

# **A THEORY FOR ALL MUSIC**

**Jay Rahn**

**Back-in-Print™**

University of Toronto Press Inc.  
214 College Street  
Toronto, Ontario, Canada, M5T 3A1  
phone: (416) 978-7927 fax: (416) 978-7242



University of Toronto Press, Inc.  
Back In Print™ Service



The content of this book constitutes a unique  
on-demand replica of an original  
publication. This replica has been produced  
at the University of Toronto Press,  
Canada, in 1998,  
using digital imaging technology.



The Service replicates out-of-print books  
with the permission  
of the copyright holders or their agents.  
Further reproduction  
in any form of copyright volumes is prohibited.





## **A THEORY FOR ALL MUSIC**

Problems and Solutions in the Analysis of Non-Western Forms

Jay Rahn

Professor Rahn takes the approach to the analysis of Western art music developed recently by theorists such as Benjamin Boretz and extends it to address non-Western forms. In the process, he rejects recent ethnomusicological formulations based on mentalism, cultural determinism, and the psychology of perception as potentially fruitful bases for analysing music in general. Instead he stresses the desirability of formulating a theory to deal with all music, rather than merely Western forms, and emphasizes the need to evaluate an analysis and compare it with other interpretations, and demonstrates how this may be done.

The theoretical concepts which form the basis of Rahn's approach are discussed and applied: first to individual pieces of non-Western music which have enjoyed a fairly high profile in ethnomusicological literature, and second to repertoires or groups of pieces.

The author also discusses the fields of anthropology and psychology, showing how his approach serves as a starting point for studies of perception and the concepts, norms, and values found in specific music cultures. In conclusion, he lists what he considers to be musical universals and takes up the more controversial issues implicit in his discussion.

JAY RAHN has been a visiting assistant professor in the Department of Fine Arts at Atkinson College, York University, and in the Faculty of Music at the University of Toronto.



JAY RAHN

A Theory for All Music:  
Problems and Solutions in  
the Analysis of  
Non-Western Forms

UNIVERSITY OF TORONTO PRESS  
Toronto Buffalo London

© University of Toronto Press 1983  
Toronto Buffalo London  
Printed in Canada

ISBN 0-8020-5538-9

---

**Canadian Cataloguing in Publication Data**

Rahn, Jay, 1947-  
A theory for all music

Includes index.

ISBN 0-8020-5538-9

1. Music – Theory. 2. Music – Philosophy and  
aesthetics. I. Title.

ML3845.R33      781      c82-094367-3

---

# Contents

Acknowledgments ix

## Part I Preliminaries

1 The question 3

2 Choosing a basis 6

*Criteria* 7

*Mentalistic bases* 7

*Cultural bases* 12

*Psychological bases* 19

*Summary* 22

3 Choosing a method of interpretation 23

*Criteria for adequacy* 23

*Objectivity* 25

*Determinacy* 30

*Terminology* 31

*Quality of interpretations* 36

## Part II A theory for all music

4 Basic concepts and ultimate values 43

*Aesthetic criteria in the sciences* 45

*Theoretical elegance* 49



vi Contents

*Undefined concepts* 52

*Conclusions* 55

5 The isomorphism of pitch and time 56

*Pitches and moments* 57

*Spans and bands* 57

*Intervals* 61

*Interval bands and durational spans* 63

*Quantification* 64

*Bisection* 68

*Cycles and selection* 71

*Summary* 74

6 Orientation and reference 77

*Relative orientation* 77

*Absolute orientation* 82

*Loudness* 83

*Timbre and sonance* 83

*Proximity* 84

*Summary* 86

*Two interpretations of a children's song* 87

### Part III Applications

7 Some pieces reinterpreted 95

*Sweathouse song of the Flathead* 97

*'Du:,' a Hukwe bow song* 104

*Taqsim* 114

*Conclusions* 126

8 Some repertoires reinterpreted 129

*Asaadia of the Akan* 130

*Lin YÜ's music for the Confucian temple* 157

*The hornpipes in Harding's Collection* 174

*Conclusions* 191

## Part IV Beyond music theory

9 Perceptual correlates 195

*Limitations of psychology* 198

*Compatibility of psychology and the theory advanced here* 202

*Conclusions* 206

10 Cultural correlates 207

*Music and culture among the Venda* 208

*Conclusions* 216

## Part v Review

11 Conclusions 221

*Implications for music theory* 221

*Implications for ethnomusicology* 223

*Some apparent universals* 224

12 Some possible objections 226

*Minds* 226

*The theory presented here as a theory* 227

*Causality* 228

*The best interpretation* 228

*Other approaches* 229

*Binarism* 229

*Musical facts* 229

*Ethnocentricity* 230

*The twelve-semitone system* 231

*The comprehensiveness of the theory* 231

Glossary 233

References 251

Index 259



# Acknowledgments

During the years when I worked on this book, I relied heavily on many colleagues and friends inside and outside academe for support related to the present work. Their support took the form of friendly and informal discussion, counsel, and encouragement. I would especially like to thank in this regard Harvey Olnick, the late Mieczyslaw Kolinski, Joe Katz, Robert Austerlitz, Ben Boretz, Pat Carpenter, Gaynor Jones, Austin Clarkson, David Lidov, Jim Tenney, Duke Gray, Alex Knopf, and Sharon Harris. I am very grateful to them all. I am also indebted to Y & R Properties and the Toronto Transit Commission for providing environments congenial to much of the writing that went into this work.

The late Alan P. Merriam of the Anthropology Department, Indiana University, graciously allowed me to retranscribe his recording of the Flathead sweat-house song discussed in chapter 7. Bruno Nettl of the School of Music, University of Illinois, checked some points that I raised concerning the transcription of the *nai* piece against the original recording.

Both of these scholars, as well as John Blacking of the Social Anthropology Department, Queen's University, Belfast, Marcia Herndon of the Anthropology Department, University of Texas at Austin, Robert Kauffman of the Music Department, University of Washington at Seattle, and the late Mieczyslaw Kolinski of the Faculty of Music, University of Toronto, most obligingly clarified certain points that arose in certain of their writings that come under review here.

Copyright releases were kindly provided by Bruno Nettl, Kwabena Nketia, and Frederick Harris Music.

Charles Bogue and Dawn Morrissette helped considerably with the typing of the first drafts, Frank Nakashima copied the musical examples, and Zena Miller assisted in proofreading the galleys. Thanks should also go to the editors at the University of Toronto Press, particularly to Lorraine Ourom, who took such care in preparing the manuscript for publication.

## x Acknowledgments

This book has been published with the help of a grant from the Canadian Federation for the Humanities, using funds provided by the Social Sciences and Humanities Research Council of Canada, and a grant from the Publications Fund of University of Toronto Press.

**PART I  
PRELIMINARIES**



## The Question

How can one best interpret all music? The following pages contain an answer to this question.

For the purposes of this study, 'all music' includes not only twelve-tone and tonal music but also early modal music of the West, folk and popular idioms of Europe and America, and non-Western traditions of all types. Although I will not treat them in detail, this term could also include non-human music, such as the sounds of nature. My definition of *music* is thus quite broad: any observable scores (i.e., written music) or sounds. (In accord with this broad definition, I frequently use the general term *observables* rather than more specific designations, such as *sounds* or *the score*.)

A central preoccupation in this book is the interpretation of music. Musical interpretation has been called analysis, description, dissection, and hermeneutics, to list only a few epithets. In English, 'analysis' invites the phrase 'coldly analytical.' Similarly, descriptions are often denigrated as being 'merely descriptive.' Dissection connotes death and surgery. And hermeneutics is frequently used to describe sterile exercises in exegesis. Since I am convinced of the value of discussing music, I will generally forgo these potentially derogatory terms and phrases in favour of the more positive word *interpretation*.

The possibility that interpretation might be construed as a bad thing raises a number of highly emotional issues which should be dealt with at the outset. There is a feeling in some quarters that the interpretation of music is an arbitrary, uncalled-for, dull, or dehumanizing activity. Indeed, much that has hidden under the word *interpretation* (or its synonyms) has exhibited some of these characteristics. But much of what passes for science, philosophy, and other 'talk about things' could also be condemned on these grounds. There is no reason why an experiment, a theorem, an argument, or even a musical interpretation should be arbitrary, uncalled-for, dull, or dehumanizing. If C.P. Snow (1964), Jacob



#### 4 A theory for all music

Bronowski (1961), G.H. Hardy (1940), and others are right in their persuasive discussions, the human and physical sciences can be well-founded, compelling, inspiring, and ultimately humanizing. A scientific theory can consolidate or upset a person's world view as profoundly as a painting. A mathematical system can have all the grace, elegance, and mystery of a shadow play. Why, then, should musical interpretations not aspire to the excitement of the art itself?

One possible reason is that musical interpretations are frequently ugly. Accordingly, a central purpose of this study is to put some beauty into interpretations. This will not be accomplished by tricks of flowery language or irrational rhetoric, because one is inevitably disappointed whenever one tries to understand such fine phrases. The method I have adopted is to express beautiful relationships in a rigorous way, rather than to express banal or non-existent relationships in purple prose. A few unadorned facts about a piece of music are more interesting than all of the ecstatic reports that one might receive.

Another reason for lack of excitement about musical interpretation is the esoteric nature of the language used. The music of each of the world's cultures seems to have a special vocabulary developed all for itself. Yet how necessary is all this jargon? As will be seen in chapter 6, concepts needed to interpret music are quite few and so semantically basic that a child could understand them. It is hoped that apologies for the use of technical terms will become obsolete.

Throughout this study, I have tried to stick as closely as possible to the facts of music, to 'face the music,' as it were. There is a tendency today for musical scholars to discuss everything but music. Like religion, politics, and bodily functions, music seems to have become a topic that is taboo. Biographical, historical, and socio-cultural data; acoustics, physiology, perception, and behaviour: all are interesting subjects but they are ultimately para-musical. In accordance with this view, a development of the notion that musical interpretations require only musical observables as their data appears in chapter 2.

If one is to interpret music, any interpretation will not do. An interpretation of thunder and lightning in terms of Wotan rather than electricity is obviously inferior from the point of view of science. Similarly, some interpretations of music are inadequate in the face of the facts. Others are merely adequate, and still others are outstanding. Scientific fields of inquiry have developed methods for evaluating and comparing theories, but no accepted method has existed for aesthetic interpretations. Thus, in chapter 4, I develop a method for assessing musical analyses.

A theory without applications is of little use. Consequently, in chapters 7 and 8 individual pieces and repertoires are reinterpreted from the viewpoint of the theory developed here. The choice of pieces and repertoires has been made

## 5 The Question

according to a number of criteria. Some of the music discussed has loomed large in the ethnomusicological literature. Other materials have been chosen because they are particularly well-documented. The sum, I think, represents a fair cross-section of recent studies in ethnic music.

In chapter 8, I deal with repertoires. At this point, some new notions are added. The concept of a repertoire, a unified set of pieces as opposed to an arbitrary collection of works, is investigated. And in the following chapters, special questions arising from studies in human perception and culture are discussed. This sets the stage for my final consideration: how a unified music theory might affect the future of musical studies.

Until very recently, serious scholars would have considered the question 'How can one best interpret all music?' preposterous. Particularistic studies were in vogue at the expense of universal perspectives. But times have changed. Music theory has entered a new era. In *Meta-Variations*, Benjamin Boretz (1969, 1970 a, b, c, 1971, 1972) has developed a truly radical approach to the analysis of music. One of the results of his study is a synthetic view in which tonal and twelve-tone music are seen to issue from a common basis as branches from the trunk of a tree. Boretz terms the systematic exposition of this common basis the 'all-musical system.'

In a sense, Boretz's term *all-musical* represents an unjustified claim: the empirical portion of his study deals almost exclusively with the European tradition. Pentatonic music, and the systems represented by *rags*, *maqamat*, *dastgahah*, and various kinds of *patet* are not confronted at all. In at least two other senses, however, one can justify the 'all' of Boretz's all-music theory. First, music theory that is creative – I exclude here historical and pedagogical music theory – has been of late almost exclusively preoccupied with tonal theory as developed by Heinrich Schenker and twelve-tone, or atonal, theory as expounded by Arnold Schoenberg and later writers. Thus, Boretz's contribution clarifies almost all of the recent literature on music theory. Second, though Boretz, like many other music theorists, pays little attention to phenomena other than Western art music of the last three centuries, his approach is so universal that one can apply it to other music as well. In other words the system of *Meta-Variations* contains the seeds of a theory for all music. Thus, the major task of the present study is to broaden the scope of musical theory, so that it might truly account for all music.

## Choosing a Basis

In order to develop a theory, one must have a basis, a body of data that are going to be taken into account. In a study of music, one starts minimally with the sounds and scores themselves. However, it is plausible that additional aspects of music have to be taken into account. For example, psychological or cultural data might be necessary to achieve the best interpretation of some music. Since I will be considering music different from that treated in Boretz's all-musical system, and especially non-Western music, some consideration of the various bases that ethnomusicologists have proposed is in order.

Ethnomusicologists generally claim 'all music' as their subject matter. Recently, a number of prominent scholars in that field have expressed hopes that something resembling a theory for all music be developed. Bruno Nettl has written that 'it would seem to be the task of the ethnomusicologist to derive a method [of interpretation] which is equally applicable to all music' (1964: 135). Mieczyslaw Kolinski pleaded that 'what is urgently needed is the formulation of concepts and methods designed to bring about an objective, thorough, and meaningful analysis of [all] musical structure' (1967: 9). Earlier, the late Charles Seeger had written of the need for a 'rationale' in order to evaluate all music (1960: 224). Marcia Herndon has considered the 'need for a metalanguage' for all music (1974a: 250-1), and John Blacking has mentioned the necessity of 'a unitary method of musical analysis which can ... be applied to all music.' (1971: 93).

Clearly, ethnomusicologists, despite their differences of outlook, are unified in their desire for a theory for all music. One area where their differences of outlook clash is the choice of a potential basis of data. Their writings about music reveal a wide variety of data that might be incorporated into an interpretation, and each of these bases would lead to a different type of general music theory. In the following sections, these potential bases are roughly grouped

## 7 Choosing a basis

according to whether they are mentalistic, cultural, or psychological in nature. But before considering these plausible bases, it is necessary to establish criteria by which they can be evaluated.

### CRITERIA

The simplest criterion is range of applicability. Some bases cannot deal with all the types of observables that might be considered music. Accordingly, they restrict the definition of music, and are not likely to yield a theory for all music. A second criterion is the applicability of the assumptions. In other words, do they give rise to testable hypotheses? The final criterion is economy. In scholarly work, it is best to have the fewest possible undefined or primitive terms. If two theories explain the same range of observables and the first invokes fewer concepts than the second, the first is preferred as the basis because it takes less for granted.

Throughout the following discussion, these three criteria should be remembered as well as the essential problem to be solved: selecting a basis for interpreting all music. Along the way, a number of important approaches in ethnomusicology will be discarded. But they will be discarded not because they are totally without value – which they are not – but because they are inadequate to deal with the problem at hand: choosing a basis for a theory for all music.

### MENTALISTIC BASES

One of the most tempting approaches to musical interpretation is mentalistic. By a mentalistic approach I mean one in which some or all of the following are components of, or justifications for, a proposed interpretation of music: what people think, conceive, consider, desire, hear, know, and feel; how they view or respond to music; and what their aesthetic experiences, ideals, fondnesses, mental processes, intents, motivations, or cognitive systems are, as well as whether they are aware, conscious, or unconscious of these.

To judge from the titles of recent television programs and books, such as *The Experience of Music* and *Music and Your Mind* (Bonny and Savary, 1973), the relationship between mental processes and music is a popular topic for the layperson. But the preoccupation with mind, experience, cognition, perception, and so forth has not been restricted to popular and pedagogical writers. Quite the contrary, a number of serious scholars have posited such mental entities as the basis for musical research. For example, Charles Seeger (1960: 257) considers what musicians think to be evidence that must be taken into account when one studies music. Alan P. Merriam (1964: 33; 1969: 226; personal communication:

## 8 A theory for all music

1976) adopts what he terms 'concepts about music' as one of his three bases for musical investigation, stating that 'without concepts about music, behavior cannot occur, and without behavior, music sound cannot be produced.' And finally, Stephen Feld, apparently following Merriam's lead, proposes that mentalism be the theoretical basis of ethnomusicology (1974: 211).

These assertions involve at least two grave issues. Is it really possible to know what musicians think? And if so, is there a necessary, causal relationship between what musicians think and the sounds they produce? Both of these questions must be considered if one is to interpret all music, and, accordingly, both will be dealt with below.

If one must consider the 'experience of music' one must decide whose experience is relevant to the interpretation. For example, one could consider one's own experience to be of primary importance. The established method for doing so is that of introspection. Usually, however, ethnomusicologists have presumed that the experience of others is more important than that of the investigator. Thus, Marcia Herndon says that how they think about it is the primary consideration (1974a: 247); Alan Merriam states that the ethnomusicologist 'does not seek the aesthetic experience for himself as a primary goal ..., but rather he seeks to perceive the meaning of the aesthetic experience of others' (1964: 25); and during his discussion of the notion of octave equivalence, Bruno Nettl avers that 'all cultures may not consider tones an octave apart to be so close [*sic*] in identity as do Western musicians' (1964: 145). To judge from these statements, other people, and especially people from cultures other than our own, do not think about music in the same way as we do. Among ethnomusicologists, then, there is a mistrust of introspection as a method for interpreting music.

Though the assumption that others think about music differently than we do has often been merely asserted, there have been occasions when ethnomusicologists have gone so far as to describe in more positive terms just how other people think about their music. These range from Robert Kauffman's vague belief 'that the Shona people view their music ... as a process closely resembling the relationships found in the social structures of the society' (1972: 48–50) to McDermott and Sumarsan's precise assertion that 'Javanese ... are content to hear *nem* throughout lines one to three' of a given piece (1975: 242–3). Similarly, Penelope Sanger and Neil Sorrell ascribe a certain 'fondness for parallel whole tones' to the people of Umeda village in New Guinea (1975: 76), and George List considers important the question 'Would the Vedda know what a tonal center is?' (1971: 401).

Such assertions and questions imply that there is some method for proving or disproving the embodied hypotheses. Two important queries are, then: How did

## 9 Choosing a basis

Kauffman, McDermott, Sumarsam, Sanger, and Sorrell find out what the views, desires, perceptions, and fondnesses of their informants were; and how might List find out whether the Vedda know what a tonal centre is?

If one considers further the question of whose experience is relevant to an interpretation, one finds that composers, performers, and listeners have all been the subjects of mentalistic assertions. Thus, Bruno Nettl in discussing a certain piece, seriously considers the possibility that 'the repetition of rhythmic patterns and the basic identity of the four sections made the use of a strong tonal center (by the composer) unnecessary' (1964: 160). Vida Chenoweth states that 'composers have employed [a certain rhythmic device] to intentionally [*sic*] create suspense' (1974: 65). And John Blacking asserts that 'patterns are generated by processes that are in the mind of the composer' (1971: 91).

With regard to the experience of performers, Fremont Besmer says that it seems clear that the performer of a given Hausa piece 'had in mind a concept of form and variation' (1970: 431). Johanna Spector speculates on a given performer's 'intent' to produce a certain interval (1970: 248), and John Blacking has stated that 'we want to know what a musician sets out to do each time he plays a certain piece of music,' and his (Blacking's) 'transcriptions are intended to represent the musical patterns desired by any two Venda who set out to play [ocarina] duets' (1959: 15). Finally, Bruno Nettl, writing of a Persian performer under certain performance conditions, states that the performer 'may feel that it is desirable to develop one or two *gushehs* thoroughly and then to show his understanding of the total *radif* by bringing in another *gusheh* or two briefly' (1974: 408).

With regard to the audience, Nettl asserts that the listeners are 'constantly made aware of familiar signposts' in the music (1974: 411). Theodore and Theodore A. Stern state that 'to the listener [the leap of an ascending fourth] establishes the second tone as a sort of center' (1971: 192), and Vida Chenoweth says that 'some music systems interchange major and minor thirds indiscriminately; that is, no significant difference is heard between the two' (1974: 52). Finally, Judith Becker considers the experiences of composer, performer, and listener as relevant to one of her studies of Burmese music (1969: 268, 272, 277-8).

A mentalistic approach inevitably involves a consideration of musical consciousness. The thoughts, desires, and feelings that are ascribed to oneself or to members of one's own culture or other cultures – be they composers, performers, or listeners – can be located in the fully conscious mind, in the subconscious, or in the unconscious. As an example of location in the conscious mind, one can cite Habib Touma's statement that although 'the Near Eastern musician is









































































































































































































































































































































































































































































































































































































