

TELLING TALES IN SMOOTH AND STRIATED SPACES

Elif Ayiter

Sabanci University

Elif Ayiter ayiter@sabanciuniv.edu

ABSTRACT

This talk will be based upon my building work in virtual worlds. This activity incorporates not only architecture but also deals with the creation of virtual geography, virtual climate and a virtual ecology. This building activity will be considered within the contexts of the Deleuzian notion of 'smooth' and 'striated' space. The aim is the creation of a 'Gesamtkunstwerk' that can also be considered to be a 'storyworld,' since one of the uppermost aims of the avatars who visit such locations is the creation of personal tales that take their impetus from the environment in which they are immersed. A number of such 'storyworlds' that take their impetus from the 'smooth/striated' will be demonstrated and their building strategies be explained through a visual based presentation.

[BRIEF BIOGRAPHY]

Elif Ayiter is a designer, educator and researcher whose creative interests are based in three dimensional online virtual worlds and their avatars, as well as in developing and implementing hybrid educational methodologies between art & design and computer science. She teaches full time at Sabanci University in Istanbul. Her texts have been published at academic journals such as the Leonardo Electronic Almanac, the Journal of Consciousness Studies, and Technoetic Arts. She has authored many book chapters in edited academic books and has presented creative as well as research output at many international conferences.

TELLING TALES IN SMOOTH AND STRIATED SPACES

Elif Ayiter
Sabancı University

INTRODUCTION: A FEW KEY POINTS RELATED TO BUILDING IN VIRTUAL WORLDS

Metaverse are collective, online, persistent, three dimensional virtual worlds, in which (unlike their gaming counterparts) all content is user-created. Thus, a further name by which these worlds can appropriately be called as well is the term 'builders' worlds.'

Although in their current embodiment metaverse rely heavily upon their three dimensional attributes, the concept of a builders' world in which participants could create their personal artefacts goes back to the 1980s when 'Habitat' was launched on Commodore, even some years before Neal Stephenson had coined the term 'metaverse' itself in his novel Snow Crash. Better known early versions of the genre however are 'Active Worlds' and 'There,' introduced in 1995 in 1998 respectively. Both of these three dimensional domains attempted to provide building tools for users so that they could create additional content to what was inherently provided by the game developers themselves.

Small pieces, loosely joined



Figure 01: Building a power plant with 'small pieces, loosely joined.' Elif Ayiter, Second Life, 2008.

Following this lineage Second Life, the first truly viable metaverse which was based upon a technological infrastructure robust enough to enable building activity to commence in the fullest sense of the term, was launched in 2003. One of the major reasons that Second Life succeeded where its forerunners had failed was the usage of a system of simple building blocks specifically designed for human-scale creation, bringing about a design principle which the creators of Second Life call 'atomistic construction.' These primitive objects constitute the atoms of Second Life and can be endlessly combined to build structures, and indeed behaviours through the scripts which can be embedded inside them. They are designed to support maximum creativity while still being simple

enough for everyone to play with and use, in other words 'small pieces, loosely joined' ¹ to create complex constructs of all descriptions, for a plethora purposes, indeed often carrying multiple purposes all at once.

What is also significant is that all metaverse objects exist in a physically simulated world, therefore resulting in fairly predictable behaviours. Such simulation allows new residents to attain an intuitive understanding of how things operate within the virtual world in which they are now immersed by juxtaposing their real world experiences with the novel ones which they encounter upon entering the metaverse. (Ondrejka 2008: 229-252)

However, no matter how much the building tools may be impressive in and of themselves, Linden Lab's dream of bringing about a world with a thriving population of builders, enmeshed in a fully operational virtual economy, would still not have materialized were it not for the intellectual property² rights with which the developers have enhanced the creative system. Indeed Second Life's decision to grant intellectual property rights to content creators are the foremost key to understanding the innovation and economic growth which the world has brought forth.

Creativity as a way of life

A most important attribute of builders' worlds is the circumstance that not only is their content user-defined and created, but also the purpose of residing in these worlds is entirely up to and decided upon by their users. The developers of the platform provide no narrative which is to be followed, there are no system defined goals or quests.

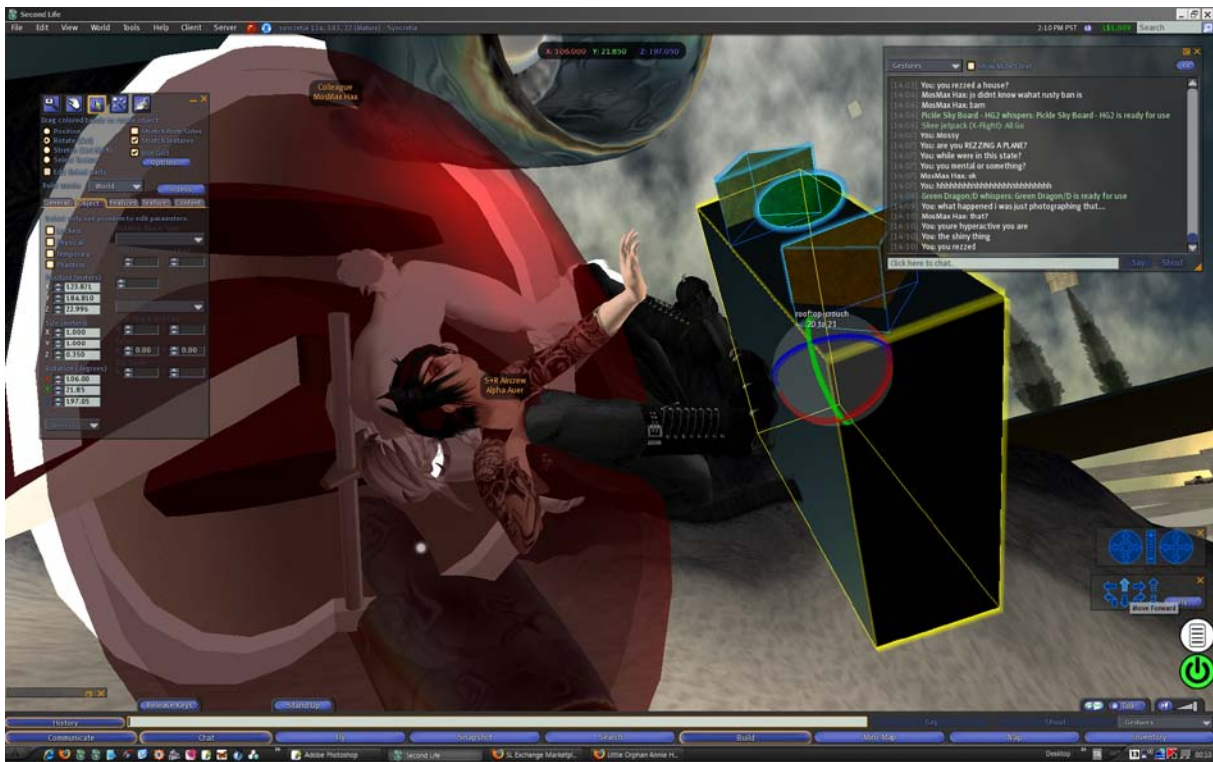


Figure 02: Editing objects as a playful activity among friends. Elif Ayiter, Second Life, 2008.

As a resident of nigh on ten years my personal conclusion is that this also poses one of the built-in challenges to the system. While much has been said about the complexity of the interface as being a factor which accounts for the significant fall-out rate of new users, it is my conviction an even greater

¹ <http://www.smallpieces.com/index.php>

² Within virtual worlds there is a noteworthy distinction from ownership in Real Life in that digital artefacts can only be intellectual property rather than 'real' property.

deterrent is that the 'magic feeling (of having) nowhere to go'³ proves to be too irksome for most of those who decide to discontinue their sojourn in the metaverse, and usually very early on at that.

I wish to posit that the only good reason to stay in the metaverse is to become creatively active, that unless one does so, no amount of shopping, chat and disco dancing, and maybe not even the romantic liaisons and camaraderie of a metaverse existence may provide sufficient incentive for logging back in. In this sense the metaverse can, and should be seen first and foremost as a fascinating experiment in collaborative as well as individual creativity. As Michael Cervieri said – the metaverse is *“a wildly provocative experiment in user generated content;”* however, also adding that *“unlike most ‘upload your content and we’ll share it in some sort of social media web-2-point-oh way,’ content creation in Second Life is really, really, difficult.”* (Cervieri 2007)

The Unfinished Artefact

One of the most compelling points of virtual building however is that such output is bound in a continuous process of transformation and improvement – in short in a permanent state of being 'unfinished,' as Brian Eno defines in his 1995 landmark Wired magazine interview: *“think of cultural products, or art works, or the people who use them even, as being unfinished. Permanently unfinished. We come from a cultural heritage that says things have a ‘nature,’ and that this nature is fixed and describable. We find more and more that this idea is insupportable - the ‘nature’ of something is not by any means singular, and depends on where and when you find it, and what you want it for. The functional identity of things is a product of our interaction with them.”* (Eno 1995)

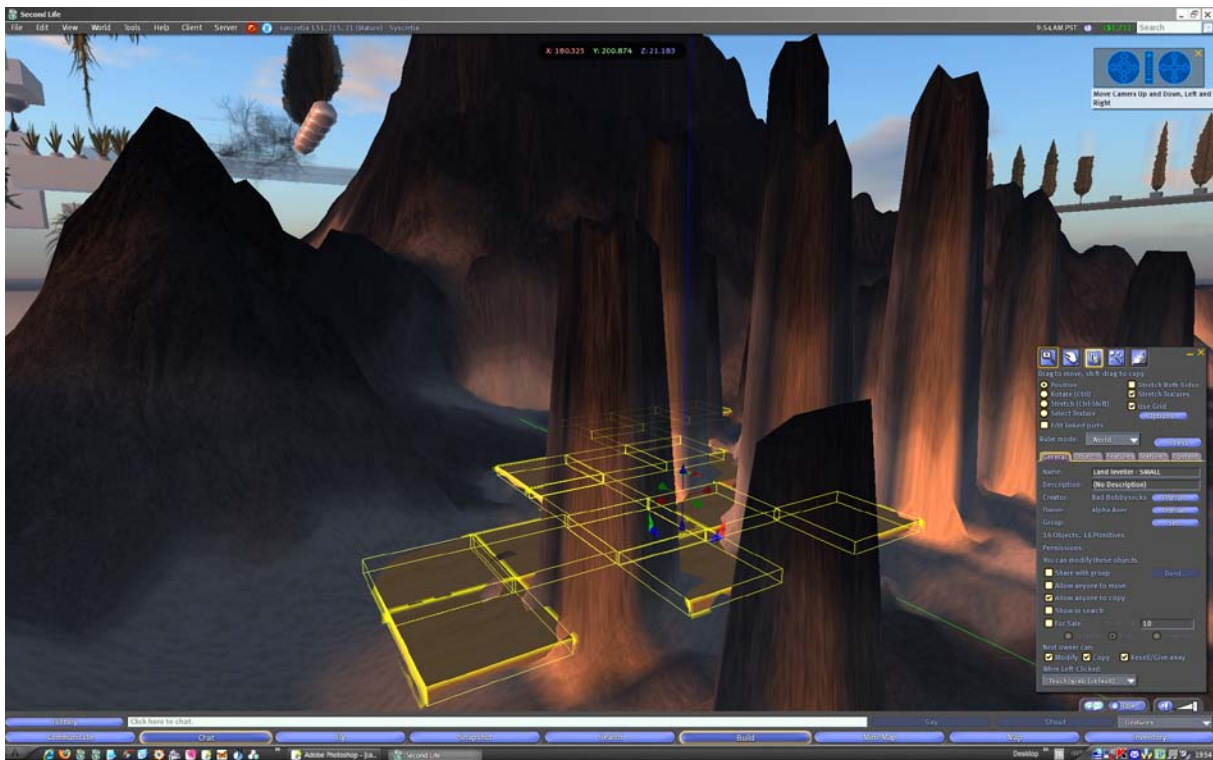


Figure03: Terraforming in the metaverse, Elif Ayiter, Second Life, 2008.

While the physical world which is comprised of atoms (that can be worked upon only up to a certain point after which they start to break down) is not conducive to such extended manipulations of physical objects; the electronic environment with its building blocks of bits provides fertile ground for the existence of creations whose inherent nature is to remain in a perpetual state of being worked upon: Unlike atoms, bits remain malleable throughout their lifespan; and even though the lifespan of

³ The Beatles, Abbey Road, 'You never give me your money'. 1969

the bits themselves may be finite, the lifespan of the artefact itself can be infinitely extended by making novel copies of it.

The way in which the boundlessly malleable nature of bits affects creative activity has already been noted upon by Michael Heim during the 1980s, when he wrote on 'thought processing', which describes a novel process of creative interaction between author and output that rests upon an ever-present, ever-evolving exchange and flux, bringing forth a process which need not necessarily ever be terminated. (Heim 1994: 42-43) This difference between digital and physical media resides in their microstructures: Processes that move physical atoms around constitute the irreversible aspects of traditional work, in which most operations are beyond recall. By contrast, the microstructure of the digital medium is comprised of bits which are specified arrangements of symbols. Accordingly, in the microstructure of the computational medium, arrangements and values can always be reconstructed, their previous states can be stored and recalled, additional instances and versions can be replicated, resulting in a continuously workable medium (McCullough 1996: 213-214), in which a creative freedom, such as the one which can be found in virtual building can be experienced.

The outcomes are creative systems which, unlike their physical counterparts, can be endlessly improvised upon, altered, re-worked and played with; and as such they appear to provide the constitutional material of all metaverse building.

THE 'SMOOTH' AND THE 'STRIATED'

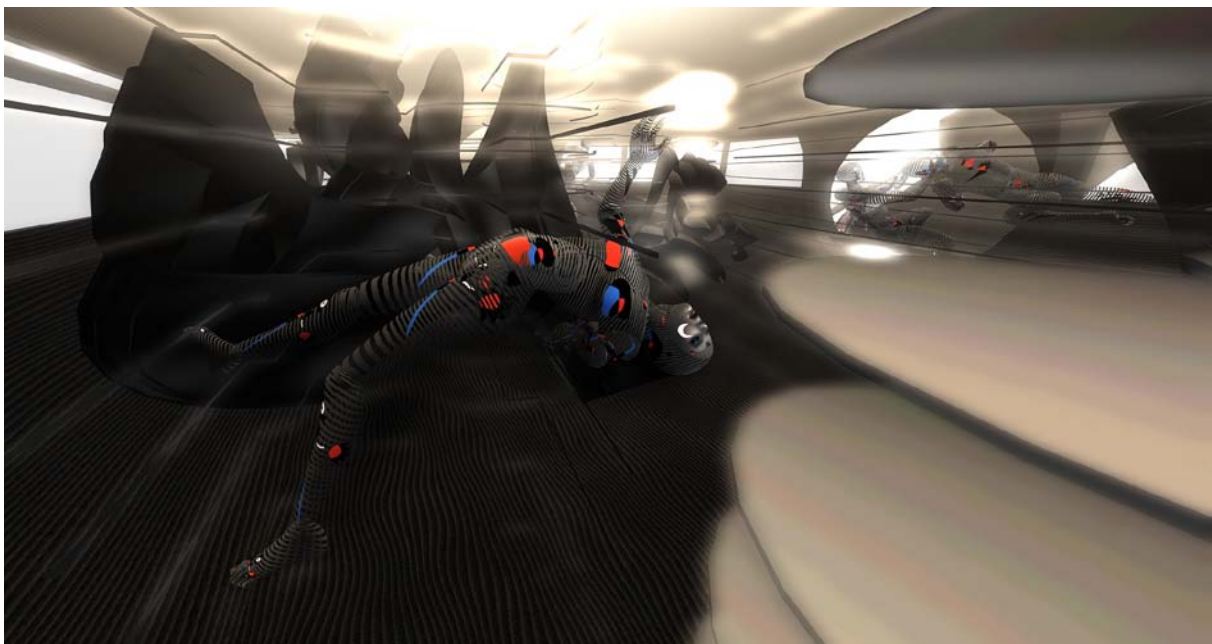


Figure 04: *"Space is rich in its potentiality because it gives rise to the possibility of events."* (Deleuze and Guattari in Goodchild 1996: 153). "The Skybunkers" Elif Ayiter, OpenSim, 2016.

Although I cannot say that I was familiar with Gilles Deleuze and Felix Guattari's conceptions of 'smooth' and 'striated' space from the onset of my building activities in the metaverse, or indeed that I built with their tenets in mind; when I discovered this discourse I could not help but make connections with not only my building efforts but with that of many metaverse builders. It will therefore be in order to briefly survey the Deleuzian concepts of the 'smooth' and 'striated' – also by giving visual examples as to how these two spatial states have been implemented and brought into co-existence.

Deleuze and Guattari call smoothing and striating as two antagonistic operations and interpretations of territory. Smooth spaces are the territory of the nomads, while striated spaces are created by the sedentary – by settled societies developed after the advent of agriculture. Their conflict is a confrontation movement and speed, arborescence and rhizome, royal science and nomad science.

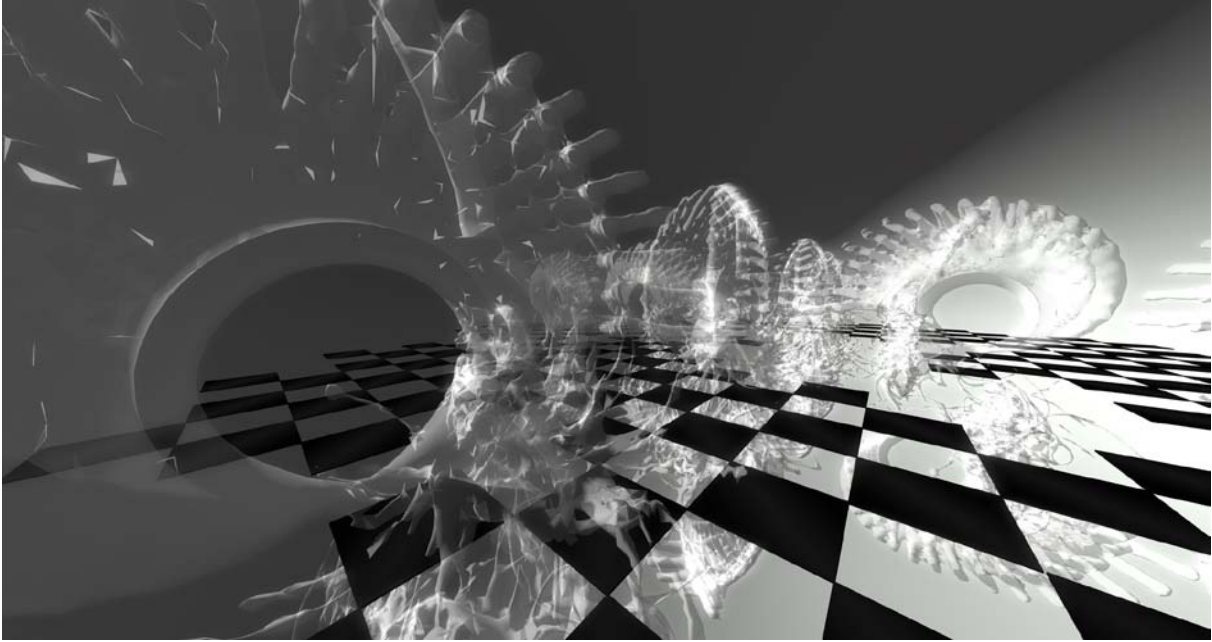


Figure 05: *"(is a smooth space captured, enveloped by a striated space, or does a striated space dissolve into a smooth space, allow a smooth space to develop?)"* (Deleuze and Guattari 1987: 475) "Array" Elif Ayiter, OpenSim, 2016.

'Smooth space' is occupied by intensities and events. It is haptic rather than optic, a vectorial space rather than a metrical one. The characteristic experience of 'smooth space' is short term, up close, with no visual points of reference or invariant distances. Instead of the metrical forms of striated space, smooth space is made up of a constantly changing orientation provided by a population of nomads who are actively entertaining tactile relations among themselves.

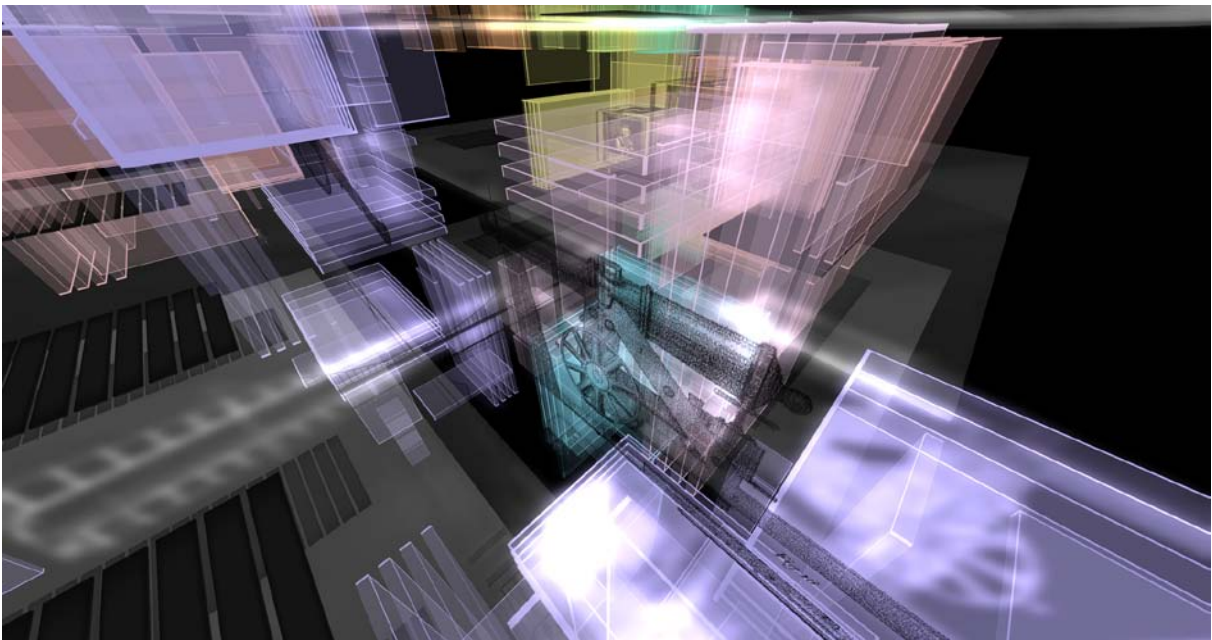


Figure 06: "The Bridge." Elif Ayiter, OpenSim, 2016.

The fundamental opposition of these two space-states can probably best be understood in terms of travel, and movement: Striated travel is linear movement from point A to point B, while smooth space involves a meandering movement in which the objective is not so much the destination as it is the

journey. Smooth and striated can also be distinguished through the inverse relations of the point and the line. Within striated space the line is between two points, while within the smooth, the point is between two lines.

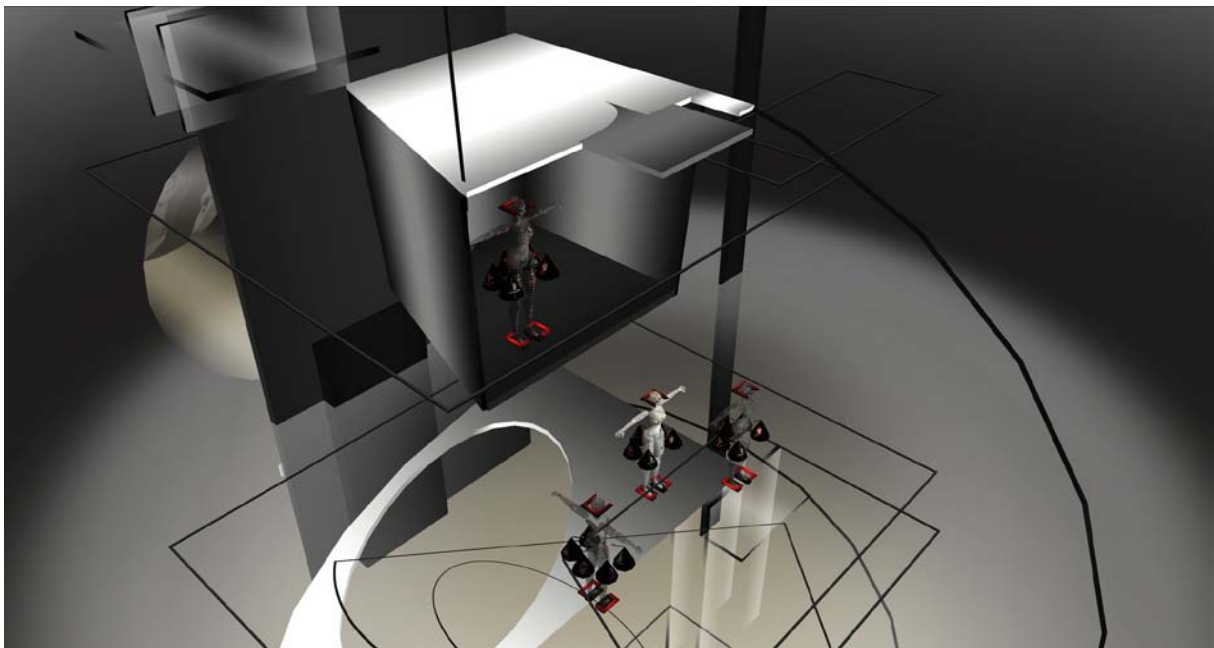
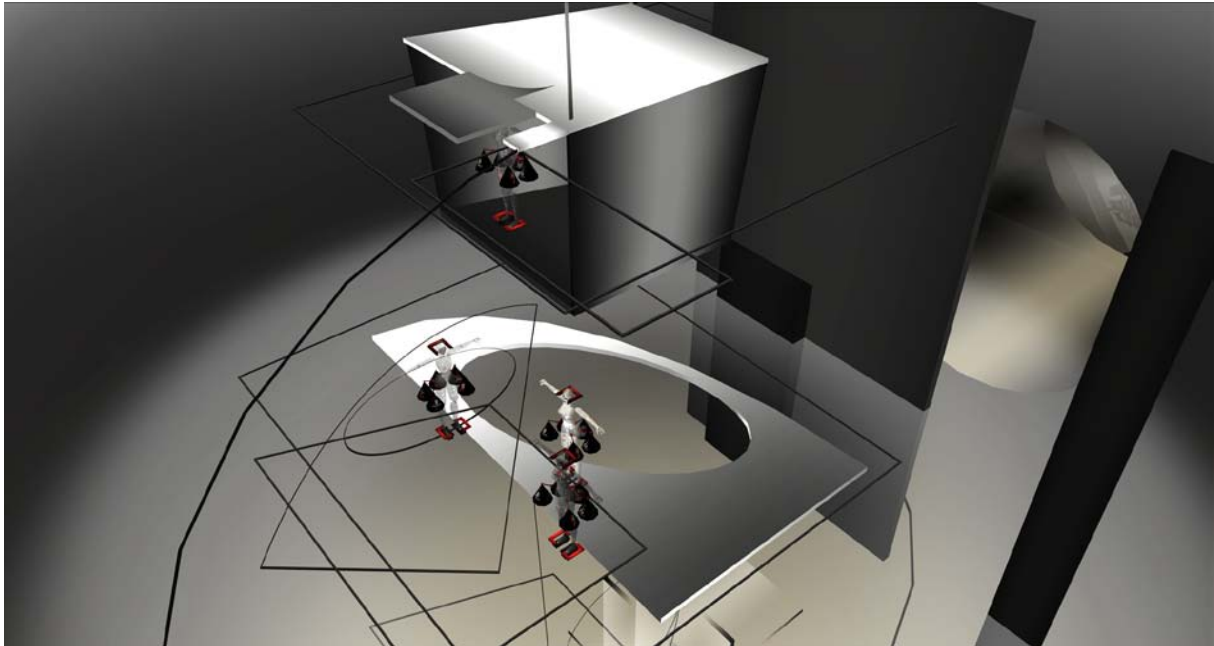


Figure 07 and 08: "Proun 5A." Elif Ayiter, Second Life, 2015.

'Smooth space' finds its counterpoint in 'striated space' which is defined by boundaries, walls, hierarchies, and easily identifiable entry/exit points. According to Deleuze and Guattari striation is negatively motivated by anxiety in the face of all that passes, flows, or varies and through this anxiety ends up erecting a constancy and an eternity of a state of being 'in-itself.' Thus their seminal work 'A Thousand Plateaus' is actually a recount of an extended confrontation between the smooth and the striated in which the striated progressively takes hold over the smooth. (Hubert 2007)

While Deleuze and Guattari note upon the fundamental oppositions of these two types of spaces, they nevertheless acknowledge their distinctly separate existence only in nature, claiming that when it comes to man-made spaces 'smooth' and 'striated' can exist only in mixture, in a state of in-

betweenness: Although such an opposition does exist, nevertheless these *“two spaces in fact exist only in mixture: smooth space is constantly being translated, transversed into a striated space; striated space is constantly being reversed, returned to a smooth space. In the first case, one organizes even the desert; in the second, the desert gains and grows; and the two can happen simultaneously.”* (Deleuze and Guattari 1987: 474-475)

THE ‘STORYWORLD’ AND THE ‘GESAMTKUNSTWERK’

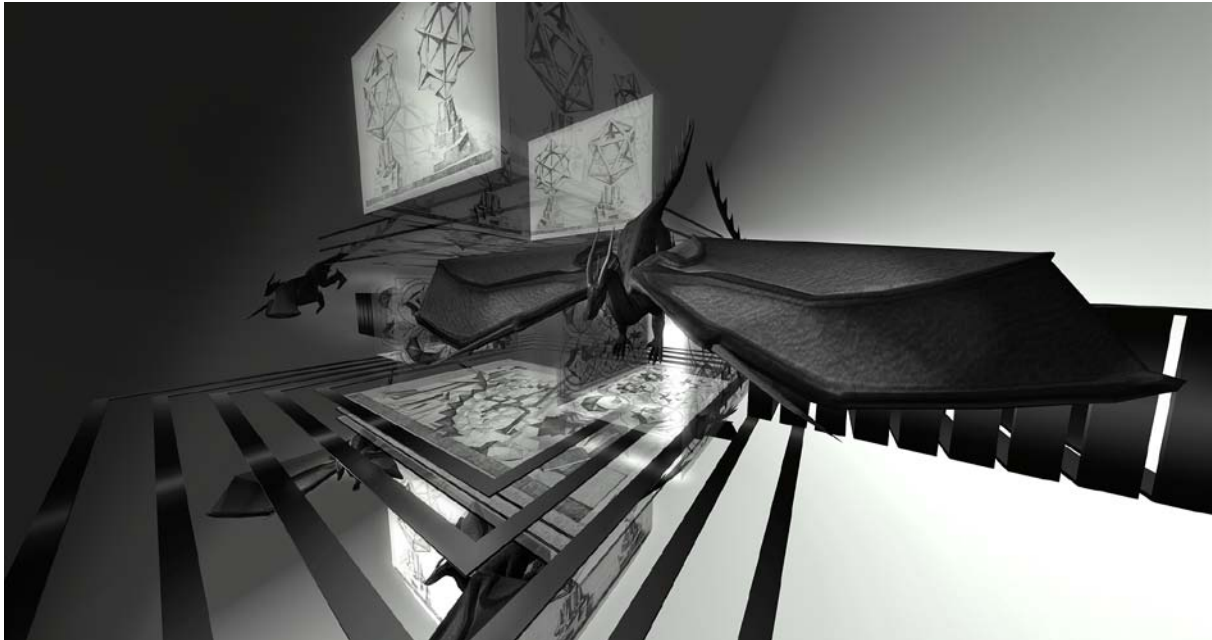


Figure 09: “Symmetry.” Elif Ayiter, OpenSim, 2016.

After even a short residence therein, it will become apparent even to a casual observer that virtual worlds – be they gaming worlds or builder’s worlds – lend themselves to storytelling, to the generation of free-flowing, improvised, stories and tales, unlike few other spaces that one might encounter in the physical world, given that they provide extraordinary resources to their dweller when it comes to creating fantastical environments as well as the ability to change appearance at will, to acquire persona that cover the gamut from the scary, to the playful, the phantasmagorical to the absurd. The metaverse is resplendent with an architecture that ranges from medieval castles to futuristic cities, to hard-to-define art ecologies and hybrid spaces – all of which are inhabited by a population that ranges from the humanoid avatar to elves, nymphs, furies, goblins, to so-called ‘tinies’ and many more. The *raison d’être* for a metaverse existence has already been described as becoming enmeshed in creative activity at the onset of this text. A compelling manifestation of such creative activity is in the building as well as the inhabitation of storytelling spaces, or ‘storyworlds.’

Storyworlds

The term ‘storyworld’ denotes *“the surrounding context or environment”* which embeds *“existents, their attributes, and the actions and events in which they are involved.”* (Herman 2005: 569–70) Storyworlds thus closely correlate with the convergence of temporal and spatial parameters, both of which, according to Herman, hold equal value in the construction of an integrated narrative.

The key characteristic of three dimensional, participatory, online virtual worlds is that these are dynamic spaces within which participants can interact with objects and others that surround them. Thus, unlike written narratives that inevitably have scant spatial information, online virtual worlds provide expansive visual spaces for players to explore through visual and auditory cues. Given how important, indeed fundamental, the visualization of space to virtual world narrative is, the equal role that Herman attributes to space in storytelling is crucial to an understanding as to why tales can be told/rendered in virtual worlds with considerable success. (Herman 2002)



Figure 10: "Verdigris." Elif Ayiter, OpenSim, 2016.

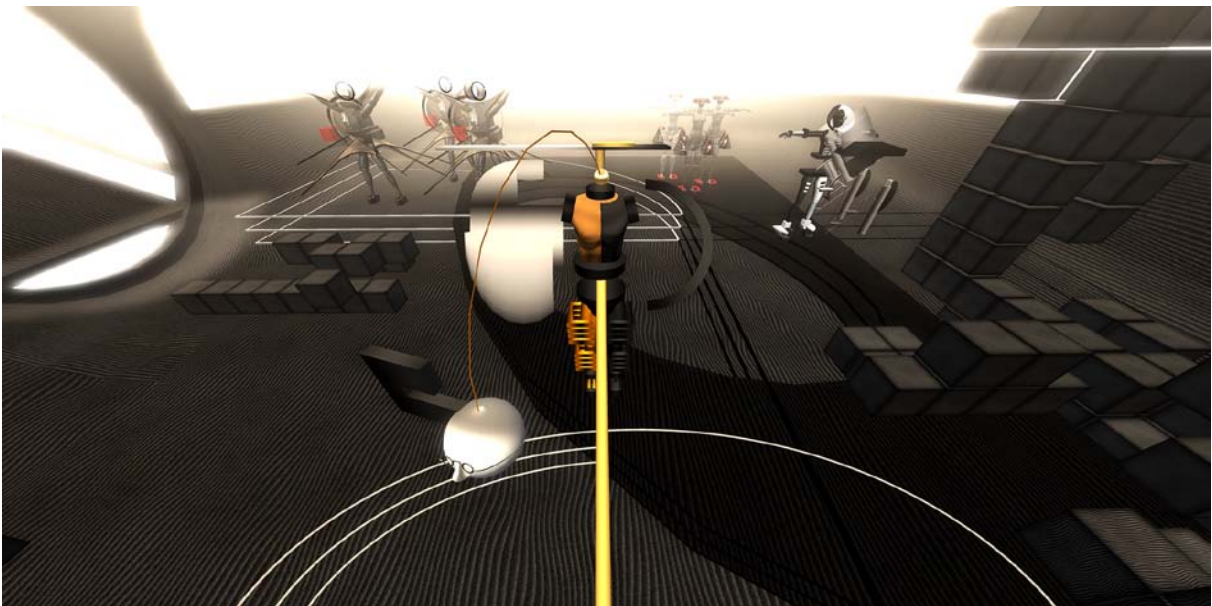


Figure 11: "Victory over the Sun." Elif Ayiter, OpenSim, 2016.

Herman's emphasis on space as a core component of storytelling went against a long-held tendency to place temporality at the core of narrative, and to give space the role of a more or less optional accompaniment – to the extent that if space was discussed at all it was done so negatively, with emphasis placed solely on the temporal aspects of a tale.

Before Herman, the theorist who challenged this bias towards temporality in narratology was Mikhail Bakhtin who coined the concept of the 'chronotope' – a combination of the words *chronos* (time) and *topos* (space) in Greek. Bakhtin brought forth a discussion on the space/time continuum in storytelling by saying "*we will give the name chronotope (literally, "time space") to the intrinsic connectedness of temporal and spatial relationships that are artistically expressed in literature.*" (Bakhtin 1981) Thus, for Bakhtin, space and time became inseparable components that constituted one whole – a precursor of the 'storyworld' which Herman later formulated as a discrete concept.

When it comes to virtual worlds, time and space appear to play an even more crucial role in the construction of narrative, and not only during the authoring process itself, but also for comprehension on behalf of the participating avatar. Teresa Bridgeman says of this process that *"to read a narrative is to engage with an alternative world that has its own temporal and spatial structures,"* (2007: 52-65) while Espen Aarseth claims that *"the defining element in computer games is spatiality. Computer games are essentially concerned with spatial representation and negotiation; therefore the classification of a computer game can be based on how it represents or, perhaps, implements space."* (2007: 44-47) Finally, Henry Jenkins observes that gamers create their own *"mental maps of the narrative action and the story space"* and act upon those mental maps *"to test them against the game world itself."* (Jenkins 2004: 118-130)

The Gesamtkunstwerk

At this juncture it may be appropriate to place Bakhtin's holistic construct of a space/time continuum in juxtaposition to yet another term – this one originating from an entirely different field – namely, Aesthetics: This is the term 'Gesamtkunstwerk' which denotes an idealized union of all arts – from music, dance, and poetry, to visual arts and stagecraft. The concept was formulated during the Romantic period as a reaction against the neoclassical attempt to pure forms of expression that were derived from the material characteristics of the media employed.

Although the 'Gesamtkunstwerk' was formalized as an artistic strategy starting from the 18th century, the practice of it goes back to earlier ages where it is evidenced within a religious context. David Morgan (1984: 20-30) gives an overview of early artistic practices that are akin to the much later formulation of a 'Total Work of Art' by looking at religious architecture from medieval times onwards, and especially as it is evinced during the Baroque period.

Yet another author who traces the presence of the 'Gesamtkunstwerk' to eras during which such works were not yet labeled with such a term but were nevertheless put into practice is New Media scholar Oliver Grau. Unlike Morgan, Grau does not correlate the 'Gesamtkunstwerk' with religious art alone, but gives many examples from secular works, including 360 degree architectures such as the Sala delle Prospettive which is one of the forerunners of the many panorama displays that were popular during the 19th century. Not surprisingly, Grau uses these panoramas as further examples of immersive, participatory architectures/artworks that provide convincing answers to Morgan's question as to what constitutes a 'Gesamtkunstwerk.'

What is of particular relevance to the argument of this paper, however, is that Grau also sees a precedent to Virtual Reality projects in these historic architecture/artworks, saying that the idea of transposing the audience into an enclosed, illusionary visual space was not born with the invention of the computer. Instead it is grounded in a solid art historical tradition whose core idea reaches back to antiquity. It is this tradition that has been revived and expanded in the virtual reality art of the current age; that *"this kind of virtual reality excludes the sensation of being alienated by the image and surrounds the observer in an illusory setting where time and space are one."* (Grau 1999: 365-371)

Metaverse Geography as a Gesamtkunstwerk/Storyworld

When it comes to translating the aesthetic concept of the 'Gesamtkunstwerk' into virtual worlds we arrive at a phenomenon that may, at this moment in time, be only in existence the metaverse – although some resemblances to physical land-art projects can also be found in its workings:

These are all-inclusive art-habitats that are built upon a custom created geography and that incorporate a custom created climate. Such art ecologies are comprised of many interrelated artifacts that provide a complex visual/sonic system that is meant to be perceived in its entirety. What is displayed grows out of its own artificial ecology, meant to be visited and experienced through avatars who are beings that are just as artificial as the ecology that surrounds them. Thus the aim of these projects is to create a continuously engaging experience that finds very easy correspondences to the terms previously discussed in this text – rounding off the components of a creative endeavor which is in accordance with David Morgan's previous definition of the 'Gesamtkunstwerk.' In other words, a

variety of media, creating a unity of effect within an (albeit virtually) physical environment that invites the participation of the viewer as a consolidated whole.

BUILDING STORYTELLING SPACES

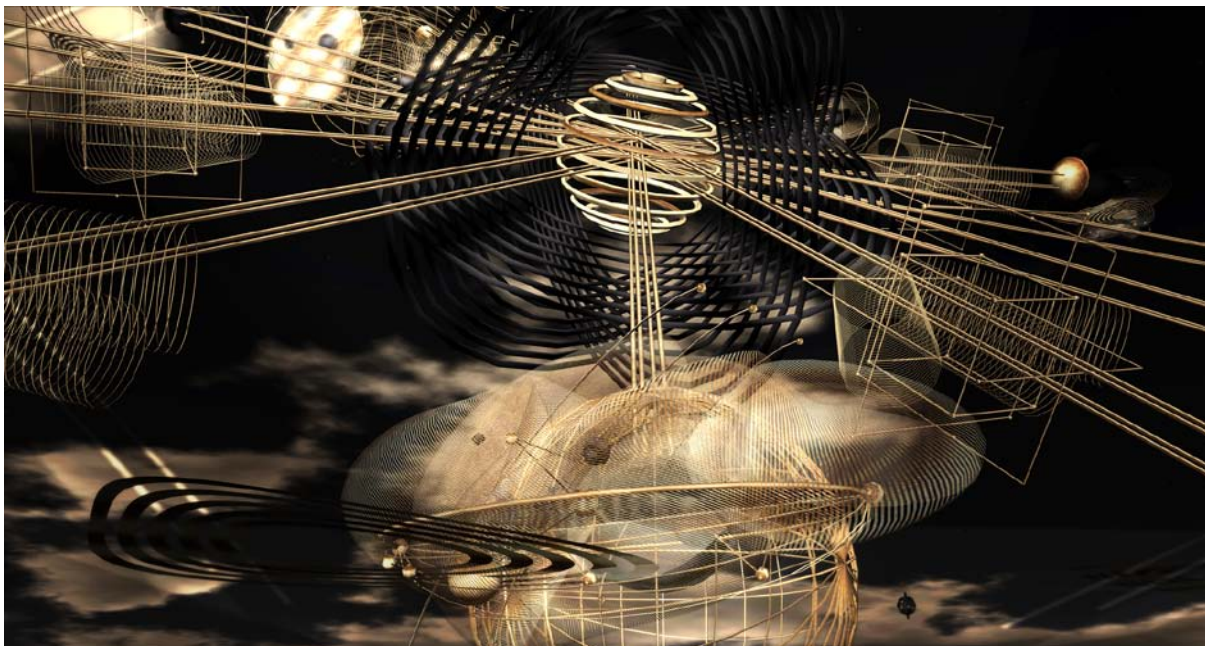
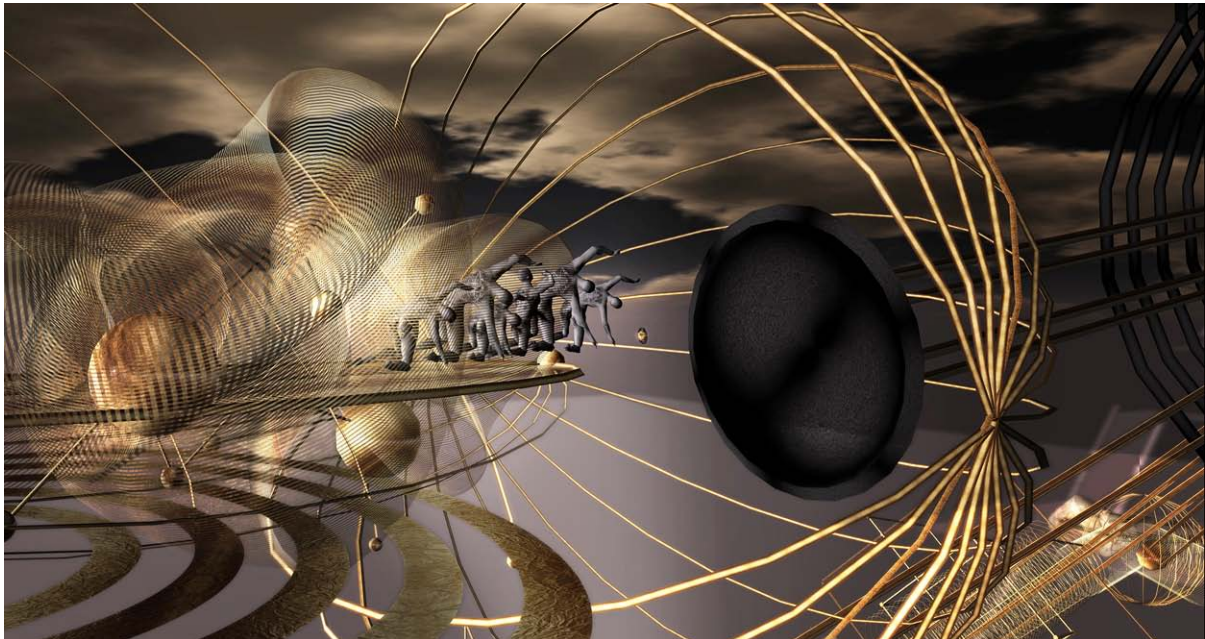


Figure 12 and 13: "The Story of Volund." Elif Ayiter and Heidi Dahlsveen. Second Life, 2015.

My personal focus on 'storyworlds' as a good approach to building in virtual worlds came about through a collaboration with Norwegian storyteller Heidi Dahlsveen which was initiated in 2008. Together we created 3 story-spaces, which have also constituted the material of academic texts. All of these projects revolved around an investigation as to how the tradition of oral storytelling could be successfully translated into an online virtual world in which narrative would be accomplished, not by a storyteller, but instead by avatars who inhabit a story space that consists of a complex architecture and/or ecology placed within a custom designed climate. What was aimed was to create a 'story-world' that revolved around an integrated view of narrative with time and space, in which all components are deemed to be equally important to building a compelling storytelling environment.

Our goal was to create a space following Roy Ascott's concepts of 'distributed authorship' and 'participatory poesis.' (Ascott 2003: 191-208) Consequently, our primary concept was that our project would unfold not solely through our own creative work but rather through its extension into the work of others, who we hoped would become creatively active in the space that we had built for them. We wanted to create a storytelling space where the participants were given impulses to create their own stories. These impulses were provided from three areas: landscape/architecture, characters and static as well as moving poses.



Figure 14: Avatar Jurgen Maurer playing in "The Tower and the Quest" storyworld created by Elif Ayiter and Heidi Dahlsveen, Second Life, 2008. Photographs courtesy of Jurgen Maurer.

We were both aware that a prevalent occupation of our fellow metaverse residents was the creation and enactment of stories that they constructed whilst visiting spaces that were created by others. Very often these visits were undertaken dressed in clothes or artifacts purchased from elsewhere, which were used as elaborate props with which the location visited would be further augmented. The outcomes were virtual photographs, videos and blog posts in which creative work inspired by the visit would be shared. As content creators this chain of artistic activity interested both of us greatly in that it appeared to be very much in synch with online collective and distributed creative endeavors that have been termed as 'Prodsusage' by Axel Bruns, who has brought together the words 'producer' and 'user' in order to describe such creative behaviors and environments. Consequently, 'Prodsusage' defines virtual output that is community-based, while a further characteristic of 'Prodsusage' is also that within such communities the roles of creator and user remain fluid and interchangeable at all times. (Bruns 2008: 1)

Based upon this observation we saw a unique opportunity to pool our resources as storyteller and visual designer to create storytelling spaces that we would present to the usage of our visitors, in the expectation that they would use our combined output as points of trajectories for their own creative work; particularly when it came to creating their own stories that would evolve out of what we put at their disposal.

The frames of all three projects were built on the idea of traditional stories, particularly on how they treat landscape and characters in their narratives. Traditional storytelling is closely related to memory art. A good clarification to this term can be found in Cicero's description of how such memory art arose in the Roman legend of Simonides who had to leave a dinner party and thus avoided being killed when the building collapsed and killed the remaining guests. To remember who was present Simonides reconstructed a mental map based upon the locations of the guests around the table by means of which he could tell who was present.

Location (loci) has thus been central to the history of memory art: *"A mnemonic technique based on spatial and visual logics, the memory palace took root in Ancient Rome, as it was described by both Cicero and Quintilian. Deploying the method of loci, the user essentially maps memories into an imaginary architectural space."* (Uricchio 2012: p.45) Just as it is essential for rhetoric, location is also essential for traditional storytelling since the landscape of the story is being used by the storyteller as

a means of remembering the story. (Dahlsveen 2008) When it comes to virtual spaces however, the great dilemma of creating a landscape in these is that what has been created and used for storytelling purposes is more than likely to disappear within a very short period of time. One does not have a chance to walk through it 5 – 6 years later as one would do in a real city to seek out cultural, historical and personal memories: *"The spaces we traverse are loaded with signification, silent witnesses to the unfolding of the past and active triggers for the associations and experiences of countless other subjects in our present."* (Uricchio 2012 p.47)

From this it may be inferred that such an awareness of the transience and the ephemerality of the landscape may cause the inhabitants of a virtual world to be active in the collection of memories. In other words, the participants of a story-telling endeavor are not merely passive recipients but instead actively *"wandering subjects"* (Uricchio 2012: p. 49) who are the actors of their own stories. The concept of using the avatars of the participants themselves and the virtual landscape that surrounds them in such a way that they can act as mnemotechnic devices which would aid story-telling in a virtual world emerged from this notion which also has its historic precedents, particularly in the work of the mysterious Camillo (1480 – 1544) who created what has been called a 'Memory Theatre.' (Matussek 2012: 8-15) This was a wooden construction shaped like an amphitheater – with the difference that the spectator himself was placed on the stage from where he could look up at seven rows of seats on which pictures were placed in order to 'help' the spectator's memory. Interestingly enough however, the motives of the pictures was not obvious and clear:

"Their meaning is not immediately obvious but rather ambiguous and enigmatic. The images therefore demand mental activity from the spectator. This mental activity is not just logical, like solving a riddle. It takes as its starting point the strange effect produced by the almost surreal allegorical constellation of human and animal faces." (Matussek 2012: 11)

When it came to our projects our constructs were not shaped like 'memory theaters' although their function was the same: We aimed for the memories of the participants to be shaken into activity while they read the landscape/architecture, the characters that were brought into being through the avatar costumes that they could wear; thus becoming compelled to fill in the void by using their own imagination – consequently creating their own stories based upon the initial impetus that we provided.

CONCLUSION

The utilization of virtual worlds for storytelling purposes will in all likelihood continue to be one of the main implementation areas of my virtual building activities, given how easily spoken/textual content can be transformed into visuality, potentially emerging as the three dimensional, virtual continuation of the historic tradition of the illustrated non-textual story book. A further, parallel development may also be the provision of a platform that can revive the oral tradition of storytelling based upon experience, further enriched by the visual/audio content that are the intrinsic features of these worlds.

There is a similarity between the oral tradition of storytelling and a narrative installation in the virtual world, and this resides in the meeting of the story with an audience who is in full expectation of hearing a (sometimes familiar, sometimes as of yet unknown) tale being re-told in a novel and unexpected manner. And the storyteller's art consists of how to compose a story in the here and now, in a novel way, for the current audience. Narrative installations in a virtual world appear to work in a similar way in that visitors can wander in and out of the installations without following a linear direction, entering the story from any point of its unfolding, or indeed at a point of no return.

It is precisely due to this dependency on uniquely individual experiences that stories have a long life: The constant regeneration of experience posits that stories are meant to be perpetually retold. Thus, a story can only be based upon experience and not information, since information alone does not provide us with the prerequisites of perpetually rebuilding experience. In the case of our virtual storyworlds it was things such as the choice of which protagonists to foreground, their depictions and attire, as well as the depiction of the environment in which they were placed, and finally the very non-linearity of the user's actions within this environment, that were expected to build the unique, perpetually re-generated visitor experience.

REFERENCES

- Aarseth, E., (2007). "Allegories of space: the question of spatiality in computer games," in *Space Time Play: Computer Games, Architecture and Urbanism: The Next Level*, F. von Borries, S. P. Walz, and M. Böttger, Eds., Birkhauser, Berlin, Germany, pp. 44–47.
- Ascott, R., Shanken, E. (ed)., (2003). *Telematic Embrace: Visionary Theories of Art, Technology, and Consciousness*, University of California Press, Berkeley, CA., pp: 191 – 208.
- Bakhtin, B., (1981), "Forms of Time and of the Chronotope in the Novel: Notes towards a Historical Poetics," in *The Dialogic Imagination*, Michael Holquist (ed), Austin: University of Texas Press, pp: 84-258.
- Bridgeman, T., (2007). "Time and space," in *The Cambridge Companion to Narrative*, D. Herman, Ed., Cambridge University Press, Cambridge, Mass, USA. pp. 52–65.
- Bruns, A.: Blogs, (2008). *Wikipedia, and Beyond (Digital Formations)*, Peter Lang, New York, pp: 1, 299.
- Cervieri, M., (2007). "User Generated Content in Second Life with Cory Ondrejka," scribemedi.org, (2007) <http://www.scribemedi.org/2007/03/20/2nd-life/> Read on 14/01/2016.
- Deleuze, G., Guattari, F., (1987) *A Thousand Plateaus*, Massumi, B., (transl), University of Minnesota Press, Minneapolis, MN. p: 474-475
- Eno, B., (1995). "Gossip is Philosophy," Wired magazine interview with Kevin Kelly. (1995) [http://www.wired.com/wired/archive/3.05/eno.html?pg=4&topic=.](http://www.wired.com/wired/archive/3.05/eno.html?pg=4&topic=) Read 12/01/2016.
- Goodchild, P., (1996). *Deleuze and Guattari: An Introduction to the Politics of Desire*, Sage publications, London. p: 153
- Grau, O., (1999), "Into the Belly of the Image: Historical Aspects of Virtual Reality," *Leonardo*, vol. 32, no 5, pp: 365-371.
- Heim, M., (1994). *The Metaphysics of Virtual Reality*, Oxford University Press, USA. pp: 42 - 43.
- Herman, D., (2005), "Storyworld." in *The Routledge Encyclopedia of Narrative Theory*, David Herman, Manfred Jahn, and Marie-Laure Ryan (eds), London: Routledge, pp: 569–70.
- Herman, D., (2002), *Story Logic: Problems and Possibilities of Narrative*, University of Nebraska Press, Lincoln, Neb, USA.
- Herman, D., (1999) "Spatial cognition in natural-language narratives," in *Proceedings of the AAAI fall symposium on narrative intelligence*, pp. 21-25.
- Hubert, C., (2007), *smooth/striated*, http://www.christianhubert.com/writings/smooth_striated.html, Read on 15/10/2016.
- Jenkins, H., (2004). "Game design as narrative architecture," in *First Person: New Media as Story, Performance, and Game*, N. Wardrip-Fruin and P. Harrigan, Eds., MIT Press, Cambridge, Mass, USA. pp. 118–130.
- Matussek, P. (2012). Memory Theatre in the Digital Age. *Performance Research: A Journal of the Performing Arts*, 17:3, 8-15.
- McCullough, M., (1996). *Abstracting Craft: The Practiced Digital Hand*, MIT Press, Boston. pp: 213 – 214.

Morgan, D., (1984), *The Cosmology of Philipp Otto Runge and its Influence on his Interest in the Gesamtkunstwerk*, Master's Thesis, University of Arizona, pp: 20-30.

Ong, W. J., (2002). *Orality and Literacy*, Routledge, New York, NY. p: 48.

Uricchio, W., (2012) A Palimpsest of Place and Past: Location-based digital technologies and the performance of urban space and memory, *Performance Research*, 17:3 pp: 45-49