relevant*

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*literature with well-reasoned arguments and robust discussions of the major findings, as well as original insights and suggestions for future work. Written*

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*by leading experts, the  
52 chapters are divided  
into 11 sections  
covering both  
experimental and  
theoretical  
perspectives, each*

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*edited by an  
internationally  
recognised authority Ten  
sections each present  
chapters that focus on  
specific areas of music  
psychology: - the*

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*origins and functions of  
music - music perception  
- responses to music -  
music and the brain -  
musical development -  
learning musical skills  
- musical performance -*

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*composition and  
improvisation - the role  
of music in our everyday  
lives - music therapy  
and conceptual  
frameworks In each  
section, expert authors*



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*critically review the literature, highlight current issues, and explore possibilities for the future. The final section examines how in recent years the*

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*study of music  
psychology has broadened  
to include a range of  
other scientific  
disciplines. It  
considers the way that  
the research has*

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*developed in relation to  
technological advances,  
fostering links across  
the field and providing  
an overview of the areas  
where the field needs  
further development in*

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*the future. The Oxford  
Handbook of Music  
Psychology will be the  
essential reference text  
for students and  
researchers across  
psychology and*

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*neuroscience.*

*The Psychology of Music  
in Multimedia*

*Musical Creativity*

*Neurology of Music*

*The Oxford Handbook of*

*Auditory Science: The*

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*Auditory Brain*

*Oxford Handbook of Music*

*Psychology*

*Music, Math, and Mind*

The Routledge Companion to

Embodied Music Interaction

captures a new paradigm in

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the study of music interaction, as a wave of recent research focuses on the role of the human body in musical experiences. This volume brings together a broad collection of work that explores all aspects of

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this new approach to understanding how we interact with music, addressing the issues that have roused the curiosities of scientists for ages: to understand the complex and multi-faceted way in which



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music manifests itself not just as sound but also as a variety of cultural styles, not just as experience but also as awareness of that experience. With contributions from an interdisciplinary and

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international array of scholars, including both empirical and theoretical perspectives, the Companion explores an equally impressive array of topics, including: Dynamical music interaction theories and

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concepts Expressive gestural  
interaction Social music  
interaction Sociological and  
anthropological approaches  
Empowering health and well-  
being Modeling music  
interaction Music-based  
interaction technologies and

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applications This book is a vital resource for anyone seeking to understand human interaction with music from an embodied perspective. This title includes the following features: The first book to describe the

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neural bases of music;  
Edited and written by the  
leading researchers in this  
field; An important addition  
to OUP's acclaimed list in  
music psychology  
This translation of this  
classic text contains a

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balance of cultural and biological considerations. While arguing for the strong influence of exposure and of formal training on the way that music is perceived, Frances draws on the literature concerning the

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amusias to illustrate his points about the types of cognitive abstraction that are performed by the listener.

The Psychology of Music in Multimedia is the first book dedicated to the scientific

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research on how we integrate sound and image when engaging with film, television, video, interactive games, and computer interfaces. The focus on empirical research and strong psychological



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framework make a unique and distinct contribution to the field. The international roster of contributors present rich and diverse perspectives from a wide range of disciplines including psychology,

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musicology, neuroscience,  
media studies, film, and  
communication. Collectively,  
the rich chapters in this  
edited volume present a  
comprehensive treatment of  
research on the multimedia  
experience, with the aim of

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disseminating this knowledge  
base and inspiring future  
scholarship.

Timbre: Acoustics,  
Perception, and Cognition  
Music, Language, and the  
Brain  
Theory and Research

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From Sound to Significance  
Psychology of Music  
The Oxford Handbook of Music  
and the Brain

***Music is a complex, dynamic  
stimulus with an un-paralleled  
ability to stimulate a global  
network of neural activity***

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***involved in attention,  
emotion, memory,  
communication, motor co-  
ordination and cognition. As  
such, it provides neuroscience  
with a highly effective tool to  
develop our understanding of  
brain function, connectivity***

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***and plasticity. Increasingly sophisticated neuroimaging technologies have enabled the expanding field of music neuroscience to reveal how musical experience, perception and cognition may support neuroplasticity, with***

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***important implications for the rehabilitation and assessment of those with acquired brain injuries and neurodegenerative conditions. Other studies have indicated the potential for music to support arousal, attention and***

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***emotional regulation,  
suggesting therapeutic  
applications for conditions  
including ADHD, PTSD,  
autism, learning disorders  
and mood disorders. In  
common with neuroscience,  
the music therapy profession***



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***has advanced significantly in the past 20 years. Various interventions designed to address functional deficits and health care needs have been developed, alongside standardised behavioural assessments. Historically,***

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***music therapy has drawn its evidence base from a number of contrasting theoretical frameworks. Clinicians are now turning to neuroscience, which offers a unifying knowledge base and frame of reference to understand and***

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***measure therapeutic interventions from a biomedical perspective. Conversely, neuroscience is becoming more enriched by learning about the neural effects of 'real world' clinical applications in music therapy.***

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***While neuroscientific imaging methods may provide biomarking evidence for the efficacy of music therapy interventions it also offers important tools to describe time-locked interactive therapy processes and feeds***

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***into the emerging field of social neuroscience. Music therapy is bound to the process of creating and experiencing music together in improvisation, listening and reflection. Thus the situated cognition and***

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***experience of music  
developing over time and in  
differing contexts is of  
interest in time series data.  
We encouraged researchers to  
submit papers illustrating the  
mutual benefits of dialogue  
between music therapy and***

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***other disciplines important to this field, particularly neuroscience, neurophysiology, and neuropsychology. The current eBook consists of the peer reviewed responses to our call for papers.***

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***'You are the music / While the music lasts' T.S. Eliot, The Four Quartets***  
***Do babies remember music from the womb? Can classical music increase your child's IQ? Is music good for productivity? Can it aid recovery from***



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***illness and injury? And what is going on in your brain when Ultravox's 'Vienna', Schoenberg's Verklärte Nacht or Dizzee Rascal's 'Bonkers' transports you back to teenage years? In a brilliant new work that will delight***

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***music lovers of every persuasion, music psychologist Victoria Williamson examines our relationship with music across the whole of a lifetime. Along the way she reveals the amazing ways in which music***

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***can physically reshape our brains, explores how 'smart music listening' can improve cognitive performance, and considers the perennial puzzle of what causes 'earworms'. Requiring no specialist musical or scientific***

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***knowledge, this upbeat, eye-opening book reveals as never before the extent of the universal language of music that lives deep inside us all. The Psychology of Music serves as an introduction to an interdisciplinary field in***

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***psychology, which focuses on the interpretation of music through mental function. This interpretation leads to the characterization of music through perceiving, remembering, creating, performing, and responding***

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***to music. In particular, the book provides an overview of the perception of musical tones by discussing different sound characteristics, like loudness, pitch and timbre, together with interaction between these attributes. It***

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***also discusses the effect of computer resources on the psychological study of music through computational modeling. In this way, models of pitch perception, grouping and voice separation, and harmonic analysis were***

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***developed. The book further discusses musical development in social and emotional contexts, and it presents ways that music training can enhance the singing ability of an individual. The book can be***



## Access Free Musical Perceptions Neuroscience

***used as a reference source for perceptual and cognitive psychologists, neuroscientists, and musicians. It can also serve as a textbook for advanced courses in the psychological study of music. Encompasses the way the***

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***brain perceives, remembers,  
creates, and performs music  
Contributions from the top  
international researchers in  
perception and cognition of  
music Designed for use as a  
textbook for advanced courses  
in psychology of music***

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***In the first comprehensive study of the relationship between music and language from the standpoint of cognitive neuroscience, Aniruddh D. Patel challenges the widespread belief that music and language are***

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***processed independently.  
Since Plato's time, the  
relationship between music  
and language has attracted  
interest and debate from a  
wide range of thinkers.  
Recently, scientific research  
on this topic has been***

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***growing rapidly, as scholars from diverse disciplines, including linguistics, cognitive science, music cognition, and neuroscience are drawn to the music-language interface as one way to explore the extent to which***

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***different mental abilities are processed by separate brain mechanisms. Accordingly, the relevant data and theories have been spread across a range of disciplines. This volume provides the first synthesis, arguing that music***

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***and language share deep and critical connections, and that comparative research provides a powerful way to study the cognitive and neural mechanisms underlying these uniquely human abilities.  
Winner of the 2008 ASCAP***

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***Deems Taylor Award.  
This is Your Brain on Music  
Music and the Aging Brain  
Comparing Notes: How We  
Make Sense of Music  
Worlds, Practices, Modalities  
Music and Empathy  
Brain and Music***



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***The study of music and the brain can be traced back to the work of Gall in the 18th century, continuing with John Hughlings Jackson, August Knoblauch, Richard Wallaschek, and others. These early researchers were***

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***interested in localizing  
musicality in the brain and  
learning more about how music  
is processed in both healthy  
individuals and those with  
dysfunctions of various kinds.  
Since then, the research***

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***literature has mushroomed, especially in the latter part of the 20th and early 21st centuries. The Oxford Handbook of Music and the Brain is a groundbreaking compendium of current research on music in the***

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***human brain. It brings together an international roster of 54 authors from 13 countries providing an essential guide to this rapidly growing field. The major themes include Music, the Brain, and Cultural Contexts;***

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***Music Processing in The Human Brain; Neural Responses to Music; Musicianship and Brain Function; Developmental Issues in Music and the Brain; Music, the Brain, and Health; and the Future. Each chapter offers a***

## Access Free Musical Perceptions Neuroscience

***thorough review of the current status of research literature as well as an examination of limitations of knowledge and suggestions for future advancement and research efforts. The book is valuable for***

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***a broad readership including neuroscientists, musicians, clinicians, researchers and scholars from related fields but also readers with a general interest in the topic.***

***Traditionally, music and***

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***language have been treated as different psychological faculties. This duality is reflected in older theories about the lateralization of speech and music in that speech functions were thought to be localized on the left and***



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***music functions on the right hemisphere. But with the advent of modern brain imaging techniques and the improvement of neurophysiological measures to investigate brain functions an entirely new view on the neural***

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***and psychological underpinnings of music and speech has evolved. The main point of convergence in the findings of these new studies is that music and speech functions have many aspects in common***

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***and that several neural modules are similarly involved in speech and music. There is also emerging evidence that speech functions can benefit from music functions and vice versa. This new research field has***

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***accumulated a lot of new information and it is therefore timely to bring together the work of those researchers who have been most visible, productive, and inspiring in this field and to ask them to present their new***

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***work or provide a summary of  
their laboratory's work.***

***Volume 1: The Ear (edited by  
Paul Fuchs) Volume 2: The  
Auditory Brain (edited by Alan  
Palmer and Adrian Rees) Volume  
3: Hearing (edited by Chris***

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***Plack) Auditory science is one of the fastest growing areas of biomedical research. There are now around 10,000 researchers in auditory science, and ten times that number working in allied professions. This growth is***

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***attributable to several major developments: Research on the inner ear has shown that elaborate systems of mechanical, transduction and neural processes serve to improve sensitivity, sharpen***

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***frequency tuning, and modulate response of the ear to sound. Most recently, the molecular machinery underlying these phenomena has been explored and described in detail. The development, maintenance, and***



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***repair of the ear are also subjects of contemporary interest at the molecular level, as is the genetics of hearing disorders due to cochlear malfunctions.***

***How can an abstract sequence of***

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***sounds so intensely express emotional states? How does music elicit or arouse our emotions? What happens at the physiological and neural level when we listen to music? How do composers and performers***

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***practically manage the  
expressive powers of music?  
How have societies sought to  
harness the powers of music for  
social or therapeutic purposes?  
In the past ten years, research  
into the topic of music and***

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***emotion has flourished. In addition, the relationship between the two has become of interest to a broad range of disciplines in both the sciences and humanities. The Emotional Power of Music is a***

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***multidisciplinary volume  
exploring the relationship  
between music and emotion.  
Bringing together contributions  
from psychologists,  
neuroscientists, musicologists,  
musicians, and philosophers, the***

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***volume presents both theoretical perspectives and in-depth explorations of particular musical works, as well as first-hand reports from music performers and composers. In the first section of the book, the***

## Access Free Musical Perceptions Neuroscience

***authors consider the expression of emotion within music, through both performance and composing. The second section explores how music can stimulate the emotions, considering the psychological***

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***and neurological mechanisms that underlie music listening. The third section explores how different societies have sought to manage and manipulate the power of music. The book is valuable for those in the fields of***



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***music psychology and music  
education, as well as philosophy  
and musicology***

***Music, Passion, and Cognitive  
Function***

***You Are the Music***

***The Perception of Music***

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Perceptions Neuroscience

***How Music Reveals What it  
Means to be Human***

***The Cambridge Handbook of the  
Imagination***

**In this ground-breaking  
synthesis of art and**

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science, Diana Deutsch,  
one of the world's  
leading experts on the  
psychology of music,  
shows how illusions of  
music and speech--many  
of which she herself

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discovered--have  
fundamentally altered  
thinking about the  
brain. These astonishing  
illusions show that  
people can differ  
strikingly in how they

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hear musical  
patterns--differences  
that reflect variations  
in brain organization as  
well as influences of  
language on music  
perception. Drawing on a

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wide variety of fields,  
including psychology,  
music theory,  
linguistics, and  
neuroscience, Deutsch  
examines questions such  
as: When an orchestra

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performs a symphony,  
what is the "real"  
music? Is it in the mind  
of the composer, or the  
conductor, or different  
members of the audience?  
Deutsch also explores

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extremes of musical  
ability, and other  
surprising responses to  
music and speech. Why is  
perfect pitch so rare?  
Why do some people  
hallucinate music or



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speech? Why do we hear phantom words and phrases? Why are we subject to stuck tunes, or "earworms"? Why do we hear a spoken phrase as sung just because it is

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presented repeatedly? In evaluating these questions, she also shows how music and speech are intertwined, and argues that they stem from an early form

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of communication that had elements of both. Many of the illusions described in the book are so striking and paradoxical that you need to hear them to

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believe them. The book enables you to listen to the sounds that are described while reading about them.

Consciousness has been described as one of the

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most mysterious things  
in the universe.

Scientists,  
philosophers, and  
commentators from a  
whole range of  
disciplines can't seem

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to agree on what it is,  
generating a sizeable  
field of contemporary  
research known as  
consciousness studies.  
Following its forebear  
Music and Consciousness:

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Philosophical,  
Psychological and  
Cultural Perspectives  
(OUP, 2011), this volume  
argues that music can  
provide a valuable route  
to understanding

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consciousness, and also that consciousness opens up new perspectives for the study of music. It argues that consciousness extends beyond the brain, and is



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fundamentally related to  
selves engaged in the  
world, culture, and  
society. The book brings  
together an  
interdisciplinary line  
up of authors covering

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topics as wide ranging  
as cognitive psychology,  
neuroscience,  
psychoanalysis,  
philosophy and  
phenomenology,  
aesthetics, sociology,

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ethnography, and  
performance studies and  
musical styles from  
classic to rock, trance  
to Daoism, jazz to  
tabla, and deep  
listening to free

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improvisation. Music and  
Consciousness 2 will be  
fascinating reading for  
those studying or  
working in the field of  
musicology, those  
researching

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consciousness as well as  
cultural theorists,  
psychologists, and  
philosophers.

How does music work?

Indeed, what is (or  
isn't) music? We are all

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instinctively musical,  
but why? Adam Ockelford  
has the answers. A tap  
of the foot, a rush of  
emotion, the urge to hum  
a tune; without  
instruction or training

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we all respond  
intuitively to music.  
Comparing Notes explores  
what music is, why all  
of us are musical, and  
how abstract patterns of  
sound that might not

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appear to mean anything  
can, in fact, be so  
meaningful. Taking the  
reader on a clear and  
compelling tour of major  
twentieth century  
musical theories,



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Professor Adam Ockelford  
arrives at his own  
important  
psychologically grounded  
theory of how music  
works. From pitch and  
rhythm to dynamics and

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timbre, he shows how all the elements of music cohere through the principle of imitation to create an abstract narrative in sound that we instinctively grasp,

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whether listening to  
Bach or the Beatles.  
Authoritative, engaging,  
and full of wonderful  
examples from across the  
musical spectrum,  
Comparing Notes is

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essential reading for  
anyone who's ever loved  
a song, sonata, or  
symphony, and wondered  
why.

The Routledge Companion  
to Music Cognition

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addresses fundamental questions about the nature of music from a psychological perspective. Music cognition is presented as the field that

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investigates the  
psychological,  
physiological, and  
physical processes that  
allow music to take  
place, seeking to  
explain how and why

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music has such powerful  
and mysterious effects  
on us. This volume  
provides a comprehensive  
overview of research in  
music cognition,  
balancing accessibility

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with depth and  
sophistication. A  
diverse range of global  
scholars--music  
theorists,  
musicologists,  
pedagogues,



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neuroscientists, and  
psychologists--address  
the implications of  
music in everyday life  
while broadening the  
range of topics in music  
cognition research,

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deliberately seeking  
connections with the  
kinds of music and  
musical experiences that  
are meaningful to the  
population at large but  
are often overlooked in

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the study of music  
cognition. Such topics  
include: Music's impact  
on physical and  
emotional health Music  
cognition in various  
genres Music cognition

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in diverse populations,  
including people with  
amusia and hearing  
impairment The  
relationship of music to  
learning and  
accomplishment in

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academics, sport, and  
recreation The broader  
sociological and  
anthropological uses of  
music Consisting of over  
forty essays, the volume  
is organized by five

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primary themes. The first section, "Music from the Air to the Brain," provides a neuroscientific and theoretical basis for the book. The next three

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sections are based on  
musical actions:

"Hearing and Listening  
to Music," "Making and  
Using Music," and  
"Developing Musicality."  
The closing section,

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"Musical Meanings,"  
returns to fundamental  
questions related to  
music's meaning and  
significance, seen from  
historical and  
contemporary



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perspectives. The  
Routledge Companion to  
Music Cognition seeks to  
encourage readers to  
understand connections  
between the laboratory  
and the everyday in

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their musical lives.

Multidisciplinary

perspectives on

creativity, performance

and perception

Music and Consciousness

2

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How Music and Speech  
Unlock Mysteries of the  
Brain

The Cognitive  
Neuroscience of Music  
Understanding a Human  
Obsession

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## **Musical Illusions and Phantom Words**

The Springer Handbook of Auditory Research presents a series of comprehensive and synthetic reviews of the fundamental topics in

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modern auditory research.  
The volumes are aimed at  
all individuals with  
interests in hearing  
research including  
advanced graduate  
students, post-doctoral

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researchers, and clinical investigators. The volumes are intended to introduce new investigators to important aspects of hearing science and to help established

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investigators to better understand the fundamental theories and data in fields of hearing that they may not normally follow closely. Each volume presents a

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particular topic  
comprehensively, and each  
serves as a synthetic  
overview and guide to the  
literature. As such, the  
chapters present neither  
exhaustive data reviews



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nor original research that has not yet appeared in peer-reviewed journals. The volumes focus on topics that have developed a solid data and conceptual foundation rather than on

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those for which a literature is only beginning to develop. New research areas will be covered on a timely basis in the series as they begin to mature.

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There has been an increase in research activities on music perception and performance and their correlates in the human brain. The increase in scientific work has been

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motivated by the idea that music offers a unique opportunity to better understand brain organisation. This volume brings together leading scientists that use a wide

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range of different  
methodologies from the  
cognitive sciences and  
neurosciences.

A state-of-the-art  
overview of the latest  
theory and research in

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music psychology, written  
by leaders in the field.  
This authoritative,  
landmark volume offers a  
comprehensive state-of-the-  
art overview of the latest  
theory and research in

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music perception and  
cognition. Eminent  
scholars from a range of  
disciplines, employing a  
variety of methodologies,  
describe important  
findings from core areas

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of the field, including music cognition, the neuroscience of music, musical performance, and music therapy. The book can be used as a textbook for courses in music



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cognition, auditory  
perception, science of  
music, psychology of  
music, philosophy of  
music, and music therapy,  
and as a reference for  
researchers, teachers, and

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musicians. The book's sections cover music perception; music cognition; music, neurobiology, and evolution; musical training, ability, and

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performance; and musical experience in everyday life. Chapters treat such topics as pitch, rhythm, and timbre; musical expectancy, musicality, musical disorders, and

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absolute pitch; brain  
processes involved in  
music perception, cross-  
species studies of music  
cognition, and music  
across cultures;  
improvisation, the

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assessment of musical  
ability, and singing; and  
music and emotions,  
musical preferences, and  
music therapy.

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This book provides a broad  
introduction to the  
scientific and

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psychological study of music, exploring how music is processed by our brains, affects us emotionally, shapes our personal and cultural identities, and can be

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used in therapeutic and educational contexts. Why are some people tone deaf and others musical savants? What do our musical preferences say about our personality and

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the culture in which we were raised? Why do certain songs remind us so strongly of particular people, places, or events? How can music be therapeutically used to

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help those with autism,  
Parkinson's, and other  
medical conditions? The  
Science and Psychology of  
Music: From Beethoven at  
the Office to Beyoncé at  
the Gym answers these and

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other questions. This book provides a broad and accessible introduction to the fascinating field of music psychology. Despite its name, music psychology includes a number of

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fields, including neuroscience, psychology, social psychology, sociology, and health. Through a collection of thematically organized chapters, readers will

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discover how our brains recognize elements of music, how music can affect us and shape our identities, and the many real-world applications for such information.



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Explores a topic that is of great interest to both psychology students and the general public through accessible and engaging content Provides a conceptual framework for

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readers and through a multi-part format allows them to focus their attention on their particular areas of interest Furthers readers' understanding of how music

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can affect our wellbeing  
as it includes both our  
physical and psychological  
health Reflects the  
subject knowledge of  
contributing experts in a  
wide variety of academic

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disciplines

Core Topics

The Evolution of Rhythm

Cognition: Timing in Music  
and Speech

The Science and Psychology  
of Music: From Beethoven

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at the Office to Beyoncé  
at the Gym

Neurobiology of Sensation  
and Reward

The relationship between  
music and language

Multidisciplinary

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perspectives on musical  
arousal, expression, and  
social control

This book offers a lively  
exploration of the mathematics,  
physics, and neuroscience that  
underlie music. Written for

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musicians and music lovers with any level of science and math proficiency, including none, Music, Math, and Mind demystifies how music works while testifying to its beauty and wonder.

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In recent years, empathy has received considerable research attention as a means of understanding a range of psychological phenomena, and it is fast drawing attention within the fields of music psychology



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and music education. This volume seeks to promote and stimulate further research in music and empathy, with contributions from many of the leading scholars in the fields of music psychology, neuroscience,

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music philosophy and education.  
It exposes current  
developmental, cognitive, social  
and philosophical perspectives  
on research in music and  
empathy, and considers the  
notion in relation to our

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engagement with different types of music and media. Following a Prologue, the volume presents twelve chapters organised into two main areas of enquiry. The first section, entitled 'Empathy and Musical Engagement',

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explores empathy in music education and therapy settings, and provides social, cognitive and philosophical perspectives about empathy in relation to our interaction with music. The second section, entitled

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'Empathy in Performing Together', provides insights into the role of empathy across non-Western, classical, jazz and popular performance domains. This book will be of interest to music educators, musicologists,

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performers and practitioners, as well as scholars from other disciplines with an interest in empathy research.

The human imagination manifests in countless different forms. We imagine the possible

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and the impossible. How do we do this so effortlessly? Why did the capacity for imagination evolve and manifest with undeniably manifold complexity uniquely in human beings? This handbook reflects on such

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questions by collecting perspectives on imagination from leading experts. It showcases a rich and detailed analysis on how the imagination is understood across several disciplines of study, including anthropology,



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archaeology, medicine,  
neuroscience, psychology,  
philosophy, and the arts. An  
integrated theoretical-empirical-  
applied picture of the field is  
presented, which stands to  
inform researchers, students,

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and practitioners about the issues of relevance across the board when considering the imagination. With each chapter, the nature of human imagination is examined - what it entails, how it evolved, and why it singularly

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defines us as a species.  
The second edition of The  
Oxford Handbook of Music  
Psychology updates the original  
landmark text and provides a  
comprehensive review of the  
latest developments in this fast-

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growing area of research. Covering both experimental and theoretical perspectives, each of the 11 sections is edited by an internationally recognised authority in the area. The first ten parts present chapters that focus

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on specific areas of music  
psychology: the origins and  
functions of music; music  
perception, responses to music;  
music and the brain; musical  
development; learning musical  
skills; musical performance;

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composition and improvisation; the role of music in everyday life; and music therapy. In each part authors critically review the literature, highlight current issues and explore possibilities for the future. The final part examines

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how, in recent years, the study of music psychology has broadened to include a range of other disciplines. It considers the way that research has developed in relation to technological advances, and points the

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direction for further development in the field. With contributions from internationally recognised experts across 55 chapters, it is an essential resource for students and researchers in psychology and musicology.



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The Oxford Handbook of Music  
Psychology  
Dialogues in Music Therapy and  
Music Neuroscience:  
Collaborative Understanding  
Driving Clinical Advances  
Music and the Brain

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The Routledge Companion to  
Embodied Music Interaction  
The Oxford Handbook of  
Cognitive Neuroscience, Volume  
1  
Foundations in Music  
Psychology

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*Musical imagination and creativity are amongst the most abstract and complex aspects of musical behaviour, though, until recently, they have been difficult to subject to empirical enquiry. However,*

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*music psychology and some allied disciplines have now developed, both theoretically and methodologically, to the point where some of these topics are now firmly within our grasp. The study of*

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*creativity and imagination  
is growing rapidly in  
disciplines including  
psychology, sociology,  
neuroscience, and education.  
The inter- and  
multidisciplinary study of  
music, and developments in*

# Access Free Musical Perceptions Neuroscience

*music psychology in particular, mean that studies of musical imagination and creativity in action are now distinctly possible 'Musical Imaginations' is a wide ranging, multidisciplinary*

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*review of the latest theory  
and research on musical  
creativity, performance and  
perception by some of the  
most eminent scholars in  
their respective  
disciplines. The topics  
addressed in this book*

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*include the investigation of  
creativity and imagination  
in music and emotion,  
composition and  
improvisation, performance  
and performance traditions,  
listening strategies,  
different musical genres and*



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*cultural belief systems,  
social collaboration,  
identity formation, and the  
development of  
psychologically-based  
strategies and interventions  
for the enhancement of  
performing musicians. With*

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*creativity now a topic of significant interest, this book will be valuable to all those in the fields of psychology, sociology, neuroscience, education, as well as to musicians themselves - dealing with*

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*practical as well as  
theoretical issues in music  
therapy, performance and  
education. The study of  
creativity and imagination  
is growing rapidly in  
disciplines including  
psychology, sociology,*

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*neuroscience, and education.  
The inter- and  
multidisciplinary study of  
music, and developments in  
music psychology in  
particular, mean that  
studies of musical  
imagination and creativity*

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*in action are now distinctly possible. This book undertakes a multidisciplinary review of these developments. It contains a wide range of contributions by some of the most eminent scholars in*

# Access Free Musical Perceptions Neuroscience

*their respective  
disciplines, representing a  
comprehensive account of the  
state of the art of theory  
and research on musical  
creativity, performance and  
perception.*

*Human speech and music share*

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*a number of similarities and differences. One of the closest similarities is their temporal nature as both (i) develop over time, (ii) form sequences of temporal intervals, possibly differing in duration and*

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*acoustical marking by different spectral properties, which are perceived as a rhythm, and (iii) generate metrical expectations. Human brains are particularly efficient in perceiving, producing,*



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*and processing fine rhythmic information in music and speech. However a number of critical questions remain to be answered: Where does this human sensitivity for rhythm arise? How did rhythm cognition develop in human*

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*evolution? How did environmental rhythms affect the evolution of brain rhythms? Which rhythm-specific neural circuits are shared between speech and music, or even with other domains? Evolutionary*

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*processes' long time scales often prevent direct observation: understanding the psychology of rhythm and its evolution requires a close-fitting integration of different perspectives. First, empirical*

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*observations of music and  
speech in the field are  
contrasted and generate  
testable hypotheses.*

*Experiments exploring  
linguistic and musical  
rhythm are performed across  
sensory modalities, ages,*

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*and animal species to address questions about domain-specificity, development, and an evolutionary path of rhythm. Finally, experimental insights are integrated via synthetic modeling,*

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*generating testable  
predictions about brain  
oscillations underlying  
rhythm cognition and its  
evolution. Our understanding  
of the cognitive,  
neurobiological, and  
evolutionary bases of rhythm*

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*is rapidly increasing.  
However, researchers in  
different fields often work  
on parallel, potentially  
converging strands with  
little mutual awareness.  
This research topic builds a  
bridge across several*

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*disciplines, focusing on the cognitive neuroscience of rhythm as an evolutionary process. It includes contributions encompassing, although not limited to: (1) developmental and comparative studies of*



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*rhythm (e.g. critical acquisition periods, innateness); (2) evidence of rhythmic behavior in other species, both spontaneous and in controlled experiments; (3) comparisons of rhythm processing in*

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*music and speech (e.g. behavioral experiments, systems neuroscience perspectives on music-speech networks); (4) evidence on rhythm processing across modalities and domains; (5) studies on rhythm in*

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*interaction and context  
(social, affective, etc.);  
(6) mathematical and  
computational (e.g.  
connectionist, symbolic)  
models of "rhythmicity" as  
an evolved behavior.  
This introduction to the*

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*perception and cognition of music has been designed for both psychology and music students. The chapters are prefaced by editorial comments that give readers a background to the research discussed by the*

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*contributors.*

*A comprehensive survey of  
the latest neuroscientific  
research into the effects of  
music on the brain Covers a  
variety of topics  
fundamental for music  
perception, including*

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*musical syntax, musical semantics, music and action, music and emotion Includes general introductory chapters to engage a broad readership, as well as a wealth of detailed research material for experts Offers*

# Access Free Musical Perceptions Neuroscience

*the most empirical (and most systematic) work on the topics of neural correlates of musical syntax and musical semantics Integrates research from different domains (such as music, language, action and emotion*

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*both theoretically and  
empirically, to create a  
comprehensive theory of  
music psychology*

*Musical Imaginations*

*Musical Perceptions*

*The Biological Foundations  
of Music*



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## ***Music Perception***

Music, Passion, and Cognitive Function examines contemporary cognitive theories of music, why they cannot explain music's power over us, and the origin and evolution of music. The book presents experimental confirmations of the theory in psychological and neuroimaging

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research, discussing the parallel evolution of consciousness, musical styles, and cultures since Homer and King David. In addition, it explains that 'in much wisdom is much grief' due to cognitive dissonances created by language that splits the inner world. Music enables us to survive in this sea of grief, overcomes discomforts and

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stresses of acquiring new knowledge, and unifies the soul, hence the power of music.

Provides a foundation of music theory

Demonstrates how emotions motivate interaction between cognition and

language Covers differentiation and

synthesis in consciousness Compares the parallel evolution of music and cultures

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Examines the idea of music overcoming  
cognitive dissonances

" ... also derived from a symposium held at  
the Medical Society of London."--P. ix.