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Ten Possible States in the Age of 3D3C Art: The Contil Case

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Abstract

Four factors take different meaning in the digital age: (a) 3D - moving from the real world into the screens, phones, and lately into our eyes with Google Glass, (b) Community - with Facebook/Twitter like digitally-enhanced communities, (c) Creation - with modern 3D printing, YouTube, Wikipedia and (d) Commerce - with virtual goods and virtual money from Linden Dollar to Bitcoin (aka 3D3C for short). We contend that 3D3C enable and push for a paradigm shift in how art could be shared, created, presented and sold, both through real and virtual means. In this paper, we describe ten states, or methods, of connecting real world art to the virtual wearing the 3D3C glasses. Our example is Dr. Ilana Salama-Ortar's physical art piece called "Tunnels/Containers: the Home", which was installed in November 2008. The re-created Contils with(in) the virtual world demonstrates the possibilities for new methods for artist's expression. The states include: (1) Building the Contil, (2) Adding Contil details, (3) Entering the Contil, (4) Showing a Movie in the Contil, (5) Creating your Own Contil, (6) Using the Contil as an Apartment, (7) Selling Contils as Virtual Goods, (8) Selling the Contil as Real Goods, (9) Creating communities to collaborate on new narratives, and (10) a call for even more states.

Most people are awaiting Virtual Reality; I'm awaiting virtuous reality.

Eli Khamarov

1. Introduction

The goal of this paper is to explore a new medium for visual arts and its potential impact on artists and art presentation. This exploration will present a theoretical view of 3-dimensional, digitally enhanced virtual environments that afford social communities, creation, and real world commerce – 3D3C for short.

As a demonstrative example of the potential of 3D3C art, we will describe how one real world art installation was developed in Second Life. This virtual art piece, called Contil, is based on a physical art piece, Dr. Ilana Salama-Ortar's "*Tunnels/Containers: the Home*," which was installed in November 2008. Exhibit 1 shows the physical art piece and the artist as well as the virtual re-creation. We will demonstrate how Contil represents the states in which real art and virtual worlds can be connected for the purpose of creating new community, creation, and commerce. A state is a way, method, representation, or approach to connecting a work of real world art and the virtual world. Specifically, we describe ten different states that create such connections, and we present how one owner of a micro-museum and gallery blends real and virtual art displays for artistic and commercial purposes. We conclude by suggesting that we are witnessing a gradual paradigm shift in how art could likely be presented and sold both through both real and virtual means.



Exhibit 1: The real container and the artist, Ilana Salama-Ortar, (left) and the virtual Contil (right)

2. A Formal Definition of 3D + Community, Creation, and Commerce

To appreciate the potential impact of virtual worlds on the arts, let us present a formal, brief definition of virtual worlds. We maintain that Real Virtual Worlds will – in due course – offer a paradigm shift. What we see now, with Second Life, World of Warcraft, Club Penguin and more than 100 other worlds, is just a beginning. The young field of Real Virtual Worlds has its roots in two fields: virtual reality (Burdea & Coiffet, 2003; Bimber & Raskar, 2005) and gaming worlds (Bartle, 2004; Alexander, 2003; Alexander, 2005; Taylor, 2006). Other related fields also are affecting virtual worlds, ranging from economy (for example, the sale of virtual goods), sociology (the nature of communities), and law (copyrights and ownership) to biology (new brain based human-computer interfaces), computer

science (performance, reliability, and scalability), and mathematics (algorithms for 3D rendering and animation).

We use the adjective *real* to distance virtual worlds from the gaming worlds. The term *real* hints at far-reaching potential. While today virtual worlds are mostly used for games and fun – Real Virtual Worlds have the potential to alter our lives. Our definition of Real Virtual Worlds includes four factors: a 3D world, community, creation, and commerce, or 3D3C. What follows is a brief description of each factor; for a longer review of 3D3C see (Sivan, 2008).

3D world: In this context, the 3D simulated environment is a dynamic world in which users have avatars that can move about freely and interact with or examine the world from different points of view – a roaming camera. The 3D world has the virtual characteristics of the real world: land, sky, sun (or maybe more than one sun), wind, gravity, water, and fire. A 3D world has multiple implications for artists and art objects, notably how social interaction between avatars and the art piece affects the creation, the presentation, perhaps even the adaptation of the art piece in both virtual and real worlds. Art creation and presentation can become a much more interactive experience.

Community: Virtual worlds capitalize on our social nature. Key to our concept of Real Virtual Worlds is an environment that offers a range of social interactions and community activities involving human-driven avatars. Support for such interactions allows us to connect both the virtual and real. Community involves concepts like leadership, permissions, and the ability to give rights within the group. The “digitalization” of groups invites many new qualities to the term “community” of the pre-digital age. For the arts, this can mean that, as Christa Sommerer and Laurent Mignonneau note, a community can become an essential part of an interactive art installation, participating in the creation and adaptation of an interactive piece or art display (Sommerer & Mignonneau, 1999).

Creation: Perhaps Second Life’s greatest invention and technological achievement was in giving users the capability to develop their own “things” (or in Second Life jargon: objects). In fact, the entire contents of Second Life (barring a few sample and demo objects) were created by users. Linden hit the nail on the head when they built a programming language (Second Life - Linden Script Language) into the world. Many virtual worlds allow users with programming abilities to endow their objects with behavioral attributes. As a result, we can see fish swimming in schools, a game of golf, pistols that shoot, and even dancing. Largely, these are expansions of the capabilities found in worlds such as Sims, combined with industrial CAD software packages. As noted above, this capability allows the community to co-design art objects.

Commerce: Many virtual worlds have currency exchanges in which real money, such as U.S. dollars, can be used to purchase in-world currency. In World of Warcraft, the currency is known as World Gold and is available through numerous exchange websites at varying rates. For example, at one exchange website, \$10,000 in World Gold can be purchased for \$11.28 U.S. currency (www.mmosave.com); at another site, \$10,000 in World Gold costs \$15.74 (www.worldgoldbuy.com). Linden created the Linden Dollar (or \$L, for short) with a current exchange rate of about \$L265 per \$1 US dollar (<http://secondlife.com/>). The economy of the Second Life world is based on this currency. The credibility of this economy is built on two levels – one conceptual and the other technical. At the conceptual level, Linden established and operates its own exchange. Within it, Linden guarantees the exchanging of \$L to U.S. dollars immediately and at any time. For instance, if Pepe, a fictions dancer, earned 2,600 \$L from tips, she could access the Linden website and exchange them for about US\$10, which would be immediately transferred to her real account. Going the other way, if Pepe needed

L\$6,000 for a new hairdo, she could immediately buy them for about US\$20. At the technical level, Linden has currency and commerce integrated into the game. For example, every object can have purchase-ability and price.

Ultimately, a Real Virtual World stems from the integration of the four factors described above; 3D, Community, Creation and Commerce. Second Life is a notably robust example because the commerce is structured into the world itself, which this year celebrates celebrate ten years in existence. This integration of a 3D world, organized and managed communities, immediate creation capabilities of objects and services, and a virtual commerce which actually becomes real – is the basic allure of Second Life in particular and of Real Virtual Worlds in general.

3. Ten Possible States for Art in 3D3C Virtual Worlds

Now that we have established our definition of 3D3C Real Virtual Worlds, we can turn to the various states of art in the virtual world. A state is a way, method, representation, or approach to connecting a work of real world art and the virtual world. We present ten states in the following sections, citing as an example the art installation mentioned above, *“Tunnels/Containers: the Home,”* and its virtual counterpart, Contil.

Dr. Salama-Ortar’s artwork is a green container (about 6 meters long by 2.4 meters wide and 2.4 meters tall). It is an attempt to construct a home at various imagined crossroads, starting with childhood in Egypt and ending in a reality in Israel. “Home” should embody the most stable state in the world, yet the home that Dr. Salama-Ortar creates through the use of the container is charged with a fictitious meaning, as if the home existing in the depth of private history has no stability and strength. Blocking any possibility of entry or exit, the installation is sealed with earth, framed by a door and windows situated around various parts of the home. A window was cut in the wall of the container to display soil. Embedded in the soil are various artifacts such as a table, bed, cloth, and a plant, which represent the inner-blocked space of the container.

What follows is a description of ten new states for re-creating the real world installation in the virtual world, and how each of the states function as starting point for discussion of how art can be presented, re-mixed, and perhaps sold in both real and virtual settings.

State 1: Building the Contil in Second Life

In this state, which will serve as a base for many of the next states, we re-created the Contil in with four walls and a top. The walls include textures, taken from high-resolution photographs of the real artifacts as well as computer-edited pictures. A house was purchased in Second Life with Linden dollars, which amounted to a small fee of about \$2 U.S., and the re-created Contil was placed in the house. The Contil and house are represented in Exhibit 2. Positioning the Contil inside a house (as opposed to in the open or in the sky) was a specific request of the artist, who wanted to emphasize the idea of “enclosure.” In the same way the container encloses the soil, the home encloses the container. Thus, the Contil original placement in a yard was artistically wrong.



Exhibit 0: State 1: The Contil in the virtual world enclosed in a purchased Second Life house.

State 2: Adding Contil Details

There are many ways to build in virtual worlds. Second Life in particular provides several methods. There are differences in the difficulty of building, the tools needed, the cost of building, the level of details, and the speed of rendering the outcome. While building an object, both short and long-term ramifications should be considered. Artists need to be aware of these differences. In building the virtual Contil, we chose a dual approach. We first created the base Contil, which was good for use in other states. We then added onto to the Contil walls high-resolution pictures of details. All together, we added ten high resolution items. Exhibit 3 includes five images of details that were added to the virtual Contil.



The sticker was "glued" on the virtual container using a texture made by a high-resolution picture taken from the real container.



The serial number imprinted on the real container found on the virtual container.



The bed, as designed and constructed by Dr. Salama-Ortar, was also "glued" to the virtual container using textures.



Details on the virtual Contil: A logo of a firm and a vent hole.



The front of the container: A high-resolution photo of the real container is covering the entire face of the virtual "box" to make the Contil.

Exhibit 3: State 2: Images of details added to the virtual Contil

State 3: Entering the Contil

The original Contil was a sealed artifact. You could not go inside. In the virtual world, we decided to use the inside of the container as a place to further expose the art and to show one of the related movies. Thus, when a visitor – an avatar – clicks on the door, the avatar is teleported into a new location (100 meters in the air). Exhibit 4 shows images of an avatar entering the Contil. This new location is a larger space – 20 meters long by 10 meters wide and 5 meter in height. The base Contil designed in State 1 was 10 meters long by 3.46 meters wide and 4.1 meters high. The larger Contil allows more space inside for the development of additional soil blocks with more embedded artifacts. Exhibit 5 shows an embedded bed and a virtual piano in the Contil. At the back of the larger Contil we created a presentation area with 12 seats where users can see a movie.



An avatar standing at the door, and click on the door



An avatar standing at the entrance, after the door



An avatar further inside the Contil

Exhibit 4: State 3: Entering the Contil; these three images show an avatar exploring the inside of the Contil



Original bed from wood that escapes from the soil



Bed in the virtual world (texture embedded)



Exhibit 5: State 3: Entering the Contil; these four images compare details of the real-world art object with details of objects inside the virtual Contil.

State 4: Showing a Movie in the Contil

Second Life affords the capability to project a movie on a specific rectangular object. For this state, we created an object 2 meters high by 4 meters wide on which to project a movie, "The Camp of the Jews," a related topic of the Contil. Technically, in order to see the movie the visitor has to have QuickTime installed in their computer (Quick Time by Apple is free software). The computer then accesses the URL of the movie from the internet. There is no need for all the users to see the movie at the same time. Users can watch at their leisure. If the URL points to a streamed video (as opposed to a static file), then all the viewers can see the movies at the same time. This is the experience of joint-virtual-watching a movie. Exhibit 6 shows the movie screen in the Contil's theater. Audience members seated in the virtual Contil can talk to each other via text (chat) or audio (voice). They can also send a message to all the people who watch the movie at the same time.



Exhibit 6: State 4: Watching a movie jointly in the Contil's theater

State 5: Creating your Own Contil

As mentioned in the definition of 3D3C, two of the four factors in a Real Virtual World are creation and community; hence, 3D3C worlds provide the potential for user-created content. In our case, we took the basic components of the Contil: walls, blocks of soil, and wooden objects, priced them and created a store. Users can now buy the Contil components and remix them to assemble new derivative art. Exhibit 7 includes images of the components.

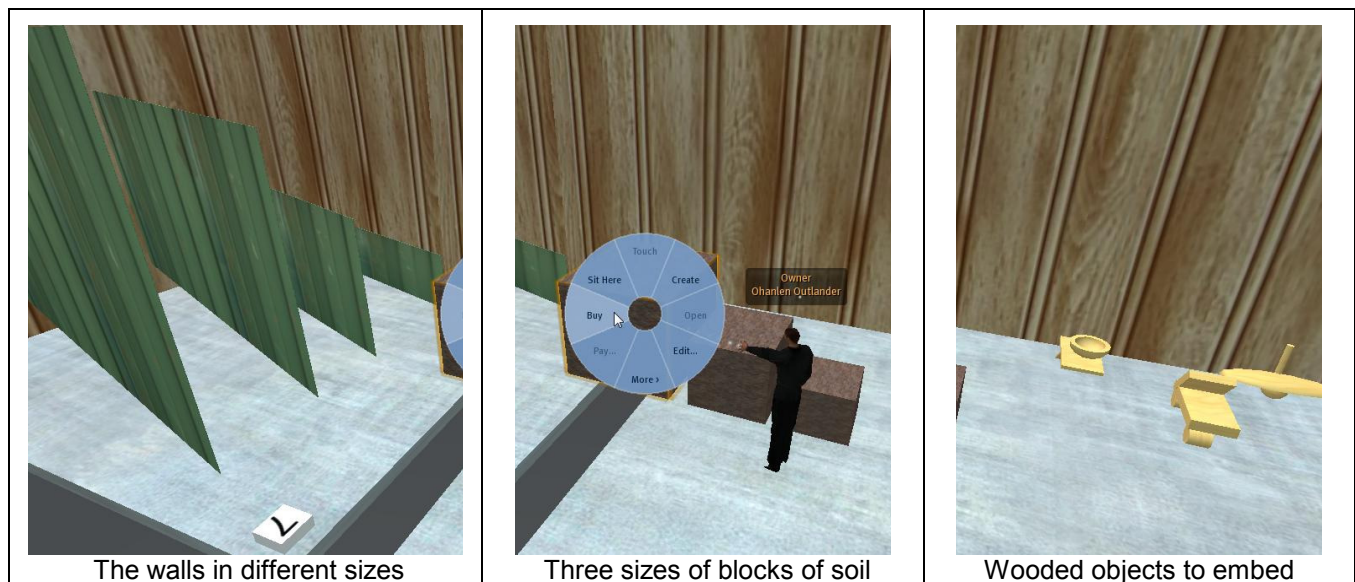


Exhibit 7: State 5: Create your own Contil

State 6: Using the Contil as an Apartment

With the ability to construct and reconstruct, we took the Contil to the real estate market. Virtual Realty – namely building homes, houses, and taking care of land – is a common activity in Second Life. In fact, most active users either buy homes or rent homes and then furnish them. You are actually able to add carpets, furniture, lamps, and various household items. We chose a simple arrangement of three full-scale Contils. Exhibit 8 demonstrates three apartments where avatars can inhabit and socialize in the Contil.



Exhibit 8: State 6: The Contil as apartments

State 7: Selling Contils as Virtual Goods

As mentioned earlier, another key feature of real virtual worlds is the direct and immediate connection to money, as commerce in Second Life is built into the world. In the virtual gallery that we host in Second Life, we collect various artifacts that we have purchased both pictures and statues. Exhibit 9 is an image of a “Purple Sun” picture in the virtual gallery. Exhibit 10 is an image of snake sculpture.

To capitalize on in-world commerce and to allow the Contil art to spread (which was clearly not possible with the original Contil), we reduced the Contil to 63 centimeters in length by 21 centimeters wide and 26 centimeters high. The small Contil is shown in Exhibit 11. All the external features of the Contil were preserved. We then set a tentative price for the Contil L\$ 250, which again is about \$1 US. Now all Second Life users can buy the small Contil and position it in their homes or galleries.

At this point, as with the other states, we have not yet promoted the fact that we sell the Contil. We have not decided how many mini Contils we will sell and have not answered many typical art-market questions: Will the Contils be numbered, say 1 of 10? Will we offer artist proof copies? How are we going to track who owns a Contil? Are we going to allow resale?

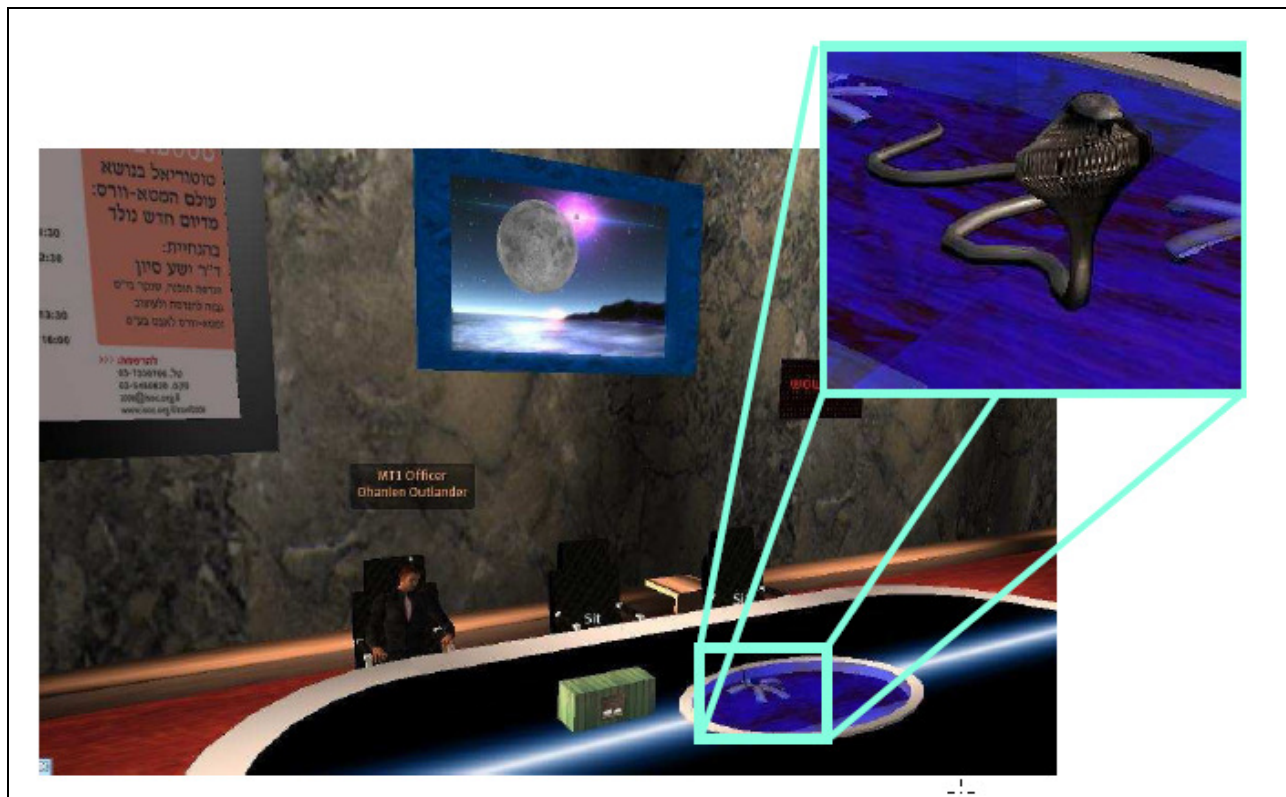


Exhibit 9: State 7: Selling virtual goods; a sample snake (sculpti) at L\$1000



Exhibit 10: State 7: Selling virtual goods; a sample "Purple Sun" (moving picture) at L\$750

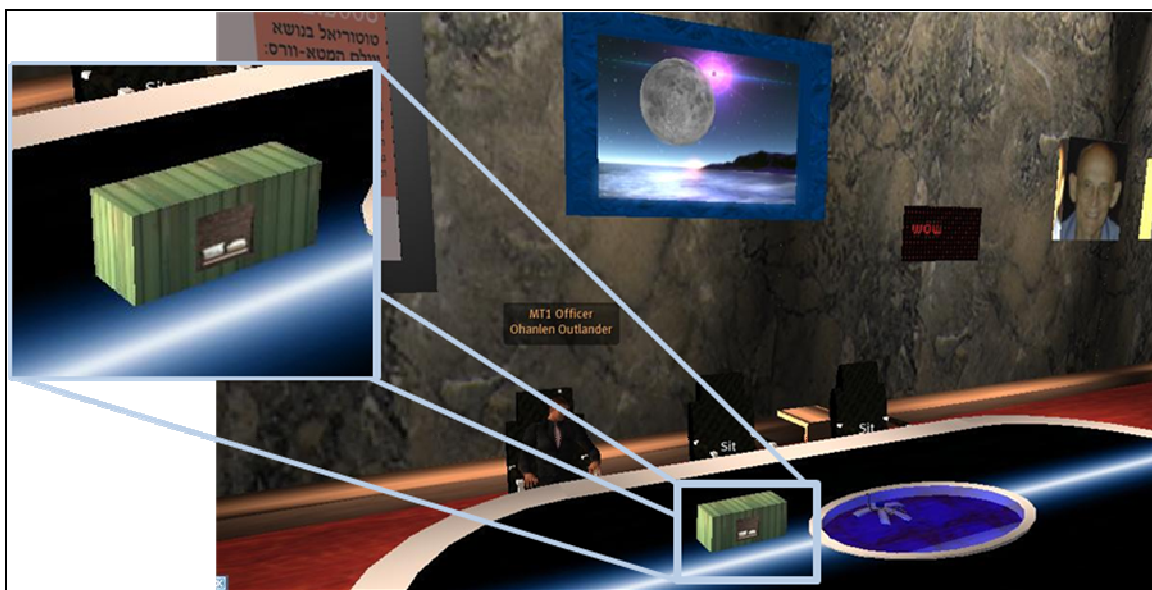


Exhibit 11: State 7: Selling Contils; a small Contil priced at L\$100

State 8: Selling the Contil as Real Goods

With the previous states of the Contil created in the virtual world, we can reconnect it into the real world. To demonstrate this we connected with the CounterpART Gallery, which is located in Lowell, Massachusetts. The real gallery is the brainchild of Filthy Fluno (Jeff Lipsky in real). CounterpART Gallery is dedicated to the exhibition of contemporary art as well as presenting mixed-reality mashups of art, music, new media, installations, and exhibitions that bring together both local and international

artists from varied disciplines. CounterpART also promotes an inclusive community of artists, local businesses, educators, and virtual technology enthusiasts.

Lipsky's real-world micro museum presents a mix of real and virtual works of art. His virtual gallery is located in the Artropolis Island (Rhinesmith, 2009). Exhibit 12 shows a map of Artropolis Island, which hosts a number of galleries, including Lipsky's. Exhibit 13 shows an Artropolis Island artist, and Exhibit 14 is an image of the entrance to Filthy Fluno's gallery space in Second Life.

In a March 2009 story (Corbett, 2009) the *New York Times* described Lipsky's efforts to blend his real and virtual galleries:

“Before creating and inhabiting Filthy, Jeffrey Lipsky had little luck working his way into the inelastic hierarchy of art dealers, critics and high-end galleries who sparingly turn painters into stars. But transferred to the Internet, elitism is little more than a poor business practice. If the traditional art market is driven by scarcity — with value bestowed upon rare and finite works created by an anointed few — it may be vulnerable to people like Jeffrey Lipsky, who capitalize on technology's propensity for abundance, even if this means spending inglorious hours walking around virtual nightclubs, typing, “Hi, I'm Filthy Fluno and I'm an artist,” to strangers, and being willing, as Lipsky is, to sell multiple inkjet copies of his work to those customers who will pay \$50 as opposed to the \$500-\$15,000 he charges for originals. All this has translated into more mainstream respectability: since creating Filthy, Lipsky has participated in gallery shows from California to New York to Portugal.”

A simulated Contil displayed in his real-world gallery is presented in Exhibit 16. Sample exhibition posters in the CounterpART gallery are displayed in Exhibit 15.



Behind Chianti Carmichael is a map of the Second Life island Artropolis and the galleries it hosts. Placed on the table is a story documenting the 'history' of the island, created to give the island a character. The overall feel of the island is based on the show *Lost* (Photo from Chianti Carmichael).

Exhibit 12: Second Life island Artropolis and the galleries it hosts



Exhibit 13: One of the artists in Artropolis



This is the entrance to Filthy Fluno's (aka Jeff Lipsky) Second Life Artropolis gallery space.
(photo from Chianti Carmichael)

Exhibit 14: Entry to Filthy's virtual gallery



Exhibit 15: Sample exhibition poster in the CounterPART gallery



Exhibit 16: State 8: Mockup Contil exhibition in the CounterPART gallery

State 9: Creating communities to collaborate on new narratives

Dr. Salama-Ortar's original art piece is an attempt to construct a home at various imagined crossroads. The beauty of 3D3C Worlds is the capability to assimilate a community around an art piece, both in real and virtual world spaces, so that individuals can explore all aspects of the object and remix or reuse them to create new narratives that express shared experiences. Another paper in this JVWR issue (see "Kromosomer – an experience in shared creative work and expression") explores the concept of *distributed dramaturgy* in Second Life, in which each individual in a community of users collaborated in the collective creation of storytelling. The Contil art piece represents a similar opportunity for creating a community of users to contribute to new narratives.

State 10: Tell us how you would use Contil

We showed several states described in the paper to two communities: Second Lifer users and art players, which includes both artists and people who deal with art, such as curators and museum managers. Both groups quickly suggested more ideas some by using specific features of Second Life (like voice and programming) and some by asking new questions. We would like to broaden the discussion and solicit more ideas about other states of creation, commerce, and community that have not been expressed in this paper.

4. Collaborative Creation: a Technical View

At this point, if we are going to invite others to propose other states of creation involving the reuse the Contil art objects, it is prudent to mention some of the technical aspects of building the Contil states. A bit of background is needed. The basic unit of Second Life is a Region, often called an Island or a Sim – short for simulator. A Region is a 256-by-256 meter area that is being managed by the same person. Exhibit 17 shows the locations of five different Contil elements.



Exhibit 17: Technical view

While there are many other aspects to land in Second Life, which we will not cover here, we can examine the aerial view that will explain the various locations of the Contil elements:

- (A) The house that contains the basic Contil, which was described in the State 1. State 2 talks about the details that are posted on the Contil itself in this building.
- (B) The larger Contil as seen in state 2. This larger Contil also houses the movie auditorium listed in state 3. You will note that this Contil is actually located 200 meters above ground level.
- (C) The store with the Contil components that allow user-created Contils (state 5).
- (D) The location of the three apartments (State 6) where social interaction can occur.
- (E) The conference center that houses the exhibition of the virtual goods, among them the Contil artifact (State 7).

Note: State 8, which relates to the real world, is not represented here.

In presenting this technical view, we wanted to emphasize some of the specifications of doing art in virtual worlds. To use the medium one must be aware of its limitations, abilities, pros, and cons. In

more general terms: To fully harness the value of virtual worlds, at the right time and cost, both artists and curators should acquaint themselves with the medium.

5. Conclusion

In this paper, we have tried to expose the potential of 3D3C Worlds for the arts. We used two points of view. First, we described the nature of 3D3C Worlds as a combination of 3D, community, creation, and commerce (3D3C). Then we listed ten states for re-creating and re-mixing art:

1. **Show the art in world** – we simply take the picture, statue, or real world creation and re-create it in the virtual world.
2. **Show more details** – we can elaborate on specific details of the work in virtual worlds. One of the values of the digital nature of virtual worlds is the ability to include in the same creation, multiple representations of details. Thus in the Contil case we include several versions of the container signs in several resolutions.
3. **Going inside** – the size of the Contil was not enough for us, so we simply created a new bigger version of it – and allowed the avatars to go inside the Contil.
4. **Show a movie** – once inside the Contil we could use the built-in tools of Second Life to show a movie, turning the Contil into an auditorium.
5. **Create your own art** – the Contil was constructed from several key elements (container sides, soil, and buried wood-based Furniture). We created a store where avatars can buy these elements, mix and match them to create their own Contil-based art.
6. **The art as an apartment** – connecting with what many people do in virtual worlds, we turned the Contil into unique habitat. We allowed users to rent these apartments and furnish them.
7. **Sell virtual goods** – linking with the ability to sell and buy items in virtual worlds, we created a small Contil as virtual art allowing people to buy a small version of the Contil.
8. **Sell real goods** – We connected to the real world by suggesting a potential exhibition in a real micro-gallery located in Lowell, Massachusetts. We expect such galleries to become a focal point for future real/virtual art.
9. **Collaborate on new narratives** – gathering a community of users, each of whom contributes to a new narrative that interprets the meanings of Dr. Salama-Ortar's original art piece.
10. **Tell us how you'd use Contil** – The previous states are building blocks designed to stimulate discussion. The exact application of a state or its derivatives depends on the alignment of the art itself, the artist, the audience, and the platform. These states can and should be remixed and restated to arrive at new states. It is really up for us to develop the language.

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