The Song Remains … The Same? Three Case Studies of Issues of Digital Preservation in Second Life Performance Practices

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I. Conceptual Differences Across Disciplines: Needs & Approaches

The practice of documentation of performances such as music, theater, and dance and performance art is an integral part of the cultural record. As such, it is subject to change and evolution over time, as well as the vagaries of natural catastrophe, social disorder, or any of the myriad disrupters of human history. The application of the practice of documentation varies according to the discipline utilizing it; indeed, even its efficacy varies from culture to culture and from discipline to discipline. Couple this with our movement deeper and deeper into the use of digital technology for the manifestation of culture and we must grapple with new solutions for capturing and conveying the essentials of these acts of expression.

The emergence of performance and installation art in the 20th century gave rise to a field of critical theory somewhat at odds with other approaches of documentation, couched as it was in the visual arts. While aspects of theater and dance have influenced this critical theory, the performance practice considerations of music have not played as much a role in defining it. Indeed, considerable discussion has been generated, over understanding just what comprises “documentation”, whether photography is ‘documentary’ or ‘theatrical’, or if it is a ‘conceptual medium for documentation’ (Taylor, 2009). This reflects a concern for the “visual” aspect of “performance” art as opposed to the temporal aspects so inherent in both music and dance. Photography is but one of the tools being discussed as a documentation tool, and perhaps that is the cause of much of the concern. The media we choose to provide us with a cultural record of veracity has changed over time and photography has been recognized to be just as plastic and manipulated in its representations of ‘Truth’ as painting, drawing, or sculpture that were previously used. Even film and video are seen to be suspect when it comes to their ability to convey veracity. There is no single “truth” but rather a multitude of “truths” to be found in documenting the world around us and are discoverable often by a process of triangulation and verification of sources.

Additionally, other disciplines have sought to develop theories of the documentation of performance practice, with regards to cultural heritage, in still differing manners. For example, the social sciences have benefited from the application of technologies such as digital video and audio for capturing non-material aspects of culture and the use of the same tools has been embraced in dance, music, and, increasingly, temporally-based installation art. There now exists the study of digital ethnography, as anthropologists

recognize the efficacy of the tools for fieldwork.

Because performance-practice and performance documentation can be seen to be among the means of preservation of cultural heritage, it is imperative to look across disciplines, and cultures, to develop effective techniques for capturing, in its digital manifestations. Performance art, by its very nature, is often ephemeral. Like music, it is temporal, though equally like dance and theater, it is distinctly spatial. These distinctions are critical in understanding the essential parameters that must be addressed. As artists avail themselves of digital technologies and environments to create new works, the methodologies of documenting those works increasingly must utilize these same technologies and environments.

The arts can be conceived in several ways: as being visual, sonic, and dynamic in nature. Of course, all manner of permutations and combinations exist. For this discussion, it will be useful to consider the following as being fundamental descriptors:

1. Art that exists primarily in space (either physical or virtual) and displays characteristics of dimensionality

2. Art that exists primarily in time such as music or filmic (including those electronic in nature such as video, both analog and digital)

3. Those that are embodied in both time and space such as dance, theater, and other movement arts.

How we approach documenting this variety will require an equally diverse set of tools. The long-term preservation of these creations will also require a flexibility of approach. Several institutions have undertaken research in this area. Most notably, the Guggenheim Museum's Variable Media Initiative and the Electronic Arts Intermix have been involved in examining how best to preserve works of art that have been instrumental in stretching the boundaries of our concepts of "new art." Explicit in these approaches, especially those of the Variable Media Initiative, is placing the work in a context that preserves the work's essential meaning.

From the Guggenheim VMI website (http://www.guggenheim.org/new-york/collections/conservation/conservation-projects/variable-media, accessed 2010):

> The Variable Media approach integrates the analysis of materials with the definition of an artwork independently from its medium, allowing the work to be translated once its current medium becomes obsolete. By identifying the work's behaviors (contained, installed, performed, reproduced, etc.) and strategies (storage, emulation, migration, and reinterpretation), artists, conservators, and curators can advance the preservation of new-media art.
>
> The idea to describe a work of art, not only as a list of components and

> materials, but by the way it behaves, is crucial to the Variable Media methodology. The behaviors are not permanent or fixed, but they give conservators and curators guidelines for discussing the more ephemeral qualities of a work of art. To say that an artwork must be installed implies that its physical installation is more complex than simply hanging it on a nail. Are its dimensions fixed? Should it occupy the space alone? These questions cannot simply be recorded by a set dimension or simply "dimensions variable" in a collections management system. Does the work have a performative element—not simply in the traditional notion of dance, music, theater, and performance art, but also for a work in which the process of creation is as important as the product? A medium is reproduced if any copy of the original master of the artwork results in a loss of quality. Such media include analog photography, film, audio, and video. Alternately, if a work is duplicated, it is implied that a copy could not be distinguished from the original by an independent observer—applying not only to artifacts that can be perfectly cloned, as in digital media, but also to artifacts comprising ready-made, industrially fabricated or mass-produced components, including computer hardware or playback devices.

One point of note is the issue of creating copies, as it acknowledges both the digital and the analog formats, in terms of duplication versus reproduction and an inherent change in distinguishability. As rightly pointed out above, the emergence of digital and digitally-based works raises issues of the difficulty of veracity.

II. Some Western Historical Perspectives and Examples

While there exist historical traditions outside of Western art of documentation of temporal-spatial arts, they are beyond the scope of this discussion. The West has been especially aggressive in pursuing the application of digital technology to both the creation and performance practice of all the arts and, as such, this discussion is focused on a finite environment where this is playing out in a global setting, specifically within virtual realities and Second Life in particular.

By contrast, one of the earliest examples of performance documentation is in the analog form of the 1589 publication, "Orchésographie" of Jehan Tabourot, a French cleric who published this social dance primer under the pseudonym 'Thoinot Arbeau.' The primer is presented as a dialogue between Capriol and his teacher, Arbeau. It is, itself, a rich source of information about the social etiquette and sociology of France at the time, but it is also one of the earliest attempts to visually depict and link the movement of a dancer directly to the music of a given dance. Tabourot presents us with a diagrammatic connection to the actual music, providing a spatial connection (the dance movement) to the temporal phenomena (the actual notes to be played in the music).

ſus,auſſi les quatre danceurs continuent de dancer les meſmes mouuements,ſoit en cheminant quand ils font les rondes,ſoit en s'arreſtant quand ils font leurs batteries.

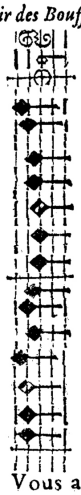
Capriol.

Les mouuements ſont-ils faſcheux a faire?

Arbeau.

Vous les treuuerez tresfaciles,comme il appert en la tabulature cy deſſoubz,qui ſe dance par meſure binaire legiere.

Air des Bouffons. *Mouuements pour les dancer.*



greue gaulche.
pied en l'air droit.
pied en l'air gaulche.
greue droicte.
pied en l'air gaulche.
pied en l'air droit.
greue gaulche.
pied en l'air droit.
pied en l'air gaulche.
greue droicte.
pied en l'air gaulche.
pied en l'air droit.

Tant que la dance dure, iuſques a ce que tout ſoit fait & finy, il ny a point d'aultres mouuemẽts, q̃ les greues qui emportent chacune deux minimes noires. & deux pieds en l'air qui emportent chacun vne minime noire.

Vous auez les pas & mouuements des bouffons,apprenez maintenant les geſtes que l'on y fait és paſſages des batteries, leſquelles il fauldra faire immediatement aprez les rondes,& vous ſouuiendrez qu'à la fin d'vn paſſage,il fault faire vne ronde le pied gaulche en dehors, puis la renuerſer & retrograder

("Orchesographie" from http://imslp.org/wiki/Orch%C3%A9sographie_%28Arbeau,_Thoinot%29, acccessed 4 February, 2011)

Note how the preceding reproduction from "Orchésographie" illustrates the body movements in text on the right (ex.,"pied en l'air droit") and the associated musical staff with the notes of the "Air des Bouffons" running up along the left of the page. Along with these text and musical staff notations numerous illustrations of the dancing figures themselves are included, giving an even-more visual explication.

This linkage is explicitly made by providing a description of the dancer's body movement to be made, as can be seen by the following additional illustration describing the placement and location of the leg being crossed and the foot raised:

ſtant on met l'aultre pied en l'air deuant la greue, & ſe faict en deux ſortes: çauoir quand le pied gaulche ſouſtient le corps, & le droict eſt croiſé en l'air deuant ledit gaulche, & s'appelle pied croiſé droict: Et au cõtraire quand le pied droict ſouſtient le corps du danceur, & le pied gaulche eſt croiſé en l'air deuant la greue dudit pied droict, & s'appelle pied croiſé gaulche.

Pied croiſé droict. Pied croiſé gaulche.

Capriol.

Voila deſia de pluſieurs ſortes de geſtes & mouuements.

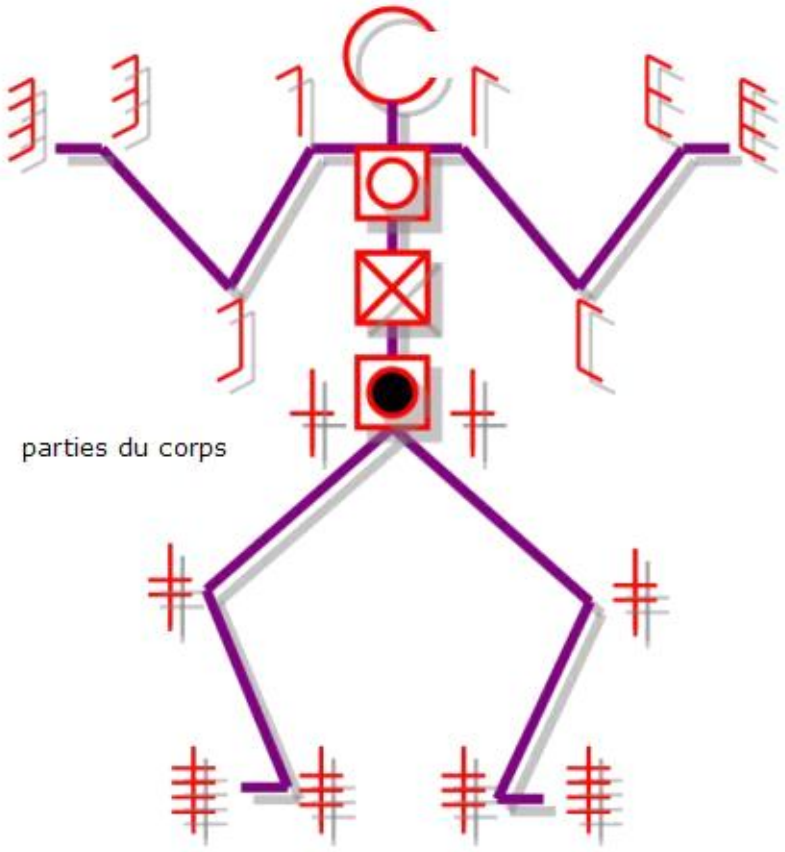
Arbeau.

Il vous tarde (à ce que ie peulx cognoiſtre) que vous commẽciez a faire les cinq pas, mais il ny a remede, il fault que vous ayez patience d'eſcouter comme ſont faicts tous les mouuements: Car vous ſçauez qu'ẽ l'art de grammaire, le diſciple faict premierement amas de noms verbes & aultres parties de l'oraiſon, puis il apprend à les lier enſemble congruement. Ainſi en l'art de dancer, il vous fault premieremẽt ſçauoir pluſieurs particuliers mouuements, puis par le moyen des compoſitiõs que l'on vous donnera par la tabulature, ſçaurez le tout.

("Orchesographie" from http://imslp.org/wiki/Orch%C3%A9sographie_%28Arbeau,_Thoinot%29, acccessed 4 February, 2011)

While admittedly not "precise", it is strikingly successful through its simplicity. Though the temporal documentation is relative (we simply do not know the precise tempos at which these musical pieces would be performed), the spatial documentation is sufficient to allow performance of both the dance and the music (there are other clues extant, both in the text of the "Orchésographie" and other extant contemporary texts that spell out the manner in which a galliard or tourdion is to be performed, to provide us with reasonably reliable guidance).

Jumping ahead by over 300 years, we are still confronted by the two dimensional documentation of the body moving through three-dimensional space. Specifically, we see in the work of Rudolf von Laban a continuation of the effort to set down, on paper, how to document a dancer's movements. Interestingly, the movements are now divorced from the potentially temporal documentation of providing a musical score along with the depiction of the movements.



(From http://en.wikipedia.org/wiki/Laban_Movement_Analysis, accessed 4 February 2011)

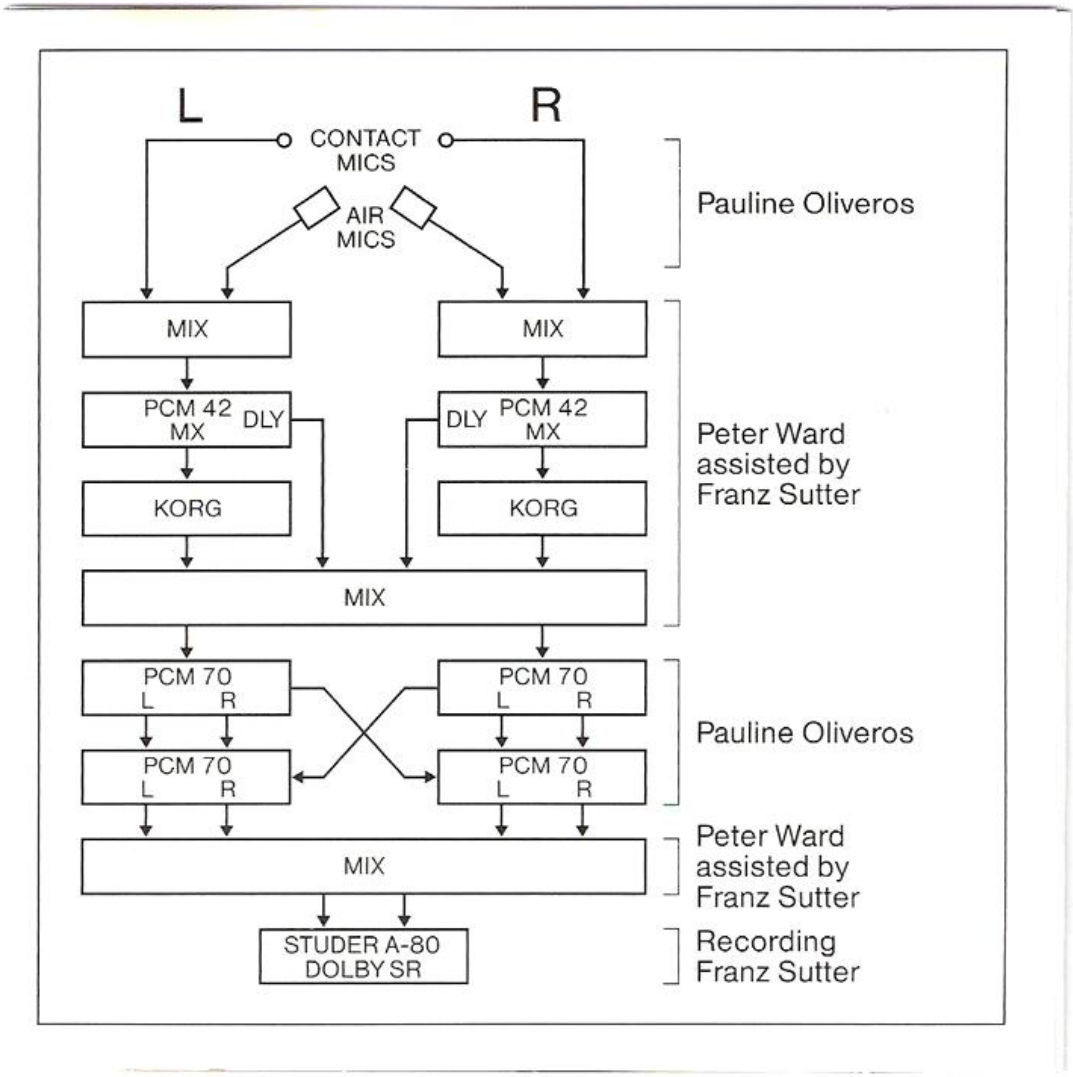
Laban was the founder of the Choreographic Institute in Zürich in 1915 before going on to publish his “Kinetographie Laban” in 1928. This led to the development of the dance notation system known as “Labanotation” that is still in use today, though other such systems have evolved, and continue to evolve. Laban was very much focused upon “placing” the body in three-dimensional space and his system has no direct correlation to the temporal dimension that Tabourot provided three hundred years earlier. His system of notation was very much focused on the “kinetics” or the pure motion of dance, without respect to the external rhythm of the oft-associated music.

What had changed in the ensuing time span? From where did this divide between the temporal and spatial develop? Looking at the history of Western dance, music, and visual art, a critical attitude could be seen to be developing. The early decades of the 20th century gave rise to considerable examination of ideas of “movement”, “body”, and “space.” Dance had begun to be seen as a study of movement alone, free of the rhythm provided by music. Some of this shift of focus was coming out of the sciences as well, as we can see how our concepts of the known Universe were also being heavily scrutinized at this time. The three hundred years that passed had seen several different world views come and go, as a part of an ongoing process.

The velocity of those changes has not slowed, by any measure, and we are now deep into a revolution of a “digital” nature, one that evolved from the “electronic” one of the previous century. As the nature of our culture gradually

assumed elements of that which the wide-scale embrace of the use of electricity had made possible, the means of cultural production and documentation reflected those changes.

The application of analog electronics to the production of music is a case in point. Below is a performance schematic for a musical composition entitled "The Roots of the Moment" by Pauline Oliveros, from 1987-1988.



(By permission of Pauline Oliveras, 2011)

What we are looking at is not a musical score. It contains, in fact, no reference whatsoever to the idea of the notation of music. What it does represent is the routing of the audio signal of the sounds to be made by the accordion that Ms. Oliveros would be playing in the performance of the piece. Indications of which signal processors being used, who would be controlling their parameters, and how they would be mixed for the listener/audience are all that are indicated. That Ms. Oliveros has a significant reputation as a musical improviser suggests that there might not be what we would normally think of as a "score", i.e. an actual notation of what would be played. But that

is implied and not explicit information about the composition itself.

Instead, we have documentation of a performance process but not of the performance itself. This process raises questions about the intentionality behind the performance, especially given the improvisational dimension, and so this seeming fragment may achieve a greater significance than is immediately apparent. We can see, for example, that there will be a certain "ambiance" present in the sound, as microphones are being used that will be mixed with the audio signal coming from the (unspecified) accordion that Ms. Oliveros played.

Looking back to the VMI and Electronic Arts Intermix initiatives, this makes sense as it is providing a greater context for the piece. As we move into the digital realm, we see an increasing amount of this kind of ancillary documentation becoming increasingly necessary.

The emergence of digitally based, virtual environments for cultural heritage is the result of the evolution of the technologies previously available. Where analog video and audio installations were once considered to be "new media" we now acknowledge that websites or even the very computer code itself and its instantiations as being the basis of new art. How then to proceed in documenting, much less preserving, such creations? And when these creations occur not in a gallery, but in the artificial construct of a proprietary virtual world, how then do we ensure their longevity (or, even if we should)? What follows are three case studies drawn from the proprietary virtual world, Second Life, and a discussion of suggested approaches for preserving them through documentation. In each example, it is clear that prior approaches are lacking and we must look more broadly at how to document and preserve the works.

III. Specifics of Virtual World Performance Documentation and Requirements

The following examples display the range of challenges to documenting art and performance inside the specific virtual environment of Second Life. Second Life (SL) is the free virtual environment created by the Linden Labs and is heavily dependent upon the efforts of its users for content. Both visual artists and musical performers been drawn to it for its possibilities. The issues surrounding the long-term preservation of the rich collaborations that appear there are beyond the scope of this discussion, though still relevant to the question of methodologies and techniques being considered here (Moser, 2009).

The first example is that of a solo musical performer. The avatar AldoManutio Abruzzo performs regularly in Second Life and has been involved in both performances and sound art installations there since 2006. Recordings of his performances are available through "real life"(RL) channels such as iTunes, Rhapsody, and others. While some SL performers are reticent about revealing their RL identities, Aldo is quite open and actively promotes his music in both environments, referring to his SL performances as being

“blended realities.” In 2010, a monthly series of performances was undertaken in SL to celebrate the full moon.

The performances are minimal in their requirements of the users: the default settings of the SL software client are adequate to enjoy them. The audio is streamed into the virtual environment utilizing the same technology and software as a webcast. Additionally, each performance is recorded at CD-quality and these are usually available for free download in a high-resolution MP3 format shortly after each performance. In the case of the full moon performances, these are released through a netlabel:

http://justnotnormal.wordpress.com/full-moon-concerts/
(accessed September, 2010)

If it were necessary to provide a fuller “record” of the performance, simple machinima capture would be sufficient for the visual components. This is by design: the performances are intentionally kept simple in terms of end-user requirement and the focus is on the live performance of the music, not on elaborate stage settings or visual displays to accompany the music. A machinima, excerpting one of the concerts:

http://angrek.com/PAPERS/DRHA2KX/01_ALDOvideo2.mov
(544 MB QuickTime file, accessed September, 2010)

But as was foreshadowed in the Oliveros documentation example previously, there are considerable “performative” aspects that are addressed neither by the audio recording nor the visual recording. An audio signal flow would be of significant value to future understanding of just how some of the performed musical effects were achieved. This would require the performer to provide documentation of the studio set-up, a task that would be non-trivial if being done on a regular basis. It is, in fact, a somewhat onerous task when one considers the logistics of the overall experience. The musician resides in the United States, there are local US servers, but the aggregating server is in Germany; the audience is global. How, then, to coordinate the necessary activities across languages, time zones, and expectations? And should we be concerned with it, if the performer is clear about the intention of the performance?

The second example, The Gallery of Musical Sculptures (GoMS), is more complex, bridging the temporal and spatial arts. SL has been the site of some vibrant and groundbreaking activity, allowing artists to create works that, quite literally, are “impossible in real life.” Because the SL experience is posited in the idea that it is “virtually” like real life but not the same, we accept the physics that allow our avatars to fly and a myriad of other phenomena. RL musicians Tim RIsher and Claus Gahrn have created a virtual gallery containing sculptures that make use of some of the possibilities that SL offers. The sculptures are created by artists and musicians specifically for the gallery.

The experience one has in the GoMS is intensely personal while being highly

interactive. The gallery itself is a “public” location (some locations in SL are restricted according to various criteria). The user guides their avatar about the gallery, sometimes triggering audio from the sculptures by the proximity of the avatar, with others triggering the audio by the avatar’s direct interaction with the sculpture such as “touching” or simply walking through the sculpture.

The audio for the sculptures is stored on SL servers, owned by the Linden Labs. Accessing this for the purposes of preservation are problematic, as Linden Labs are explicit about the content within SL staying within SL and securing permissions for preservation copies from the rights holders has been an equally unsatisfying experience. This and other related issues have been problematic on a number of levels. These issues have been discussed elsewhere in other venues and are nowhere near being resolved (see Moser, 2009a; Moser, 2009b; McDonough et alia, 2010).

The same issues apply for the visual material found there, as well. Often the work is a collaborative effort between two individuals, a visual artist and an audio artist; this means, that unless prior arrangements have been made, both parties must agree to the preservation efforts. While daunting, these issues can be anticipated and agreements made as to long-term preservation of the creations. But such agreements must be in place to have any effect and all too often are not made. What remains are the mechanical, or procedural, steps to be taken to ensure adequate documentation will take place for preservation.

Because of the individuality of the interactive experience, the combined audio and visual components of the objects, and the experiential aspects of the combined effect of all the works assembled, no one modality is adequate. This is an example that cries out for something closer to the “game” approach that the Preserving Virtual Worlds project attempted to pursue (McDonough et alia, 2010; Lowood 2007**)**. Screen shots do convey a minimum of the “look and feel” of the installation, but little more than that.

http://angrek.com/PAPERS/DRHA2KX/GallMusSculpt.mov
(22 MB QuickTime File, accessed September, 2010)

As can be seen in the preceding URL, a machinima would certainly be capable of capturing an individual’s experience of the installation (and it IS an installation of multiple objects), but could not capture the highly idiosyncratic aspects of seeing the installation in different ways, without a tremendous duplication of effort. At best, it would only be a “time slice” that captured the installation at a given time and state.

Such an approach is better than not documenting the works at all and should certainly be considered as part of an over all strategy that perhaps includes actual emulation or platform migration for the content (again, the VMI strategy is strongly suggested). Such a strategy for the installation’s preservation would then be, of necessity, part of a larger digital asset preservation strategy. This latter is a approach that we are all increasingly facing.

The final example is even more complex than the previous two, as it combines many of the same elements as the preceding, but in a real-time performance situation. Perhaps a good description for this is a “mixed reality, multi-modal, interactive live performance” though it is certain that the description will continue to evolve in the future.

The Avatar Orchestra Metaverse is an international collaboration of composers, musicians, and visual artists who have been working together in Second Life since 2007. Their website describes them thusly:

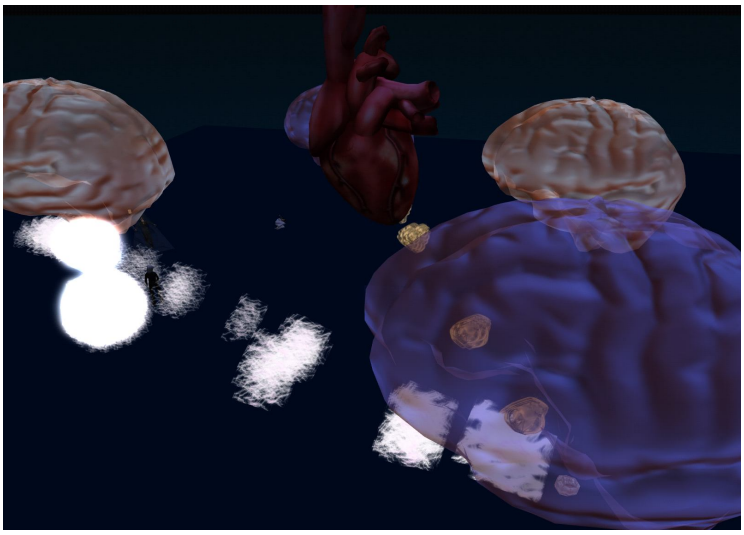
> The Avatar Orchestra Metaverse is a global collaboration of composers, artists and musicians that approaches the virtual reality platform Second Life as an instrument itself. The Orchestra conceives, designs and builds its own virtual instruments, making it possible for each individual performer in the Orchestra to trigger sounds independent from one another and to play together in real time. These instruments feature sound, visuals, and animations. A performance of a jumping, hovering, floating, dancing, and twirling Avatar Orchestra Metaverse is a truly spectacular event. (http://avatarorchestra.blogspot.com/ accessed, 2010)

Several key features in that description are important to the discussion at hand. Firstly, the instruments used are all created in SL and all audio originates from there. Secondly, there are highly dynamic and visual components to each performance, i.e., the avatars’ movements are often highly choreographed. Thirdly, the instruments are also designed so as to be interactive with other members of the ensemble.

As may have been gathered, the SL client is a fairly sophisticated application and the software is capable of significant customization in its settings. The AOM takes full advantage of this customization and often, “for the maximum enjoyment” suggest that the end-user make significant changes to the default settings of the client. This can be seen as a potential barrier to widespread appreciation of an AOM event, though it is not impossible to do so. It does raise the issue of ensuring that this technical data be collected as a part of the performance documentation. Performances are often “limited” so the amount of communicating this information may be limited, though still very necessary. There is also the further complication that the Linden Labs often make changes or updates to the client software and so anticipated behaviors are often affected. This may even happen with little or no warning on the part of Linden Labs.

For this discussion, the focus is on both the AOM rehearsals leading to the performance of “Rotating Brains/Beating Heart” at the Digital Resources for the Humanities and Arts Conference that was held at Brunel University, 5-8 September 2010 and that premiere performance. This piece was a collaboration between Stelarc, Pauline Oliveros, Franziska Schroeder and the Avatar Orchestra Metaverse, literally spanning the globe, multiple “realities,” and multiple time zones. The following still shot and machinima only partly convey the complex communication between the members of the

AOM during the rehearsal period prior to the September performance:



(Courtesy of the author, personal screen capture, 2010)

The machinima, linked below, provides a bit more context. This was shot without the adjustments to the SL client, so it does not reflect the actual visual appearance of the final environment. This is itself a part of the difficulty in documenting how the piece evolved, as there were changes to these parameters right up until before the final performance:

http://angrek.com/PAPERS/DRHA2KX/27AUG_003.mov
(accessed, 2010, 1.4 MB QuickTime file)

This is a limited visual documentation of what was taking place in rehearsals; email transcripts, and additional rehearsals to address the use of the inworld instruments by smaller ensembles of performers were also a significant part of the preparation. Likewise, there was considerable discussion between the scripters and artists developing the instruments and devices to control avatar movements. As can be seen in the video shot at Brunel on the night of the performance, the “real world” aspect was equally daunting, as the performances of Franziska Schroeder and Martin Parker were highly improvisational and there are no notes available as to the various performance parameters they were employing or any of the planning discussions between them. Additionally, the preparatory work that was done by STELARC is not available.

The video, as shot from the audience by Yael Gilk (avatar Fau Ferdinand) and edited by Steve Millar (avatar Arahan Claveau):

http://vimeo.com/15426324 (accessed September, 2010)

The preceding video and machinima do show the SL client having been adjusted to the “preferred” visual environmental settings and does capture the combined audio of the sound coming out of SL and the sound being produced by Schroeder and Parker in the auditorium. A straightforward

machinima would only have captured the visuals and audio from within SL; while this would very be much integral to a complete documentation of the event, it fails to capture the equally important real world component of the performance. Likewise, transcripts of the instant messaging and Chat sessions from within SL between all the members of the AOM and support personnel would be needed to flesh out the details of just how the piece was actually executed on the night of the performance.

IV. Closing Thoughts and Considerations

The so-called “new media” presents tremendous challenges, not only technical, but social challenges as well if we are to provide adequate documentation to ensure its long-term preservation. Collaborative efforts involve significant communication between the partners and collecting this communication is integral to the creation of documentation about the work. There must be agreement between the partners as to the intent of the work: is it to be such that it may be recreated later in time or is it seen as truly ephemeral, a one-time only event? From anecdotal experiences in preparing to document these three cases in Second Life, this latter concern is not insignificant. Many of the artists in Second Life give little, if any, thought to the long-term preservation of their works. The problem is exacerbated by the proprietary nature of the SL environment itself and Linden Labs seems disinclined to address the issue, leaving it to the end users and content creators.

Given the ephemeral nature of digital-based works, it is imperative that greater consideration be given to developing methods of documentation for long-term preservation. Issues of provenance, chain of custody, and trusted repositories must be addressed and resolved if we are to retain what is being created.

The experience and knowledge needed to begin already exists, if we but look in a more cross-disciplinary manner. The application of ethnographic techniques from the social sciences would certainly be a significant beginning. Along with this, the raising of awareness of both the need and methods at venues such as conferences would facilitate the communication between the partners of the collaborations. This communications is necessary if we are to ensure the gathering of all pertinent documentation about the projects.

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