



# InterPARES 2 Project

International Research on Permanent Authentic Records in Electronic Systems

## Overview

### Case Study 15: *Waking Dream*

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#### **The Creator Context / Activity**

Creator: The Human Communication Technologies Laboratory (HCT) of the Department of Electrical and Computer Engineering, University of British Columbia. In particular, the creation involves three individuals—Dr. Sidney Fels, Baerbel Neubauer and Sachiyo Takahashi—whose roles are described in the Partnership section, below.

Creator type: Artistic focus, Mixed sphere (university research groups & laboratory). The creator can be considered a mixed creating body because of its particular context.

Juridical context: Pertinent Canadian legislation includes the *Copyright Act*, the *Universities Act* and the *Freedom of Information and Protection of Privacy Act*. Methodologies and norms related to electrical and computer engineering also apply to the HCT. Permission to reproduce *Waking Dream* would require approval of all three individuals involved.

Activity: *Waking Dream* is a multimedia performance art piece involving dance/movement, a soundtrack and both live and pre-recorded video, as well as remote-controlled interactions between performers and various digital and analog technologies. It is designed for two people to perform, exploring the moment of coexistence between two illusory states, awake and dream.

During a performance, the audience sits in complete darkness watching the movements of two dancers and a large suspended screen onto which video and still images are projected. Three video sources are used: one contains pre-recorded imagery, another captures the movements of the dancer as she climbs down a flight of stairs and a third is connected to a head-mounted camera/display that the dancer wears. This headpiece broadcasts live footage onto the projection screen and onto a small display affixed to its interior. This allows the dancer, who is moving about in darkness, to “see” where she is going. Infrared lighting is used to enable the capture and transmission of live video images while also keeping the performers and audience in darkness. The dancer is able to control what the audience sees on the screen by using a remote control device that opens/closes a dowsers on the video projector. A person backstage

can also manipulate the audience's visual experience by alternating between the three video sources and a still image embedded in a PowerPoint file.

This activity is a new artistic expression.

### **Nature of Partnership**

"*Waking Dream* was created through the collaborative efforts of three people." (FR 1) "Although responsibilities have tended to be collaborative, the creators have divided themselves according to their various technical skills and areas of interest." (FR 6)

The three collaborators/creators are:

1. Dr. Sidney Fels (UBC Dept. of Electrical and Computer Engineering): wrote the program code, created the Web site and is responsible for "much of the intellectual rationale behind the piece." (FR 1)
2. Baerbel Neubauer: created/edited the pre-recorded video footage and sound samples
3. Sachiyo Takahashi: used the sound samples to create various versions of the soundtrack, created the choreography and performed the dance movements.

These three are considered to be the creators of *Waking Dream*. In addition to them, students in the Electrical and Computer Engineering Department may have worked on research for the program coding as part of their coursework.

The HCT is funded by industry (Nissan Research of America), government (National Sciences and Engineering Research Council of Canada) and the university (the Peter Wall Institute for Advanced Studies).

### **Bureaucratic/Organizational Structure**

The HCT laboratory is a body within the Department of Electrical and Computer Engineering at the University of British Columbia. Three faculty members are associated with the HCT. One post-doctoral fellow and many masters students assist in the laboratory.

### **Digital Entities Studied**

The performance is a born-digital form that is a new type of artistic expression. Digital entities consist of:

- Program code (Written in a version of Visual Basic Project Manager developed to run on Windows 98. Changes with each projector.)
- AVI video file (pre-recorded and edited)
- Audio soundtrack
- Original sound samples from which the soundtrack was recorded
- PowerPoint file (allows switching of video source, changing what the audience sees)

### **Documentary Practices Observed**

#### Records Creation and Maintenance

Although there is no formal, documented **system** for the creation of the records in this case study, there is a sort of "script" for re-creating the performance. Professor Fels keeps (paper) performance notebooks that detail lighting and basic choreographic schemas. He also has

detailed explanations of the technical workings of the piece as well as the intellectual rationale and thematic descriptions of *Waking Dream* that were written as part of the grant application process. These documents constitute the best available explanations of the piece and may be able to be used to re-create it.<sup>1</sup> However, there are some unique aspects of the digital entities that may be difficult or impossible to duplicate. “They have evolved over time and are occasionally the result of accident ([such as] the snowy effect seen in one of the video documents).” (FR 4)

“The digital entities are **uniquely identified** with file names and, when changes have been made, with version numbers.” (FR 4) “No **metadata** are consciously captured.” (FR 7)

“The digital entities are **organized** to reflect the creation process.” (FR 7) They are kept in three separate directories: (1) a Program directory, which manages the program code base; (2) a Video directory, containing video footage and (3) a Sound directory, holding the original sound samples from which the soundtrack was composed. Professor Fels’ computer also has two directories of textual records: Funding and Publications. The Funding directory contains the above-mentioned documents that were written as part of the grant application process. The Publications directory contains a variety of documents associated with the production, such as programs for the various performances.

The program code **changes** with each new projector, although it is not clear how these changes are recorded. The soundtrack is a component of the performance and can be modified using ProTools.

Various **versions** of the soundtrack have been created by Sachiyo Takahashi.

#### Recordkeeping and Preservation

There is no records management or archives **program**. “The digital entities are kept in simple directories and are not entered in any sophisticated record keeping system.” (FR 6) Records are stored in the various computers of the several parties involved in the HCT, described as a “distributed model.”

No person is formally responsible for preservation, and as such there are no **preservation strategies**. Administrative records are preserved as required by their creators. In terms of preservation **practices**, only the program code has been considered, and the method of preservation has been to make frequent **backup** copies. “The digital aspects of *Waking Dream* are simply preserved with backup copies.” (FR 7)

Some records are **stored** by the HCT, while others are retained by individual team members. The records that are retained by the creator may be uploaded to the laboratory’s restricted Web site, which is used as a repository for some of the fonds. The grant and funding applications, notebooks containing performance notes and the program code are kept on Professor Fels’ laptop computer, on a backup computer and in off-site storage. Sachiyo Takahashi, the dancer, keeps all other material (audio and video files) on the hard drive of her computer, even though it was

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<sup>1</sup> The *Domain 1 Questions* for this case study state that “In order for *Waking Dream* to be re-created by other performers, a document will have to be created that describes the characteristics of each of the components and explains how they work together.” (p. 3) This must have been written before the final report (which includes the preceding information) was written.

Baerbel Neubauer who created the video footage and original sound samples. The finished version of the soundtrack is burned onto an audio CD.

Professor Fels uses **re-coding** or re-implementation of interactive elements into the work to attempt to avoid technological **obsolescence** and reduce hardware dependence. However, re-coding has become problematic with the increasing obsolescence of Windows 98, the environment in which the code was originally written. “The audio and video aspects of the piece have not needed to be changed yet, but will eventually be transcoded, or changed from one format to another.” (FR 7) This can be seen as a form of **migration**.

### **Accuracy, Authenticity and Reliability**

“No real measures are taken to ensure the quality, reliability and authenticity of the digital entities because they tend to be changed with each performance.” (FR 5)

#### Accuracy

Not addressed in the available documentation beyond the above statement.

#### Authenticity

“Due to the obsolescence of the program code written for this piece and to the fact that no records of the performance exist in any form, there are currently no means of preserving the authenticity of *Waking Dream* as an intellectual work or of staging an accurate reproduction of it by outside performers/producers.” (FR 1)

For this piece, as with many forms of artistic expression, authenticity is the equivalent of faithfully producing or reproducing the work. In this respect, there is some concern for the authenticity of *Waking Dream*. “Professor Fels worries that [the digital entities] may be altered by future producers of *Waking Dream* to an extent that they will no longer be recognizable as his and his co-authors’ intellectual property.” (FR 5)

#### Reliability

Not addressed in the available documentation.