Table of Contents

Introduction 1

I. Gestalt Theory Revisited 11

Origin and Nature of Cognitive and Systematic Musicology:
An Introduction
Marc Leman and Albrecht Schneider 13
Systematic, Cognitive and Historical Approaches in Musicology
Jukka Louhivuori 30
Empiricism, Gestalt Qualities, and Determination of Style:
Some Remarks Concerning the Relationship of Guido Adler
to Richard Wallaschek, Alexius Meinong, Christian von Ehrenfels,
and Robert Lach
Michael Weber 42
Gestalt Concepts and Music: Limitations and Possibilities
Mark Reybrouck 57
Logic, Gestalt Theory, and Neural Computation in Research on
Auditory Perceptual Organization
Randolph Eichert, Lüder Schmidt, and Uwe Seifert 70
Knowledge in Music Theory by Shapes of Musical Objects
and Sound-Producing Actions
Rolf Inge Godøy 89
Statistical Gestalts - Perceptible Features in Serial Music
Elena Ungeheuer 103

II. From Pitch to Harmony 115

"Verschmelzung", Tonal Fusion, and Consonance:
Carl Stumpf Revisited
Albrecht Schneider 117
Schema and Gestalt: Testing the Hypothesis of
Psychoneural Isomorphism by Computer Simulation
Marc Leman and Francesco Carreras 144
Self-organizing Neural Nets and the Perceptual Origin of
the Circle of Fifths
Nicola Cufaro Petroni and Matteo Tricarico 169
A Model of the Perceptual Root(s) of a Chord
Accounting for Voicing and Prevailing Tonality
Richard Parncutt 181
'Good', 'Fair', and 'Bad' Chord Progressions:
A Regression-Analysis of Some Psychological Chord Progression Data
Obtained in an Experiment by J. Bharucha and C. Krumhansl
Daniel Werts 200

Problems of Shape and Background in Sounds with Inharmonic Spectra
Jenö Keuler 214
A Method of Analysing Harmony, Based on Interval Patterns or "Gestalten"
Roland Eberlein 225
Neural Network Models for the Study of Post-Tonal Music
Eric Isaacson 237

III. From Rhythm to Expectation 251

Tempo Relations: Is There a Psychological Basis for Proportional Tempo Theory?
Marek Franěk and Jiří Mates 253
A Framework for the Subsymbolic Description of Meter
Dirk Moelants 263
Musical Rhythm: A Formal Model for Determining Local Boundaries, Accents and Metre in a Melodic Surface
Emilios Cambouropoulos 277
Effects of Perceptual Organization and Musical Form on Melodic Expectancies
Carol Krumhansl 294
Continuations as Completions: Studying Melodic Expectation in the Creative Microdomain ***Seek Well***
Steve Larson 321

IV. From Timbre to Texture 335

Optimizing Self-Organizing Timbre Maps: Two Approaches
Petri Toiviainen 337
Towards a More General Understanding of the Nasality Phenomenon
Milan Rusko 351
Karl Erich Schumann's Principles of Timbre as a Helpful Tool in Stream Segregation Research
Christoph Reuter 362
Cross-Synthesis Using Interverted Principal Harmonic Sub-Spaces
Thierry Rochebois and Gérard Charbonneau 375
Gestalt Phenomena in Musical Texture
Dalia Cohen and Shlomo Dubnov 386

V. From Musical Expression to Interactive Computer Systems 407

Technology of Interpretation and Expressive Pulses
Andranick Tanguiane 409

Intonational Protention in the Performance of Melodic Octaves on the Violin
Janina Fyk 421
Sonological Analysis of Clarinet Expressivity
Sergio Canazza, Giovanni De Poli, Stefano Rinaldin and Alvise Vidolin 431
Perceptual Analysis of the Musical Expressive Intention in a Clarinet Performance
Sergio Canazza, Giovanni De Poli and Alvise Vidolin 441
Singing, Mind and Brain – Unit Pulse, Rhythm, Emotion and Expression
Eliezer Rapoport 451
Emulating Gestalt Mechanisms by Combining Symbolic and Subsymbolic Information Processing Procedures
Udo Mattusch 469
Interactive Computer Music Systems and Concepts of Gestalt
Paul Modler 482
Gestalt-Based Composition and Performance in Multimodal Environments
Antonio Camurri and Marc Leman 495

VI. List of Sound Examples on the CD 509

Name Index 517

Subject Index 519