Log of Current Applications

I. Text Applications

A. Composer Studies

Bruckner/Lovallo
Title: *Anton Bruckner Discography*
Scope: an indexed catalogue of all recordings of Bruckner's music
Investigator: Lee Lovallo
Place: Sacramento, CA
Duration of project: 1984-1989

Krenek/Bowles
Title: *Ernst Krenek--A Bio-Bibliography*
Scope: an annotated bibliography and catalogue of writings by and about Krenek
Investigator: Garrett Bowles
Duration of project: 1988
Hardware, OS: IBM-AT
Database software: custom

Vivaldi Arias/Hill
Title: *Vivaldi's Opera Aria Texts*
Purpose: to discover text paraphrasing as a clue to musical borrowing [Illustration--1988: p. 127]
Investigator: John Walter Hill
Duration of project: 1986--
Place: Urbana, IL
Hardware, OS: IBM PC/AT, DOS
Database software: Savvy PC
Associated literature: "Two Relational Databases for Finding Text Paraphrases in Musicological Research" [with Tom Ward] in *Computers and the Humanities*, XXIII/2 (1989)

B. Authorship Studies

The Authorship of *Psyché*/Noe

Title: "Psyché--un exercise de style classique" in *Literary and Linguistic Computing* 3 (1988), 244-9

Purpose: to differentiate the literary styles of *Psyché*'s four authors--Corneille, Lully, Molière, and Quinault--on a stylometric basis; the uniform assimilation of classical traits predominates over recognizably individual ones

Investigator: Alfred Noe

Place: Institut für Romanistik, University of Vienna

C. Repertory Studies

CANTUS/Steiner

Title: *CANTUS: A Database for Gregorian Chant*

Scope: creation of a database of indices to the Gregorian chants from the Divine Office, emphasizing manuscript sources; searchable and sortable by third parties via diskette

Investigator: Ruth Steiner

Place: Catholic University of America, Washington, DC

Hardware: IBM PC

CAO-ECE/Falvy *et al.*

Title: *Corpus Antiphonalium Oficii-Ecclesiarum Centralis Europae*

Scope: a collection of four related databases concerned with Hungarian plainchant and associated repertories; searches for text incipits, source, liturgical function are supported

Investigator: Zoltán Falvy (Budapest), László Dobszay, David Hiley (Regensburg), and many others

Database software: dBase III

Country Dance/Keller

Title: *British-American Country Dance to 1810*

Scope: a database of country-dance and cotillion choreographies from printed and manuscript sources; queries for specific figures and sequences are supported

Investigator: Robert Keller

Associates: Kate Keller, Jacquelyn Schwab

Place: Darnestown, MD

Duration of project: 1988-90

Hardware, OS: MS/DOS on IBM compact

Database software: dBase IV

Early Italian Monody/Hill

Title: *Index of Early Italian Monody Sources*

Purpose: to locate source concordances and to identify contrafacta through comparative study of meter, scansion, and rhyme

Investigator: John Walter Hill

Duration of project: 1987--

Place: Urbana, IL

Hardware, OS: IBM PC/AT, DOS

Database software: Savvy PC

Associated literature: *see* "Vivaldi Arias/Hill", *above*

Fourteenth-century Music/Stinson and Griffiths

Title: *The Fourteenth-century Music Project*

Scope: comprehensive inventory of the music of the 14th century, with related databases of scholarly literature, archival documents, manuscript descriptions, and relevant iconography. Data encoded for the Liturgical Repertoires project can be integrated into this repertory database

Directors of project: John Stinson, John Griffiths
Associates: Giovanni Carsaniga, Robyn Smith
Place: La Trobe University, Melbourne
Duration of project: 1984-92
Hardware: Compaq 386S, VAX, Macintosh
Software: dBase III+, SCRIBE

Lute Manuscripts/Meyer et al.
Title: *Descriptive Catalogue of Manuscript Sources in Tablature: Music for Plucked Stringed Instruments*
Goal: to catalogue the entire corpus of manuscript sources in tablature by title, location, and thematic incipit
Phase I: to create a catalogue of manuscripts in tablature for lute and theorbo
Phase II: to create a catalogue of manuscripts in tablature for the guitar and other plucked instruments
Duration: longterm
Investigators: international collaboration headed by Christian Meyer with national centers for data collection
Associates: Victor Coelho (Calgary), Dinko Fabris (Ferrara), François Lesure (Paris), Monique Rollin (CNRS, Paris), Jean-Michel Vaccaro (Tours)
Hardware: IBM PC compatibles

Motet/Erviti
Title: *Profiles of the Motet, 1500-1535*
Purpose: to index complete texts, text sources, and various musical features of motets, facilitating identification of similarities and possible shared musical characteristics of the texts
Investigator: Manuel Erviti
Place: University of Illinois, Urbana-Champaign
Duration: 1987--
Hardware: IBM PC/AT
Database software: Savvy PC

Nineteenth-century Operas/Clinkscale

Title: *Nineteenth-century Operas*
Scope: composer, title, first-performance database of 19th-century operas
Investigator: Edward Clinkscale
Place: UC Riverside
Database software: R:BASE for DOS

RELICS/Crawford

Title: *Renaissance Liturgical Imprints: A Census*
Scope: creation of a database of liturgical books printed between 1450 and 1600 [3500 records to date]
Investigators: David Crawford, James Corders
Software: SPIRES

Vocal Music in Italian Lute MSS/Fabris

Title: *Systematic catalogue of vocal music in 100 manuscript sources of Italian lute tablature from the 15th to the 17th century*
Goal: to catalogue this category of vocal music as a complement to the broader census of the vocal repertory explained under "Italian *poesia per musica*" [below]; the repertory consists of roughly 1000 pieces
Investigator: Dinko Fabris
Time frame: 1989-90
Place: Ferrara
Hardware: IBM PC compatible
Database software: dBase III+, IV
Music printing software: Note Processor
Associated Literature: "Un progetto internazionale di catalogazione della musica per liuto (secolo XV-XVIII)" forthcoming in *Schifanoia*, n. 5.

D. Subject Bibliographies

Austrian Music/Antonicek

Title: *Datenbank zur österreichischen Musik*
Scope: a register of all data that relate to music in Austria (at present mainly bibliography)
Investigator: Theophil Antonicek
Associate: Elisabeth Hilscher
Place: Kommission für Musikforschung, Institut für Musikwissenschaft der Universität Wien
Hardware: IBM PC-AT, IBM 3090
Database Software: Euroscript, Asksam

Bibliography of Venetian Music/Passadore

Title: *Bibliografia Musicale Veneta*
Scope: bibliography of all works regarding music of the Venetian Republic, including writings in periodicals, catalogues, theses, and books
Coordinator: Francesco Passadore
Place: Fondazione Levi, Venice
Associated Literature: *Acta Musicologica* **LIX** (1987), 328

Italian *poesia per music*/Vassalli

Title: *Census of Italian* poesia per music *(1500--1700)*
Goals: to identify the authors and sources of Italian poetry in musical settings of the 16th and 17th centuries; the results provide an analytical and annotated index to the *Bibliografia della musica italiana vocale profana pubblicata dal 1500 al 1700* by Emil Vogel, Alfred Einstein, François Lesure, and Claudio Sartori
Phase I: examination of all printed sources of Italian lyric poetry to 1650; to date 3000 collections of poetry have been identified and roughly half have been analyzed
Phase II: creation of a database of this material that may be expanded and queried
Investigator: Antonio Vassalli

Associates: Angelo Pompilio, Silva De Marchi (with data entry by Cecilia Luzzi and Gianmario Merizzi)
Places: Ferrara (direction), Bologna and Florence (programming, data entry)
History: begun in 1977 by Lorenzo Bianconi and Antonio Vassalli under the title *Indagine sulla poesia per musica intorno al 1600* with funding from the Swiss National Research Council
Time span: provisional report planned for 1990
Hardware: IBM PC compatibles
Software: custom, in C
Associated Literature: Thomas Walker, "L'Archivio del Madrigale a Ferrara" in *Le fonti musicali in Italia: studi e ricerche*, I (1987), 55-61

Musical Citation Index/London
Title: *SMT Musical Example Database*
Scope: off-line database of musical examples cited in current books and periodicals
Investigator: Justin M. London
Associates: James Ruhler, John Schaffer
Place: University of Pennsylvania, Syracuse, Madison, WI
Duration: 1989--
Hardware: IBM XT, Apple Mac

E. Source Bibliographies

EDISON/Giuriati
Title: *Computerized Catalogue of Italian Folksong*
Scope: index of 20,000 documents belonging to the Laboratorio Didattica Etnomusicologia
Investigator: Giovanni Giuriati
Place: University of Rome

French Music Engraving/Bowles

Title: *French Music Engraving--A Bibliography, 1660-1720*

Scope: a descriptive catalogue of all engraved music published in France from 1660 to 1720

Investigator: Garrett Bowles

Duration: to 1991

Hardware: IBM-AT

Database software: custom

Other software: troff--Apple Laserwriter

Italian Music Prints/Pompilio

Title: *Bibliografia della musica a stampa pubblicata in Italia tra il 1570 e il 1630*

Scope: to create a computerized catalogue of Italian music prints (sacred, secular, instrumental, and theoretical), both surviving and indirectly documented, for the specified period; the material recorded is designed to facilitate research on editorial and printing practices; 5000 titles to date

Investigator: Angelo Pompilio

Associate: Cecilia Luzzi

Place: Ferrara, Istituto di Studi Rinascimentali; Bologna

Duration: to 1990

Database software: dBase III

Music Catalogue of the Netherlands

Title: *Muziek Catalogus Nederland (MCN)*

Scope: joint catalogue of 170,000 titles in five libraries; 40,000 titles added each year; 15 searchable fields

Director: G. C. M. van Dijck

Central location: Utrecht

RIPM/Cohen

Title: *Répertoire International de la Presse Musicale*

Scope: series of indices to musical periodicals from the late 18th to the early 20th century; each journal is indexed in a separate volume [UMI, in progress]

Investigators: H. Robert Cohen, director; Marcello Conati, Christoph-Hellmut Mahling *et al.*

Place: University of Maryland
Associated Literature: *Acta Musicologica* **LIX** (1987), 308ff.

Schatz Libretto Collection/McClymonds
Title: *Albert Schatz Libretto Collection*
Scope: to catalogue the 9000 libretti of this Library of Congress collection in conjunction with US-RISM
Chief investigator: Marita McClymonds
Place: University of Virginia
Method of distribution: bibliographical records will be deposited in the Research Libraries Information Network (RLIN)

Stephen Foster Collection/Root
Title: *A Catalogue of Scores and Recordings in the Stephen Foster Memorial Collection*
Purpose: to create a complete catalogue of musical materials in the collection
Chief investigator: Deane L. Root
Place: University of Pittsburgh
Method of distribution: bibliographical records will be deposited in the Online Computer Library Center (OCLC) database

F. Fulltext Databases

Central European Theory Treatises/Ward
Title: *Central European Medieval Treatises*
Scope: creation of a fulltext database of music theory treatises concerning chant and measured polyphonic music written in central Europe during the 15th century; study of concordances and interrelationships
Investigator: Tom Ward
Place: University of Illinois
Hardware: IBM PC compatible
Software: Savvy PC
Associated Literature: "Two Relational Databases for Finding Text Paraphrases in Musicological Research" [with John Hill] in *Computers and the Humanities* **23** (1989), 105-11

THEMA/Pinegar

Title: *THEMA (Archive of Musical Theoretical Documents of the Middle Ages)*

Scope: direct transcription (including abbreviations) of over Latin treatises on music of the 13th century [30 to date]

Method: abbreviations are encoded, so that paleographical information as well as text content can be studied

Investigator: Sandra Pinegar

Place: Columbia University

Duration: ongoing

Hardware, OS: IBM AT and PC DOS

Analysis software: Oxford Concordance Program

Database software: dBase III+

G. Graphic Lexicons

Analytical Notation/Kwiatkowska

Title: *Universal Analytical Music Notation*

Goal: to establish a set of 325 systematically organized graphic symbols expressing music elements in their qualitative and quantitative modes.

Investigator: Barbara J. Kwiatkowska

Place: Los Angeles

Hardware: Macintosh

Baroque Notation/Pont

Title: *The Notation of Baroque Music*

Scope: to describe and index the elements of musical notation and the figures formed by combining elements; to compile an index of technical vocabulary derived from scores and theoretical writings. Images are captured from optical scanning of printed and manuscript sources [see p. XX]

Investigator: Graham Pont

Associates: Nigel Nettheim, Linda Rosendahl

Place: University of N.S.W., Sydney, Australia

Duration of project: 1989-91

Hardware: IBM-AT, Image Scanner

Software: custom, by Nigel Nettheim

II. Integrated Text and Music Applications

Thematic Indices

Burns/Ashmead and Davison

Title: *Relation of Words and Music in the Songs of Robert Burns*
Purpose: to develop computer analysis programs in C for the analysis of folk tunes and words
Investigators: John Ashmead, John Davison
Duration of project: three years
Place: Haverford College
Hardware: IBM PC, Macintosh, VAX
Database software: will adapt database for folk tunes studied by Bertrand Bronson
Other software: Grammatik, Songwright 4.0
Associated literature: *The Songs of Robert Burns* (NY: Garland, 1988)

Hymn Tune Index/Temperley

Title: *Hymn Tune Index*
Purpose: to index and sort all tunes associated with English-language hymns found in sources printed before 1821
Investigator: Nicholas Temperley
Associates: Charles G. Mann, Joseph Herl, Margo Chaney
Place: University of Illinois
Duration: 1982-90
Operating system: UNIX
Database software: INGRES

Marais/Bowles

Title: *Thematic Catalogue of Marin Marais's Instrumental Music*
Goal: to produce a published book including musical incipits
Investigator: Garrett Bowles
Duration of project: to be finished by 1990
Hardware: IBM-AT
Encoding and printing software: SCORE

Associated literature: "The Computer-Produced Thematic Catalogue: An Index to the *Pièces de violes* of Marin Marais", Ph.D. thesis, Stanford University, 1978 [resume in *Fontes Artes Musicae* 26/2 (1979), 102-7]

Motet/Lincoln

Title: *The Latin Motet, 1500-1550: Indexes to Printed Collections*

Scope: thematic index of all Latin motets found in collections printed between 1500 and 1550, as indexed by RISM; modelled after *The Italian Madrigal* [1988: 113]

Investigator: Harry B. Lincoln

Duration of project: 1988-1991

Place: SUNY Binghamton

Database hardware (OS): IBM 3090, VM/CMS

Encoding software: DARMS

Database, analysis software: local programs

Music-printing hardware, software: Zeta plotter, custom programs

Associated literature: *The Italian Madrigal and Related Repertories: Indexes to Printed Collections, 1500-1600* (Yale University Press, 1988)

RISM A II Concordances/Schlichte

Title: *Incipit Comparisons and Concordances from the RISM A/II Database*

Scope: recent searches on 80,000 encoded incipits of musical manuscripts from the seventeenth and eighteenth centuries [1988: 11-24] have yielded surprising results--concordances between Haydn and Mozart manuscripts and anonymous sources (1%), new attributions for Haydn and Mozart *incerta* (22%), attributions for previously unattributed works (2%), and multiple attributions of the same work in diff erent sources (6%). Concordances between individual movements of diverse works have also been identified [see XX].

Investigators: Joachim Schlichte, Klaus Keil
Place: RISM Zentralredaktion, Frankfurt, FRG
Software: custom, with complete pitch and rhythm information and filters for ornamentation

Thematic Catalogue Index/Tortiglione
Title: *A General Index of Thematic Catalogues*
Scope: to provide an index to the contents of widely used thematic catalogues
Investigator: Paolo Tortiglione
Place: Milan Conservatory
Time span: 1988-90
Hardware: IBM PS2
Software: dBase III+, Xywrite
Music-printing software: Personal Composer, SCORE

Thematic Catalogue Search Tool/Midolo
Title: *Electronic Thematic Catalogue*
Goal: to set up thematic catalogues that can be accessed using melodic and rhythmic search-keys
Investigator: Sebastiano Midolo
Duration of project: 1989-1990
Place: Turin, Italy
Hardware: AMIGA, MIDI keyboard
Software: custom, in C

Venetian Ospedali/Whittemore
Title: *Music of the Venetian Ospedali: A Thematic Catalogue* [Pendragon Press, forthcoming]
Scope: catalogue of 1300 music manuscripts associated with the Venetian *ospedali*; 700 are previously uncatalogued items from the archives of San Marco
Investigator: Joan Whittemore

Source Transcription and Analysis

Byzantine Music/Zannos

Title: Transcription and Analysis of Byzantine Music

Purpose and scope: to provide a means of transcribing the historical Greek Orthodox repertory and to facilitate comparison with Turkish music; at present the program searches for all patterns of sign combinations, notes, degrees, intervals, and rhythms occurring more than once. [See pp. XX]. The lexicon of formulae is self-developing. This is part of a dissertation project concerned with improvisation and ornamentation in Greek Orthodox and Turkish music

Investigator: Ioannis Zannos

Place: Musikwissenschaftliches Institut, University of Hamburg

Hardware: Atari ST 1024

Software: custom, in APL and LISP

Associated Literature: Dana Angluin, "Finding Patterns Common to a Set of Strings" in *Journal of Computer and System Sciences* **21** (1986), 46-62.

Fourteenth-Century Liturgical Repertories/Stinson

Title: *Comparative Study of Fourteenth-Century Liturgical Repertories*

Scope: comparison of musical repertories and scriptorium practices in France and Italy

Investigator: John Stinson

Associates: Margaret Manion, Cecilia O'Brien, Vera Vines Brian Parish

Duration of project: 1989-1992

Place: La Trobe University

Hardware: Compaq 386S

Encoding and analysis software: SCRIBE [see p. 53]

Database software: dBase III+

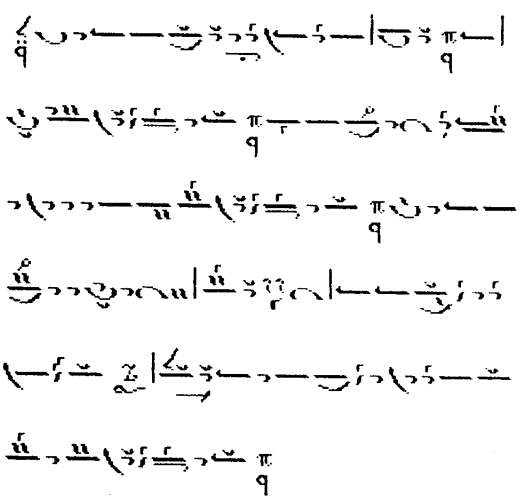
Automatic transcription:

Byzantine Music

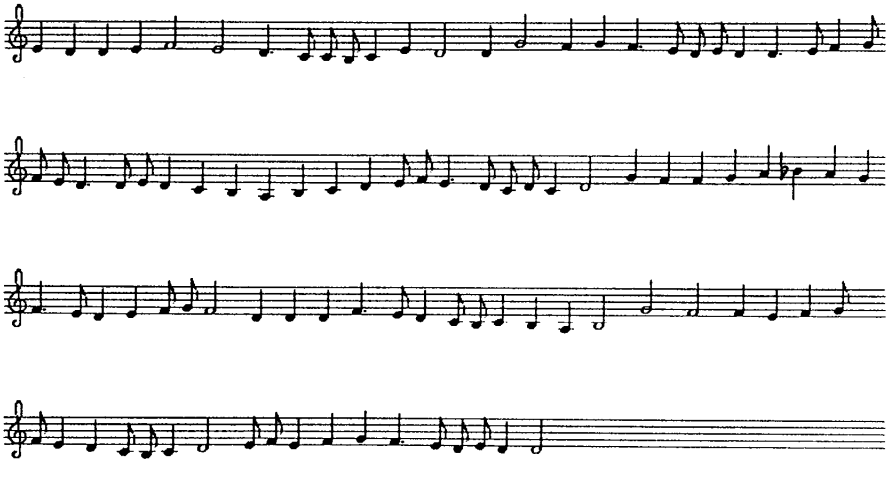
Contributor: Ioannis Zannos
Input: Atari ST 1024
Place: Hamburg, Musikwissenschaftliches Institut

1. NEO-BYZANTINE NOTATION

Κεκραγάριον, ἦχος α΄



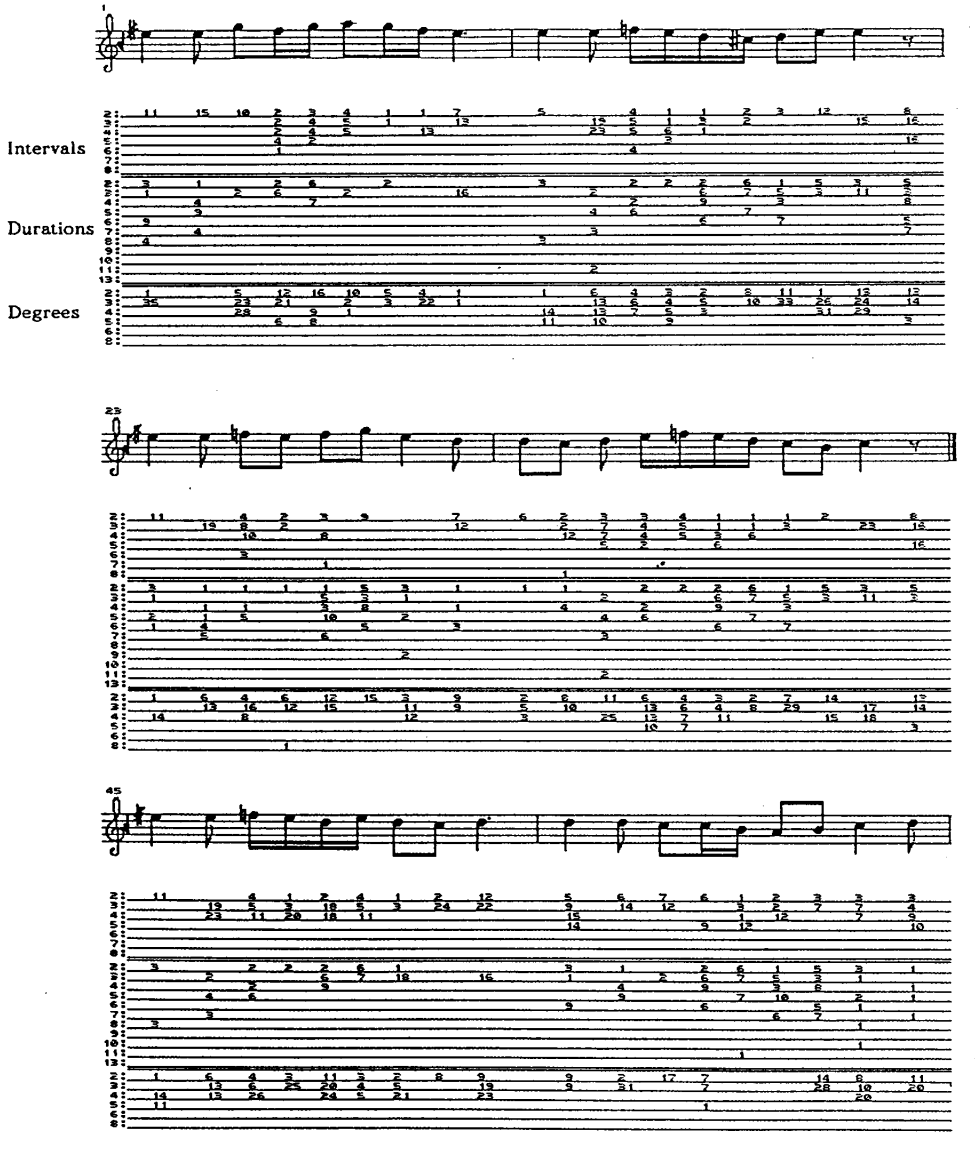
2. TRANSCRIPTION OF THE ABOVE EXCERPT



This research project, using APL and LISP, is designed to facilitate comparison of Greek and Turkish music in diverse notations. First, all patterns of sign combinations, notes, degrees, intervals, and rhythms are identified and catalogued. A self-developing concordance is created. Then a table of formulae is assembled. Finally, relationships between musical formulae and text elements are examined.

3. ANALYSIS

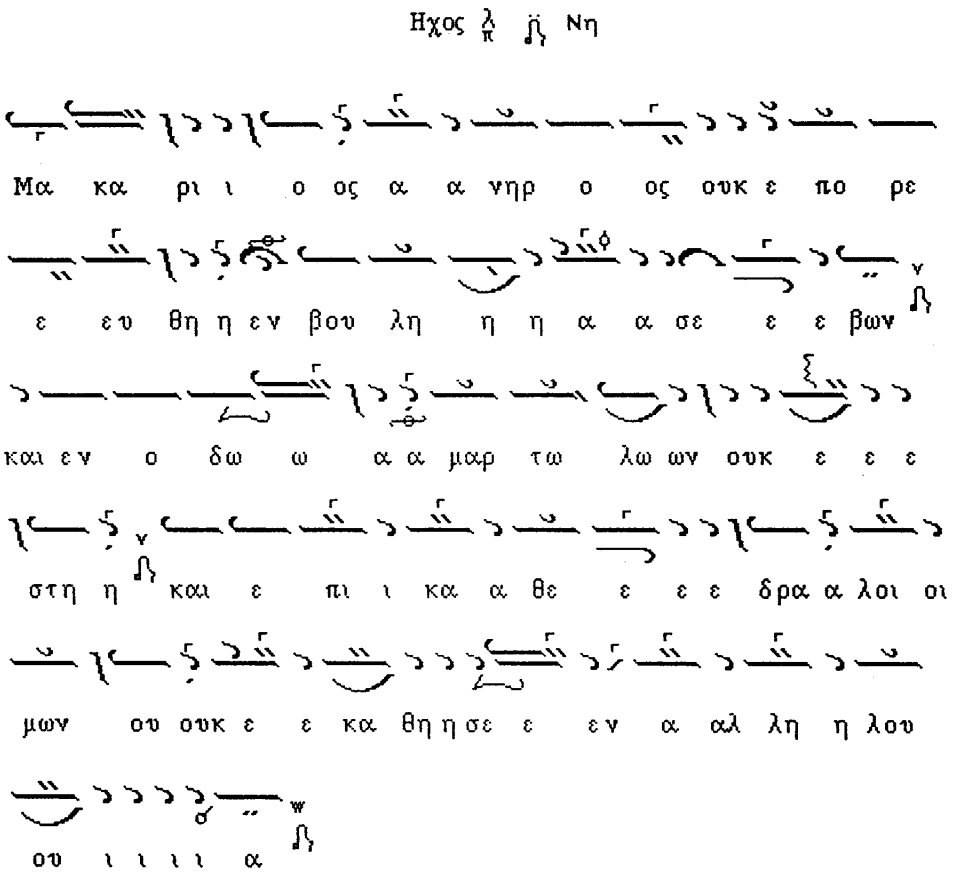
Zacharias (the Hanende) (- 1740): Hüseini Ağır Semai (Bars 1-6)
Aspects: Intervals, Durations, Degrees. Positions of the formulae found.



Automatic Transcription:

Neo-Byzantine Notation

Contributor: Dimitris Giannelos
Input: Macintosh Plus, IBM PC
Output: Apple ImageWriter
Place: ERATTO, Paris



Music-printing hardware: Roland DXY 990 plotter
Associated literature: "Decoration, Text, and Music in Fourteenth-Century Italian Choirbooks", *Miniatura* 1 (1988), 183

Gershwin Piano Rolls/Wodehouse
Title: *George Gershwin's Piano Rolls*
Purpose: conversion of Gershwin piano rolls to MIDI data and printed scores; the stored data will be used to study the evolution of Gershwin's style as a performer; based on the collection of Mike Montgomery
Investigator: Artis Wodehouse
Place: Palo Alto, CA
Hardware: Micro-W video roll reader; Yamaha Disklavier
Music-printing software: *Finale* (with adaptations by by George Letterst)
Associated Literature: forthcoming in the newsletter of the Institute for Studies in American Music

Greek Religious Music/Giannelos
Title: *Research into the Automatic Transcription and Analysis of Traditional Greek Religious Music*
Goal: fully automatic transcription of Neo-Byzantine notation into European notation; creation of software for analysis of this and other traditional religious music as well as Greek folk music [see pp. XX]
Period of repertory: 1800-present
Investigator: Dimitris Giannelos
Duration of project: from 1987
Place: CNRS-ERATTO
Hardware: Macintosh Plus, IBM PC
Encoding software: custom, in MS BASIC
Music-printing hardware: ImageWriter
Music-printing software: conventional output from Michel Wallet's *Euterpe*

ISIS/Philip

Title: *Interactive Signal Inspection System (ISIS)*
Description: ISIS allows the display of digitized music in the form of an oscillogram; segments displayed on the screen can be detached and measured in pitch frequency and duration (in milliseconds)
Investigator: Margot Philip
Software developer: Johannes Philip
Intended application: ethnomusicological study of repertories without fixed pitch and/or rhythmic elements

LIAO Database/Schaff rath and Zhang

Title: *Songs of the Chinese Han Population*
Scope: input, analysis, and cataloguing of Chinese folk melodies
Investigators: Helmuth Schaff rath, Bo Yu Zhang
Places: Essen University; Beijing Conservatory
Duration: 1985--
Hardware: IBM 4381 and PC; Great Wall 0520
Music code: ESAC (converted from MIDI)
Database software: STAIRS and Asksam (Essen)
Analysis software: in BASIC, PROLOG (Beijing)
Music-printing software: Personal Composer
Associated literature: Zhang's "The Use of Computers in the Field of Music" in the *Journal of the Central Conservatory of Music* 1988/4

Karelian Lament/Vaughn

Title: *Karelian Lament*
Purpose: to study interrelationships of vocal tremor and emotional state
Investigator: Kathryn Vaughn
Place: UCLA
Hardware: Fairlight voice tracker
Software: Music Mapper (custom)

String Quartet Incunabula/Downs

Title: *The Incunabula of the String Quartet*

Scope: diplomatic scoring of string chamber music from part books of 1760-90 [Illustration, p. 95]

Investigator: Philip G. Downs

Associates: David Hill, David Palmer, Dillon Parmer, Andrea Sherlock

Place: University of Western Ontario, London, Ontario

Duration: 1986-89

Hardware: Macintosh IIx

Software: *MusPrint*, *Finale*

Trouvère Lyrics/Tischler

Title: *Trouvère Lyrics with Melodies and Lais: Complete Comparative Edition*

Scope: a) preparation of camera-ready copy; b) creation of database for comparing melodies and other musical features

Investigator: Hans Tischler

Associate: Alice Tischler

Duration of project: 1990-1992

Place: Indiana University

Hardware: Macintosh PC

Ugaritic Notation/Halperin

Title: *Ugaritic Notation*

Goal: decipherment of cuneiform notation from Ras Shamra (Ugarit) *c.* 1600 B.C. using quasi-cryptographical methods based on permutations and distance metrics

Investigator: David Halperin

Place: Tel Aviv University

Completion: 1989

Hardware: IBM PC XT

Software: custom

Analytical Software and Applications

AGO Toolset/Laine

Title: *AGO--a Toolset for Music Analysis and Generation*
Developer: Pauli Laine
Place: University of Helsinki
Musical entry code: RELAM [Relatively Timed MIDI]
Music-printing software: Personal Composer

Analytical Layers/Popovic

Title: *Analytical Layers: An Object-Oriented Approach to the Processing of Musical Structure*
Goal: to design and implement an interactive environment for analytical and compositional processing of musical structure
Investigator: Igor Popovic
Place: Yale University
Hardware: IBM PS/2; Macintosh
Musical encosing: DARMS and custom

Byrd/Morehen

Title: *The Unpublished Latin Sacred Music of William Byrd (1543-1623): A Case Study in Musical Authorship*
Scope: to determine the likely authenticity of a group of unpublished Latin motets attributed to Byrd in manuscripts of the late 16th and early 17th centuries
Investigator: John Morehen
Duration of project: 1988-1990
Place: University of Nottingham
Hardware: ICL VME 3900 series
Data-entry software: custom
Music-analysis software: FORTRAN77
Associated literature: *Byrd Studies* [Cambridge University Press, 1992]

Classical Harmony/Ferková

Title: *MUSIC--Analysis of Classical Harmony*

Scope: automatic search for known harmonical structures--chords, scales, harmonic functions--and evaluation of their harmonic-dynamic potentials

Investigator: Eva Ferková

Associates: Marian Dudek, Andrej Ferko

Duration of project: 1986-1989

Place: Slovak Academy of Science, Bratislava

Hardware: IBM PC

Software: custom

Encoding: modified ALMA

Associated literature: E. Ferková, *Some Possibilities in Computer Assisted Analysis of Melody and Tonal Harmony*, Ph.D. thesis, Bratislava 1986 [*n.b.*: the Fourier index sorting technique mentioned in 1988: 114 in connection with Ferková's work was by Lyuba Ballová]

Classification of Children's Singing Games/Osborn

Title: "A Computer-Aided Methodology for the Analysis and Classification of British-Canadian Children's Traditional Singing Games" in *Computers and the Humanities* **22** (1988), 173-82

Goal: analysis of phrase structure following Bartók's "grammatical principle" to improve music education

Investigator: F. E. Ann Osborn

Place: Lakehead University, Thunder Bay, Ontario

Chorale Harmonization/Ebcioglu

Title: "An Expert System for Harmonizing Four-part Chorales"

Goal: to develop a rule-based expert system (CHORAL) for harmonization and Schenkerian analysis of chorales in the style of J. S. Bach

Investigator: Kemal Ebcioglu

Place: Thomas J. Watson Research Center, NY
Hardware: IBM 3081-3090
Software: in Backtracking Specification Language (BSL)
Associated Literature: in *Computer Music Journal* 12/3 (1988)

Computational Theories/Camilleri
Title: *Computational Theories of Music: Theoretical and Applicative Issues*
Scope: review article concerned with relationship of computer modelling to traditional music theory
Investigator: Lelio Camilleri
Place: Florence Conservatory/CNUCE

Counterpoint Generation/Di Scipio
Title: *Contribution to the Design of an Expert System for the Automatic Generation of Tonal Multiple-Counterpoint*
Purpose: to review previous approaches to automatic counterpoint
Investigator: Agostino Di Scipio
Associated Literature: proceedings of the European Workshop on Artificial Intelligence and Music held in Genoa in June 1988

Counterpoint Generation/Frigon
Title: *Counterpoint Generation*
Goal: to create a contrapuntal generator based on musical theory from the 16th through the 18th centuries
Investigator: Chris D. Frigon
Place: Marshfield, MA
Hardware: Dell 200

Declarative Analysis/Roeder
Title: *Declarative Analysis of Non-tonal Music*
Goal: to develop non-procedural models of analytical thinking about non-tonal music
Investigator: John Roeder

Duration of project: 1985-present
Place: University of British Columbia
Hardware, operating system: Macintosh, UNIX
Encoding and analysis software: custom, in PROLOG
Associated literature: "A Declarative Model of Atonal Analysis", *Music Perception* 6/1 (1988), 21-34

Error Detection/Huron
Title: "Error Categories, Detection, and Reduction in a Musical Database" in *Computers and the Humanities* **22** (1988)
Purpose: to study the relationship between kinds of analytical processing and the effect of errors in musical encoding
Investigator: David Huron
Place: University of Nottingham, University of Waterloo
Hardware: IBM PC
Software: Humdrum Toolkit

Graphics-based Analysis/Roeder
Title: *A Graphics-based Music Analysis System*
Goal: to implement a general-purpose, interactive music analysis graphics system with search routines for identifying pitch repetitions, intervallic patterns, etc.
Investigator: John Roeder
Associate: Keith Hamel
Duration of project: 1988-1991
Place: University of British Columbia
Hardware: Macintosh
Software: custom, written in LISP and C
Associated literature: "Issues of Representation in the Analysis of Atonal Music", *Proceedings of the First Workshop on Artificial Intelligence and Music, AAAI-88*, Menlo Park: AAAI, 1988, 138-147

Hierarchical Modelling/Conklin and Witten

Title: *Hierarchical Modelling of Music*

Purpose: to consider possibilities for implementation of theory; Schenkerian analysis cannot be automated because of lack of specificity in coordination of rhythmic, melodic, and harmonic abstractions

Investigators: Darrell Conklin and Ian H. Witten

Place: University of Calgary

Meaning of Indicants/Cohen and Katz

Title: *The Meaning of Indicants not included in Standard Music Notation*

Goal: the further development of methods for assessing timbre, intonation, and intensity

Investigators: Dalia Cohen and Ruth Katz

Place: Hebrew University of Jerusalem

Hardware: Jerusalem Melograph et al.

Analysis software: ILS (signal processing software) et al.

Associated Literature: "The Performance Practice of the Rig-Veda: A Musical Expression of Excited Speech" in *Yuval* IV (1986), 292-317

Mozart Sonata Simulation/Cope

Title: *The Step by Step Computer Simulation of a Mozart Sonata*

Procedure: after MIDI entry of data, the features of two works are compared by superimposing harmonic and melodic images; form is obtained externally; a new work is created with object-tree syntax for ordering

Investigator: David Cope

Place: University of California at Santa Cruz

Music Description Interpreter/Spiegel

Title: *Music Description Interpreter*

Goal: development of a representation, model, and vocabulary for parametric, structural, relational, and procedural aspects of musical material and process, for the storage, analaysis,

transmission, and generation of music
Investigator: Laurie Spiegel
Place: New York, NY
Hardware: Macintosh (with Aztec C), Amiga 1000

Music Information Retrieval System/Pearce
Title: *A Computer Program for Music Information Retrieval*
Goal: to produce a prototype retrieval system allowing location of segments and their variants
Investigator: Alastair Pearce
Place: Birmingham Polytechnic
Completion: October 1989
Hardware: IBM PC compatibles

Music Understanding Research/Dannenberg
Title: *Music Understanding Research*
Goal: to create a computer accompaniment system that listens to live performers and provides an accompaniment in synchrony, whether the performance strictly follows a notated score or is improvised; systems for monophonic and polyphonic input are both under development
Investigator: Roger Dannenberg
Associates: Paul Allen, Joshua Bloch, Bernard Mont-Reynaud, Hal Mukaino
Place: Computer Science Dept., Carnegie Mellon University
Associated Literature: "Following an Improvisation in Real Time" in *Proceedings of the 1987 International Computer Music Conference (ICMC)* and "New Techniques for Enhanced Quality of Computer Accompaniment" in the *1988 ICMC*

MusicFile/Wilkins
Title: *MusicFile: Music Cataloguing Software*
Capabilities: searches and sorts exact performing resources for instrumental works (11 parameters)
Developer: Grover Wilkins
Place: Paris
Hardware: Macintosh

Personal Orchestra/Hawley

Title: *The Personal Orchestra*

Goal: construction of an audio research system in which a workstation controls 64 synthesizers and a computerized Bösendorfer grand piano; the piano's computer-driven performance can be accompanied by an orchestra of synthesizers; this technology involves a family of analytical programs that identify key, melodies, and other features of the music [debut performance of Liszt's *Totentanz* in October 1989]

Investigator: Michael Hawley

Place: MIT Media Lab

Hardware: Sun-3/260; IBM PC; NeXT; Apple; numerous synthesizers of various kinds

Pitch-Class Set Segmentation/Isaacson

Title: *A Localized Connectionist System for Pitch-Class Set Segmentation of Atonal Music*

Goal: to build an system that learns from one piece and applies generalizations to others

Investigator: Eric Isaacson

Place: Indiana University

Hardware: VAX 8650

Pitch-Class Sets and Relations/Forte

Title: *Pitch-Class Sets and Relations*

Goal: to provide tools for the exploration of the pitch class set paradigm in analysis of atonal music

Investigator: Allen Forte

Place: Yale University

Duration: 1986--

Hardware: IBM PC compatibles, Canon Bubble Jet

Analysis software: custom

Music-printing software: The Note Processor

Associated Literature: "New Approaches to the Linear Analysis of Music" in *Journal of the American Musicological Society* **XLI/2** (1988)

Pitch-Class Software/Dembski

Title: *Pitch-Class Software*

Goals: a) to develop a generalized step-class oriented system of pitch-classes for compositional and theoretical tasks; b) to create software for generating and analyzing arrays of sets of pitch-classes by user-defined criteria. The tonal and twelve-tone systems are regarded as eccentric special cases.

Investigator: Stephen Dembski

Associates: David Becker, Tim Keith

Duration of projects: 1) 1984-92; 2) 1986-90

Place: University of Wisconsin--Madison

Software: 1) a custom menu-driven package ("Circles") in Waltz LISP (a Franz dialect); 2) high-level languages "MDG" for data generation and "MQP" for query

Associated literature: "LISP Software for the Generation and Analysis of Pitch-Class Arrays" (Lancaster, 1988); "Steps and Skips from Content and Order: Aspects of a Generalized Step-Class" (Baltimore, 1988)

Plainsong/Harbor

Title: *Plainsong*

Scope: development of software to facilitate data entry, printing, and analysis (variants in multiple sources, re-use of melodies and melodic fragments) in plainsong

Investigator: Catherine Harbor

Associates: Steve Eaton, Andy Reid, Peter Wilton

Polymetric Perfrormance Measurement/Grieshaber

Title: *Polymetric Performance of Percussionists and Pianists*

Goal: descriptive statistics and graphics of accuracy of rhythmic performance

Investigator: Kate Grieshaber

Place: University of Washington, Seattle

Hardware: IBM PC

Representation of Scores/O'Maidin

Title: *Representation of Scores for Analysis*

Purpose: to provide a software environment for representation and analysis of musical scores

Investigator: Donncha O'Maidin

Place: Waterford Technical College

Completion: 1989

Row SuperClasses/Laprade

Title: *A Study of Row SuperClasses and their Partially Ordered Properties*

Goal: a) to create row superclasses defined by twelve-tone operators, retrogradation, and rotation; b) to identify types of rows used in certain repertories

Investigator: Paul Laprade

Duration of project: April-Oct. 1989

Place: Eastman School of Music

Hardware: Compaq

Encoding and analysis software: custom, in Turbo C

Segmentation/Camilleri

Title: *An Expert System Prototype for the Study of Musical Segmentation*

Goal: to create an analysis environment for testing the content of particular theories; rules for phrasing and phrase hierarchies based on the theories of Lerdahl and Jackendoff were tested using Schubert *Leider*

Investigator: Lelio Camilleri

Place: Florence Conservatory/CNUCE

Semantic Space Analysis/Chesnut

Title: *Semantic Space Analysis*

Goal: to trace time-lines through semantic space in representative works of classic-romantic music

Scope: a four-dimensioned system, derived from Charles Osgood's semantic differential, to categorize the affective meaning of a work

Investigator: John Chesnut
Place: Spartanburg, SC
Duration of project: 10 years
Hardware (OS): Amstrad PCW8256 (CP/M)
Associated literature: "Affective Design in Schubert's *Moment musical*, Op. 94, No. 6" in *Explorations in Music, the Arts, and Ideas*, ed. Narmour and Solie [NY: Pendragon Press, 1989]

Tonal Melody/Williams
Title: *The Computer-Aided Analysis of Tonal Melody*
Goal: development of a set of programs to perform reductive analysis on phrases of tonal melody; programs are especially useful for work with jazz
Investigator: J. Kent Williams
Place: University of North Carolina, Greensboro
Hardware: VAX/VMS
Encoding: MUSTRAN

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The preceding listing is limited to projects not previously reported or significantly changed since last reported. For information on more than 200 projects reported in previous issues, please see the indices.

The address lists given in the following pages are likewise limited to persons, agencies, and businesses mentioned in this or a recent issue.