

# What the Musician told the Score ("Frog!!!") & What the Score Said Back ("ff!!")

Exploration of Established Symbolic  
Representation Systems for the Purpose of  
Preservation of Digital Art

Megan A. Winget

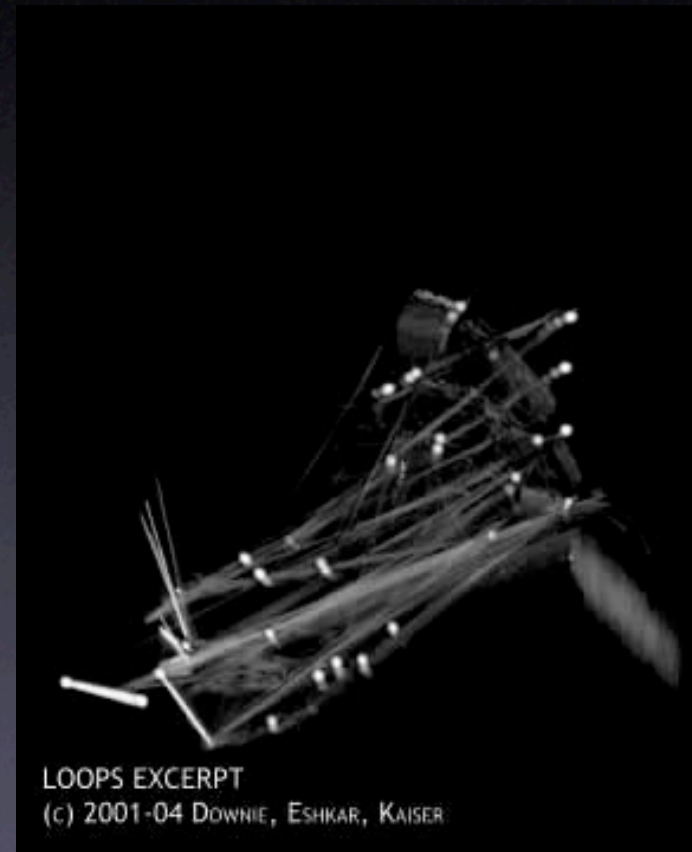
School of Information and Library Science  
University of North Carolina at Chapel Hill

# What is New Media Art?

- Multimedia (audio, images, video, text)
- (Very) Often involves data from the Internet or a Network
- Viewer often interacts with work or the work is created through interaction
- Variable & Ephemeral - performance / viewing is tied to a specific time, place, context

# Loops, 2001-04

- A Digital Portrait of Merce Cunningham by Paul Kaiser, Shelly Eshkar, and Mark Downie
- Abstract digital portrait
- Never repeats
- AI used to randomize data gathered from Cunningham



[http://www.openendedgroup.com/artworks/loops/loops\\_excerpt.mov](http://www.openendedgroup.com/artworks/loops/loops_excerpt.mov)

# Preservation Issues

- 1. Viewing Mechanisms
  - A. Hardware and Software
  - B. Programs and Algorithms
- 2. Technology Advances - Ignore?

# Goals of Research

- Discover those characteristics of a variable art work that are **constant**, and considered fundamentally important for authentic representation from the creator and performer point of view;
- Discover those characteristics of a variable art work that are essential but **not constant**, generally considered to be open to interpretation on the part of the creator, performer or artistic director;
- Discover those characteristics that are not essential to a work's authentic performance.
- Determine the **methods** by which artists, in practice, communicate these important or variable characteristics among themselves across time and space in order to achieve reliable performances or representations of the original;

# Nelson Goodman - Languages of Art

- Representation
- Authenticity
- Notational Forms
  - Autographic vs. Allographic
  - Single vs. Multiple

# Let's Talk About MANS

- Media Art Notation System - Richard Rinehart, Berkeley, 2004
- Supposed to be a notation system for new media works
- More of a metadata framework or ontology for the description of the works.

# Interpretative Method

- Existing Models
  - Music
  - Drama
  - Dance
- Similarities with New Media Art
  - Performance-Based
  - Not Forgeable
  - Allographic & Multiple

# Focus on Music

- Unity of Artistic Vision: artists using multiple instruments - in the case of composers, and libraries, data sources, etc. in the case of programmers, in a very specific way to achieve one end result
- Dense, symbolic notational language (Not true for drama, which uses language)
- Existence of tools (instruments / computers) essential for performance (Not necessarily true for dance, which uses people)

# Musical Scores

- Score is primary means by which information is transferred from one generation of musicians to another.
- By observing rehearsal processes, and annotated scores, can formulate some hypotheses regarding “important” and / or difficult parts of a piece.
- Hope is to transfer some of those findings to similar, variable art form - new media art.

# Methods of Research

- Qualitative, Intensive Research
- Ethnography of Communication Model
- Annotation Studies

# Process

- 1. Collect data from musicians - rehearsal observations, interviews, and annotated scores. Annotate the annotated scores.
- 2. Generate hypotheses based on annotations.
- 3. Formulate Notation Framework for New Media Art
- 4. Test framework / hypotheses with artists / curators / archivists

# Musician Community

Amateur Composer	Pre-Professional Composer	Professional Composer
Amateur Conductor	Pre-Professional Conductor	Professional Conductor
Amateur Musician (NO Conductor)	Pre-Professional Musician (NO Conductor)	Professional Musician (NO Conductor)
Amateur Musician (With Conductor)	Pre-Professional Musician (With Conductor)	Professional Musician (With Conductor)

Blue - Score and Interviews

Green = Contacted

# Annotation Framework

- Textual & Symbolic

**Rhythm:** “don’t rush!” “WAIT” / accent marks either above or below staff

**Emotive / Mood:** “heroic” “vivace” / happy face

**Technical:** “less bow!!!” “FROG” / bowing instructions “V” or “□”

**Dynamics:** “not too loud” / “<” (crescendo); “>” (decrescendo)...

**Articulation:** “dit” “dat” / ties and slurs...

**Attentive:** “Andrea!” “Listen to cello!” / stars, glasses, circles

- Numerical

**Technical:** Fingering Instructions, Tempo

**Structural:** Bar numbers

Handwritten musical score for Viola, Opus 18, No. 3 by Beethoven. The score is in bass clef with a key signature of one sharp (F#). It consists of five staves of music with various dynamics and performance markings.

Staff 1 (Measures 43-48):  
43 *sf sf sf sf (sf sf)*  
Handwritten: *V n character!*

Staff 2 (Measures 49-57):  
49 *sf sf sf (fp) cresc. p*  
Handwritten: *whole bow!*

Staff 3 (Measures 58-67):  
58 *deresc. pp cresc.*  
Handwritten: *V V V V V*

Staff 4 (Measures 68-75):  
68 *p sf sf sf sf*  
Handwritten: *sh!*

Staff 5 (Measures 76-80):  
76 *f*  
Handwritten: *folklore hey! V*

Beethoven, Opus 18, No. 3. Viola

Violine I

1 don't accent

2 MAX

3 NOT RUSH!

4

5 sf rillo! KEEP

6

7 no accent

8 let down

The image shows a musical score for Violine I with eight numbered annotations in pink boxes. Annotation 1: 'don't accent' with an arrow pointing to a note. Annotation 2: 'MAX' with a horizontal line underneath. Annotation 3: 'NOT RUSH!' with a wavy line indicating a tempo change. Annotation 4: A box containing a wavy line and the dynamic marking 'ff'. Annotation 5: 'sf rillo!' and 'KEEP' with arrows pointing to notes. Annotation 6: A box containing a wavy line. Annotation 7: 'no accent' with an arrow pointing to a note. Annotation 8: 'let down' with an arrow pointing to a note.

## Pre-Professional, No Conductor

1. text: rhythm; 2. text: dynamics; 3. text: rhythm; 4. symbol: dynamics; 5. text: attentive; 6. text: technical (bowing); 7. text: rhythm; 8. text: technical (bowing)]

# Annotation Methodology

- Analyze annotated scores, looking for *n-way consensus*, seeing if there are any “important” or consistently documented sections of the musical work

**Normalization:** at the basic unit of annotation (bar)

**Recording:** all instances of annotations; where, what kind

**Counting:** providing percentage counts for units annotated

**Consensus analysis:** how often annotators concur on selections  
Semi-structured interviews with selected orchestra members to discuss annotative styles.

# Initial Findings:

- Composer vs. Performer Annotations
- Presence of a Conductor
- Different Skill Levels

# Conclusions & Concerns

- Is this two dissertations? Any ideas on how to make this project more tractable?

Questions???