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Film Live: An Excursion into Machinima

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Abstract

Machinima is a technique that relies on the use of 3D game engines to generate a recorded performance in virtual worlds. It is rooted in the gaming community and the interactive access that is part of games' nature but it also applies cinematic language. Technically, it can be realized as a linear video, a recorded event-world, or a 'live performance,' with each form offering different possibilities and limitations. All three forms are interconnected and share some key elements. Four of these elements are the remediation of cinematic effects and of the underlying game engine that leads to a form of virtual puppetry and hyperrealism. These features describe a wide range of expressions – especially concerning the rich visual stylization – as well as severe limitations – particularly in the actors' controls and animations. They position Machinima in a rough framework of expressive features. Offering the highest level of interactive functionality, the 'live performance' Machinima has the most potential for interactive storytelling. Three main examples from different fields exemplify this potential. It is here that Machinima offers access to new forms that combine cinematic visualization and live performance.

Approaching Machinima

Like many good stories this one starts with a mistake. The original word creation 'Machinema,' as a combination of the computer 'machine' and 'cinema,' was misspelled and has stuck as 'Machinima' ever since. Subsequently, Machinima was introduced and defined as "animated filmmaking within a real-time virtual 3D

environment”¹. Machinima is a production technique that relies on the images created by real-time 3D engines such as computer games to create cinematic pieces of computer animation. During that process the game engine effectively operates like a virtual film studio providing access to virtual lighting, staging, and camerawork. As Machinima describes a technique but not its results the initial definition is somewhat unfinished and possibly misleading. As long as it is produced in a real-time 3D engine the result can be either a live performance, a recorded game session, or post-produced linear video clips – all are accepted forms of Machinima. It is obvious that Machinima might be a lot more than its original definition describes – or, if the current wave of enthusiasm fades too quickly without leaving much memorable work, it might dissolve into much less. Various Machinima formats are inventing themselves and the resulting flexibility of their forms poses an interesting challenge to storytellers and researchers.

To investigate this challenge it is necessary to outline a genealogy of Machinima, look at the different origins of Machinima and clarify their differences. Then some stylistic key features of Machinima-specific elements will be identified. Finally, the most interactive form of Machinima will be exemplified with three very different case studies that linger on the edge of typical Machinima production. Instead of a conclusion, this argument closes with a pointer towards possible future use of Machinima.

Tracing the origins

There are various traces of Machinima leading up to its current manifestation. The Machinima community itself sees its origins in the 1980s hacker culture². Different hackers and their groups showed off their coding and hacking skills by generating small signature intro programs – called ‘demos’ – that ran before the main game started. Although small in size, the coders used them as showcases for their skills and some were visually stunning miniature sequences with elaborate sound and

visual effects. Notably, these sequences were not recorded like film but generated on the fly by algorithms. They very often used 3D visualizations based on complex algorithms and thus gave birth to a form of grassroots 3D computer animation. Today the 'demoscene' has developed into its own community that is part of computer art³. At the same time we can trace references to Machinima on the industry side of the game community. Game developers coded simple animated non-interactive scenes – later named 'cutscenes' – into their games. Cutscenes often use the game assets, like characters, levels, and sounds, to deliver little animated sequences that operate in the context of the game⁴. Like the 'demos,' those cutscenes were rendered in real-time from the algorithms in the code, not presented as pre-recorded pictures as in cinema and television.

Enter the 3D game engine and, with it, new plateaus of accessible 3D imagery. The *Doom* game engine⁵ was released by id Software in 1993 and allowed players to log the events during their game sessions and re-visit these recordings as passive onlookers afterwards. Again, these recordings are 'demos' as they do not deliver some extra movie file but log and replay the events and animations inside the game engine. Only if the engine is installed on the computer is a replay of these 'demos' possible. Conceptually, the playing of the game turned into a performance in the virtual world that can be revisited in the 'demo'. Game-based 'demo recording' was born and immediately used to exhibit the skills of players.

Technically, the feature introduced a fundamental difference to the hacker 'demoscene': instead of generating the principal code for the piece, the producers of *Doom* 'demos' operated on top of the provided game code. They might tweak it and add new assets like new virtual characters, levels, sounds, or game modifications, but technically the 'game demos' were dependent on the game engines. On the one side, this allowed access to the game assets and 3D capabilities previously only available to game producers – on the other side it tied the producers to licensed software. The still lasting connection between the game industry and Machinima was

born, and one consequence was the largely non-commercial nature of Machinima until now. Machinima producers are not allowed to generate money from content created with licensed engines without paying the exorbitantly high licensing fees. Alternatively to 'demo recordings,' it is possible to tape the game events directly from the graphics card or computer screen – what might be termed 'reel' Machinima. Instead of a re-enactment inside the 3D game world the animation is recorded in shots taken by predefined camera perspectives within the game world. The final animation movie has to be assembled from these recorded film clips shot by shot – like in film production it does not exist as one continuous performance. Every scene can include its own special set up, can be recorded using multiple takes, and apply sound and editing in post-production. The audience receives a linear movie clip assembled from those scenes that does not need the underlying game engine to be re-played. Not only does 'reel' Machinima improve cinematic narration as it copies traditional film production, but it also made the pieces available to the wider audience that did not have the necessary game installed on their machines, and thus Machinima reached out to a much larger audience.

A last version of Machinima is the 'live performance' acted out inside the virtual world and presented in different formats to the audience. Technical tools like *UnrealTV*⁶ or *Half Life TV*⁷ allow large audiences to witness live sessions of online games resembling a live 'demo'. But 'live performance' Machinima does not necessarily depend on online audiences. It can be performed in front of and in collaboration with a real audience in a theatre. While performances in digital worlds are not new⁸ – theatre productions have been delivered in chat rooms, Multi User Dungeons⁹, and various 3D worlds¹⁰ – the incorporation of the cinematic means allowed for an additional layer in the performance. In 'live' Machinima performance and cinematic mediation merge: the event is constructed as a theatrical live show that applies cinematic camera work and editing. Thus, although 'live' Machinima is a close relative to the virtual theatre movement, it differs as it explicitly includes an elaborate

camera strategy. It is also part of 'reel' machinima, as the single scenes in 'reel' Machinima are performed events, but it differs conceptually: the 'live performance' is a continuous event while the 'reel' version consists of fragmented single shots.

Machinima is flexible, accessible, fast, full of promises and fast-growing, driven by technical advancements in hard- and software development, but it has not yet consolidated itself on any technical or conceptual level. In a repetition of early cinema's history, many of Machinima's milestones are formulated not as artistic expressions of carefully developed ideas but as technical breakthroughs, such as the release of essential coding tools, editors, or new 3D engines. Others are production-defined 'firsts', including the first feature-length film, the first film using a special technique, the first film using a certain engine.

Its range is still widening, with modern 3D engines providing their own Machinima tools (e.g. the improvements of the Matinee features of the *Unreal* engine until *Unreal Tournament 2004*¹¹), games embrace the cinematic aspect in their concept (e.g. *The Movies*¹²) or offer elaborate features to the community to create own pieces (e.g. *The Sims 2*¹³). Machinima has the potential to turn into a thriving form of storytelling based on, but surpassing, the world of computer games. It has already influenced commercial television (MTV's *Video Mods*¹⁴), has founded its own film festival (The Machinima Film Festival¹⁵), has entered established events (New York Video Festival 2003, Sundance Film Festival 2005), and is presented in art exhibitions (*Game On*¹⁶; Banff's *Interactive Screen Workshop 2004*¹⁷); it has been covered in books, international press, and TV documentaries as well as in numerous online forums. Although the form still struggles for wider recognition it offers an exciting new field on the borderline of cinematic forms and interactive entertainment that needs to be explored by artists and researchers.

Features of the form

Confining a fast-improving artistic technique such as Machinima to any specifics is daunting, but one can trace some common stylistic features that exist within all formats, as they are based on Machinima's close relation to 3D game engines. These points are general indicators of the current state and will need adjustments as Machinima evolves. They are not a list of practical elements, as Salen quotes from the Strange Company guidelines¹⁸, but references of computer animation elements in the light of Machinima production methods.

Remediating the game

Bolter and Grusin introduced the concept of 'Remediation' to digital media that describes "the representation of one medium in another"¹⁹. It describes the use of many pre-existing media elements in newer formats. As one has to differentiate between computer games and Machinima pieces as two different digital forms, a tendency in the Machinima artifacts to remediate the content of their underlying game engines becomes apparent. With the re-use of game-specific textures, characters, levels, and sounds, Machinima are often becoming engine-specific. One can tell by the look of the Machinima which engine was used to create it. This stylistic link also gives birth to game-dependent camera effects, editing features, and control of and interaction between characters that shape the evolving Machinima's structural form. The extremely successful *Red vs Blue*²⁰ series by the Texas-based *RoosterTeeth* Machinima group is staged in the computer game world of the computer game *Halo*²¹ without changing any of the game's original elements. The fictional world of the Machinima, its characters, set design, objects, light settings, the extremely restricted use of the camera perspective, and interactive functionality, is that of the underlying game. Even the title refers to the basic premise of the game that sees two differently colored teams fighting against each other in a virtual battle arena. The success of *Red vs Blue* even depends to a great extent on those references and comes to life in

the additions to the given game world. In the case of *Red vs Blue*, the main addition is the well-written and -delivered voiceover dialogue that still refers to the game events but comments on them in a stand-up comedian way.

In contrast, where the underlying 3D engine is not directly derived from a game (or well-camouflaged) the results are less easy to categorize. Fountainhead's *Machinimation*²² toolset hides its underlying *Quake III*²³ game engine, and Machinima developed with this tool show fewer direct references to the original game. Consecutive Machinima experiments at the University of Cambridge and Georgia Tech that used the game-specific *Unreal* game engine and *Virtools*²⁴, a less pre-defined development environment, also indicate that the choice of the engine influences the content – to some extent – of the Machinima piece created with it. Remediating content from underlying engines can be tailored towards a certain audience. The comic setting of *Red vs Blue* loses some of its impact to anybody not familiar with the game or the basic principles of team-based online multi-player shooting games. Thus, one might suspect that Machinima are basically films from and for computer games. Indeed a sub-genre of Machinima, the category of *Quake Done Quick* movies²⁵, consists entirely of recorded documentation of optimal game execution. Although such a specialization seems limiting and is to be overcome, it also offers a unique access to the world of video games.

The influence of game aesthetics and mechanics on cinema from *Tron*²⁶ to *The Matrix*²⁷ has been much discussed²⁸, yet it is Machinima that is the closest situated to the game world. Thus, it offers itself as exploratory means to comment on and elaborate on the expressive features and content of video games. A range of successful Machinima pieces do exactly that: *Bot*²⁹ comments on the single-minded attitude of computer controlled killer-bots, *Smart Gun*³⁰ makes fun of the same issue, *Militia II*³¹ is named after and confined to events in a famous game level. They are a relevant part of the still-forming cultural phenomenon that is the videogame.

On the other hand, the maturing of Machinima led to less game-centered pieces like *Anna*³², or *The Journey*³³ that operate as independent computer-animated shorts. Although technically clearly works of Machinima, they operate outside any game-specific reference frame. They nevertheless have to face some limitations of the production method, and the effects of hyperrealism and of the limited character control that leads to a form of virtual puppetry are two style elements deriving from the game-remediation that need more detailed analysis.

Virtual puppetry

One reason for the efficiency of Machinima is the re-use of game internal assets, such as in-game avatars and their animation system. So far, game characters have been geared towards best functionality within the settings of the specific title. Although Machinima creators can work around this by creating their own characters or adding special animations, some limitations are difficult to resolve within the realms of the game's 3D engine. Facial animation in real-time engines, for example, is still in its infancy. Once new engines (like the *Source* engine that powers *Half-Life 2*³⁴) overcome these limitations, the Machinima community faces the challenge of creating characters that fit these more sophisticated standards. Consequently, the fast production circles have to slow down to allow for detailed modeling, skinning, animating, and refining. The more detailed the animations become, the more the Machinima animation workflow mirrors the time-extensive production of classic computer generated image (CGI) effects. A distinction has also to be made between the animator who hand-codes the character movement and the operator in a Machinima production who uses this animation. Machinima operators activate a pre-defined animation and let their pre-programmed avatar 'enact' it. Movement can be mechanically repeated, but while the traditional animator controls the animation on every single frame, the Machinima operator activates pre-fabricated animation sequences.

One result of this sequencing is that simple actions can pose complex problems in the world of pre-recorded real-time animations. For example, during an experiment that saw students adapting a scene from Curtiz' *Casablanca*³⁵ the movie's original screenplay demands that Rick "walks over to a table and opens a cigarette box, but finds it empty"³⁶. In any traditional film or theatre production such a stage direction would be easy to realize. In a Machinima production 'opening a cigarette box' presents a unique form of animation with a special object and has to be hand-coded. Likewise, most subtle physical interactions between two characters, such as embracing and kissing, are rarely supported or too generic in their appearance in standard 3D games – but they feature heavily in cinematic references like *Casablanca*. The uniqueness of a certain movie star's movement and the mechanical reproduction of any movement in a real-time engine oppose each other, and the limited variety of behaviors of virtual characters does not match the wide range used by trained actors.

One way to avoid such a limitation is to develop new animation forms such as the physics-driven rag-doll animations delivered by the *Karma Physics*³⁷ engine in *Unreal*. It drives the animations through underlying physics calculations, not by an animator crafting the movement in a modeling package beforehand, and provides for easily accessible real-time generated high-quality animations. In addition, automated cloth, skin, and muscle systems will improve the quality of the real-time piece without loading too much new work onto the animator. But despite the developments, current games predominantly use hand-coded animations that are activated at certain moments.

The result of such an indirect character control is an animation style that is close to virtual puppetry. This does not necessarily lead to bland performances, as the limited but effective facial animation of *Hardly Workin'*³⁸ and the performance of *Dance, Voldo Dance*³⁹, based entirely on in-game animation, prove. But it does root the acting element of the characters in a different tradition than the cinematic one. While

cinema's acting style developed from theatrical performances and into its own form, suiting the needs of the camera and especially the close up, Machinima reaches back to the traditions of mechanical puppets that suited the needs of 3D game engines.

Hyperrealism

On the one hand, traditional CGI movies have a tendency towards photo-realism – as exemplified in milestone pictures for the effect genre such as *Terminator 2: Judgment Day*⁴⁰ and *Jurassic Park*⁴¹. On the other hand, we find a trend towards hyperrealism – especially in entirely digitally created pieces such as *Toy Story*⁴² and subsequent Pixar features. Here, the visuals and animation are clearly artificial but quote and comment on real ones through their artificiality.

Similarly, some 'reel' Machinima pieces use a combination of traditional recorded live-action video footage and real-time rendered computer graphics, like *Game:On*⁴³, but the vast majority of Machinima artifacts operate within their 3D engine. Thus, they lack a main motivation for photo-realism – the seamless combination with real photographic images. Instead, Machinima pieces are predominantly examples for a computer-generated hyperrealism. This can allow for new imagery and text generation, as Andrew Darley argues.

Referring to Lasseter's *Toy Story*, Darley detects a 'second-order realism' based on its animation style. He argues further that it evokes an 'uncertainty' in the audience when reading the picture and that this 'uncertainty' is "*the* primary element of reception, entailing a displacement away from concentration on narratives (such as they are) and towards the allure and fascination of the image itself"⁴⁴. Although Darley's conclusion that the image foregrounds the story through – among other triggers – hyperrealism puts too much weight on this effect, his observation that hyperrealism creates a "relatively unprecedented kind of image (and text)"⁴⁵ is correct. The purely digital world has to generate its contents and cannot photograph

existing ones – a major difference to the origins of cinematic realism as outlined by Bazin. While Bazin argued that with photography “for the first time an image of the world is formed automatically, without the creative intervention of man”⁴⁶, computer-generated imagery allows for a generation of the ‘world’ and the picture of it. Realism in CGI turns into a style of the artificially created environment.

The same applies to Machinima but with a significant technical difference: in contrast to the development process of a Pixar movie that sees its graphical style developed from the ground up, a Machinima piece plugs into existing visual delivery formats. It is the underlying 3D game engine that breathes life into Machinima and forces a certain form of *hyperrealism* onto it. Texture size, color depth, and compression, rendering features of the material, number of polygons that can be displayed, complexity of the available animation system and many more details are set by the underlying engine and enforce a certain artificiality – or ‘uncertainty’ – onto the Machinima that uses it. The producers can tweak it and change the animations, textures, and other assets or add to it and apply special rendering effects to it, as seen in *The Search*⁴⁷ or *The Journey*, but have to work with the given settings somehow. While limiting on the one hand, such a pre-set artificiality also provides Machinima with a strong engine-specific identity that successfully distinguishes it from other animation forms.

Ghost Robot’s professional music video *In the Waiting Line*⁴⁸ for *Zero 7* plays with this effect as it uses the cross-references between the video game world and traditional animation. The piece is staged in typical game setting (an empty spaceship floating through the galaxy; a robot as the main protagonist; no facial animation) but driven by traditional storytelling in editing and set up. The result is a fresh visualization based on the stylistic specifics of Machinima.

Uebermediating film

Lacking the technical apparatus of the film camera, computer animation has to simulate camera effects and relies on algorithms to generate elements such as lens flare, motion blur, focus pulling, filters, film grain, or camera movement. Thus, math replaces the physical and optical conditions of the film stock, lens, shutter or iris. The production method is different but the resulting visual effect remains current. Again it can be understood as confirmation of Bolter and Grusin's theory of 'remediation' – this time a remediation of film.

The mathematical effect generation frees these visual effects from any physical precondition. This enables virtual cameras to deliver more camera effects than a physical camera can generate on film. In addition, virtual cameras have complete freedom to move and rotate in the 3D world; even collision is optional. Machinima shares this freedom with traditional CGI, but while the rendering of a complex traditional CGI scene can take a lot of time to optimize, Machinima performs camera work and effects in real-time. The immediate feedback allows for fast tweaking of the visualization – as a result Machinima has been used for pre-visualization of high-end CGI films ⁴⁹ such as Spielberg's *Artificial Intelligence: AI* ⁵⁰. In practice, Machinima can often apply the extreme flexibility of the camera to balance the more rigid character animations.

The result is a spectacular and flexible imagery through the underlying real-time game technology. In fact, the relevance of the technical aspects of game engines has been emphasized to the degree that the story content converges with the technical development history. Andrew Mactavish even argues that a video game's narrative is "about special effects and our astonishment over new developments in special effects technology" ⁵¹.

The *Matrix 4x1* series by *The Strange Company* seems to support this claim, as it consists of short clips with little contextualization that concentrate on a recreation of the cinematic freeze effect made popular by the *Matrix* movies. In a similar fashion *The Search's* appeal concentrates on its use of a graphical shader program that

beautifies an otherwise shallow event. The spectacular visualization replaces a more elaborate dramatic content.

But as at least equally technically advanced productions like *Bot*, *Anna*, or *The Journey* have proven, it is only a meaningful combination of these features that allows for an optimal impact. Special effects and cinematic mediation are part of the language of these Machinima pieces, not their principal story⁵². This is especially apparent in the role of the virtual camera that provides a narrative perspective into a virtual world that has been widened by the larger freedom in Machinima. Mastering this newfound freedom is part of the growth process of Machinima, and the early examples of technical showcases can only indicate later content-driven use of the tools. While many Machinima films struggle to live up to the cinematic standards, 'uebermediating film' points towards possibilities beyond traditional film and into the possibilities of Machinima itself.

The elements identified here are closely interconnected and interdependent – all of them are changing with the ongoing development of Machinima. They identify nevertheless some unique elements of its technical origin that provide an angle towards Machinima's past, present and future development. Following the evolution of these core elements over time will provide an initial analytical perspective as well as an entry point for Machinima artists and analysts.

New story worlds

Apart from offering a specific aesthetics, how do the available features translate into new forms of storytelling? While 'reel' Machinima succeeds in delivering linear computer animation with low development costs and fast production cycles, it provides a limited range of new forms of interactive storytelling. Instead, it heads towards linear video formats. Focusing on *interactive* cinematic storytelling, the 'live' Machinima approach stands out as the most promising form. The combination of live

performance and editing mirrors live TV production methods but adds the specifics of digital 3D worlds that allow for a variety of narrative forms. They are unique combinations of performances and cinematic visualization – a form of playing a film. As they offer a new functionality non-existent in traditional media ‘live’ Machinima will be explored in more depth and illustrated with three examples – one from the Machinima community, one from a research group, and one using ‘live’ Machinima in an educational environment – will illustrate the flexibility of this manifestation of Machinima and the richness of its results.

The New York based *ILL Clan*⁵³ grew from a group of dedicated video game players into a prominent Machinima production group that works with ‘reel’ as well as with ‘live performance’ Machinima. For the latter it combines cinematic camerawork with live improvised performances and generates a form of improvisation theatre that can be compared to live televised Theatresports shows but uses virtual sets and actors to replace the TV studio set-up. In their performances, *Common Sense Cooking*⁵⁴ and *On the Campaign Trail with Larry & Lenny Lumberjack*⁵⁵, the *ILL Clan* first establishes the illusion of a simulated TV/ film situation in the performance. Then, they break the illusion by addressing the audience and reacting to its responses in *Common Sense Cooking*, and in a question & answer session in *On the Campaign Trail*. Thus, they play with the difference between theatrical performances and non-interactive television broadcasts.

Until this point, any combination of real-time performances inside the virtual world with cinematic camerawork and audience interaction depended on powerful computer set-ups and experimental software that confined it to high-tech labs like the ATR research labs⁵⁶ or the MIT MediaLab⁵⁷. Now, it becomes accessible to a wider user-base and open for artistic experiments dealing with the huge variety of effects that become available through the flexible relationship between cinematic appearance and theatrical event generation. For example, when the virtual actors in

On the Campaign Trail step out of the virtual scenery of the simulated newsroom, they play with the flexibility of space in Machinima pieces. Neither TV nor theatre, with their dependency on physical sets, can offer a comparable effect without using elaborate and complex special effects.

The work of Steve Benford, Chris Greenhalgh and others at the Mixed Reality Laboratory, Nottingham addresses the blurring borderlines of actors and audiences in virtual environments. Their various 'inhabited television' projects combined live performances in a multi-user online world with virtual camera-work, delivered by in-world camera-operators⁵⁸. Originally, these projects were structured to foster community building in online worlds and aimed at increased involvement of audiences through the dramatization of the events. Cinematic visualization became an important element in this engagement process and, like the Machinima community, they experimented with different recording methods, including the 'demo' format⁵⁹. Yet a defining element in the original 'inhabited television' approach is the use of Machinima to form and engage virtual communities. Passive onlookers are encouraged to log on to the virtual world and participate directly with the unfolding events. This opens up new possibilities for interactive television and, in fact, has been used early on in the 'inhabited television' history by commercial broadcasters BSkyB, in the case of the *Ages of the Avatar* project⁶⁰, or Channel 4 for the *Heaven & Hell* project⁶¹. During these broadcasts the main interactive access remained confined to the virtual world, with the television audiences limited to watching the video streaming from the virtual environment into their TV sets. But the live broadcast of *Heaven & Hell* allowed TV audiences to log on and witness the event, meet other users, and discuss the actions inside the virtual world while watching them simultaneously on TV. Combining 'live' Machinima forms with such cross-media audience engagement highlights the value of the form for the interactive television area.

Finally, the author's own academic work with students at the University of Cambridge and the Georgia Institute of Technology's School of Literature, Communication & Culture points to other, yet unexplored mixed forms. It focuses on the experimental value and accessibility of Machinima, and, although less technically advanced as the aforementioned pieces, it demonstrates the value of Machinima for educational purposes in a curriculum focused on media studies. The students are encouraged to explore new narrative options through Machinima techniques.

One group of Georgia Tech students (Devin Grey Hunt, John Adam Reks, and Anil Rohatgi) followed their 'live' Machinima assignment by creating a hybrid that incorporated three different concepts on the borderline of performance, cinematic visualization and user-engagement. Technically, their 2004 project *The Beast* used the *Unreal* engine with additional coding to allow for the necessary adjustments.

Their introduction to the virtual world consisted of a linear 'reel' Machinima that outlined the basic premise of a detective-mafia confrontation staged in an American speakeasy during the 1930s. The central part was a live performance in which two or three members of the audience played Blackjack with the two main virtual characters on a shared gambling table inside the speakeasy. The stage setup saw the virtual table extending into a physical half in the 'real' world, with two 'acting' avatars on the virtual side and real human players on the physical end of the table. Finally, the card game ends as an argument erupts and the virtual speakeasy is invaded by computer-controlled detectives and mafia henchmen that start an unscripted AI-driven firefight. The scene culminates in this last stage in a game – and film genre – typical bloodshed. Artificial Intelligence in the performance of the fighting bots, cinematic visualization in the introduction as well as during the performance and the fire fight, live performance and user interaction in the last two stages are combined in one continuous Machinima. Although the expressive staging was not yet optimized and the content rushed into the prototype stage, it not only demonstrated the value of

Machinima for classroom experimental purposes in higher education but it also exemplifies the accessibility of fresh narrative settings through the world of Machinima.

More to meet the eye

There are no final words on the world of Machinima but pointers to interesting types of interactive storytelling that emerge from it. Born from the game-code culture and heading towards cinematic riches, a number of stylistic features have been identified. Remediation of the underlying game engine leads to a form of *hyperrealism* and puppetry in the actor control that is balanced with an 'uebermediation' of visualization features. Although the most prominent commercial successes so far are found in the 'reel' Machinima type, the 'live performance' examples demonstrate the easy access to forms of interactive storytelling that were confined to exclusive high-tech labs before the advent of Machinima. They not only show the spreading of the technique into different professions and communities but also a range of future applications for Machinima.

So far, the different forms of Machinima are heavily intermingled and able to take advantage of each other, but a distinction seems likely at some point. While the 'reel' Machinima actively pushes forward into the world of commercial television, cinema, and linear computer animation, the 'live' form might be closer to world of the video game and performance.

Before it can (financially) succeed in these various areas, Machinima producers have to solve the legal gridlock concerning the use of the patented 3D engine. As long as the Machinima production studios cannot license their underlying engines or find another agreement with the producers they remain in an artistically free yet financially insecure position. On the other hand, if the framework for production and distribution falls in place Machinima should continue to offer an interesting new way not only for traditional animation but also for new forms of interactive storytelling.

One interesting feature of experimental filmmaking with Machinima is the dominance of the narrative form. In contrast to many other experimental film techniques nearly all Machinima pieces have a basic narrative form. The structure can be extremely simple or highly elaborate; a simple progression through a certain game level or a feature-length conspiracy story, a basic narrative concept is present in most pieces available so far. The dominance of narrative might be a result of the depiction of movement through virtual space, which is understood as a travel and the description of such a travel leads predominantly to a narrative form⁶². Although many pieces do transfer this travel idea onto other genre such as the music video (*Shut up and Dance*⁶³) or present it as an anarchic spontaneous visual collage (*Unframed Shorts #1*⁶⁴) a more daring and further reaching exploration of non-narrative pieces using Machinima would offer a new and barely explored field for artists. Some experiments like *Fake Science*⁶⁵ provide first entry points into this area but can only indicate the undeveloped potential.

Already, the Machinima movement has turned into a hotbed for video artists driven by the seemingly ever-improving capabilities of real-time 3D engines, their immense commercial success, and the growing base of creative producers and audiences. Its huge artistic potential comes from the combination of a fast improving underlying technology and its impact on the artistic realization of the piece. Through its underlying production technique, Machinima can reach out into new experimental areas of video production, interactive storytelling, and performance art. And in this early stage of its development there are many unexplored areas within these fields. Its promises are there to be seized.

Anmerkungen

¹ Marino, Paul. 2004. *3D Game-Based Filmmaking: The Art of Machinima*. Scottsdale: Paraglyph., 1 also at Academy of Machinima Arts & Sciences, Inc. <http://www.machinima.org> Accessed February 17, 2005; most of the here mentioned Machinima pieces can be downloaded at <http://www.machinima.com> Accessed February 17, 2005

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- ² Marino 2004; also: Salen, Katie. 2002. "Telefragging Monster Movies." In *Game On: The History and Culture of Videogames*, ed. by Lucien King. London: Laurence King Publ.
- ³ see The International Scene Organization, "Scene.org" <http://www.scene.org/> Accessed February 17, 2005
- ⁴ Klejver, Rune. 2002. "In Defense of Cutscenes" In *Proceedings of the Computer Games and Digital Cultures Conference '02*. ed. by Franz Mäyrä. Tampere: Tampere University Press.
- ⁵ *Doom*, 1993, id Software, publ. by id Software
- ⁶ based on the *Unreal* engine first release: *Unreal*, 1998, Digital Extremes/ Epic MegaGames Inc., publ. by GT Interactive Software Corp.
- ⁷ based on the game *Half-Life*, 1998, Valve, publ. by Sierra On-Line Inc.
- ⁸ Giannachi, Gabriella. 2004. *Virtual Theatres: An Introduction*. London/ New York: Routledge.
- ⁹ Laurel, Brenda. 1993. *Computers as Theatre*. Reading: Addison-Wesley Publ.
- ¹⁰ Slater, Mel, Jonathan Howell, Anthony Steed, David-Paul Pertaub, Maia Gaurau and Sharon Springel. 2000. "Acting in Virtual Reality" In *Proceedings of the Third International Conference on Collaborative Virtual Environments CVE '00*. eds. by Elizabeth Churchill and Martin Reddy. New York: ACM Press.
- ¹¹ *Unreal Tournament 2004*, 2004, Epic Games, publ. by Atari Inc.
- ¹² *The Movies*, TBP, Lionhead Studios, publ. by Activision Publishing Inc.
- ¹³ *The Sims 2*, 2004, Maxis Software Inc., publ. by Electronic Arts
- ¹⁴ *Video Mods*, 2004+, MTV2; the show does not use Machinima per se but closely imitates Machinima's look and feel by re-using game character models
- ¹⁵ held in Mesquite, Texas in 2002 and in the American Museum of the Moving Image, New York in 2003
- ¹⁶ *Game On*, 2002, in London's Barbican
- ¹⁷ *Interactive Screen Workshop*, 2004, in Banff
- ¹⁸ Salen 2002, 108f
- ¹⁹ Bolter, Jay D, Richard Grusin. 1999. *Remediation: Understanding New Media*. Cambridge, MA/ London: MIT Press. 339
- ²⁰ *Red vs Blue*, 2003-, created by Bernie Burns, publ. by Rooster Teeth
- ²¹ *Halo: Combat Evolved*, 2001, Bungie Software, publ. by Microsoft
- ²² *Machinimation*, 2002, Fountainhead Entertainment., publ. by Fountainhead Entertainment.
- ²³ *Quake III: Arena*, 1999, id Software, Activision Publ.
- ²⁴ *Virtools*, 1999, Virtools S.A., publ. by Virtools S.A.
- ²⁵ see <http://www.planetquake.com/qdq/>
- ²⁶ *Tron*, 1982, Steven Lisberger
- ²⁷ *The Matrix*, 1999, Andy and Larry Wachowski
- ²⁸ Manovich, Lev. 2001. *The Language of New Media*. Cambridge, MA/ London: MIT Press.; also: Darley, Andrew. 2000. *Visual Digital Culture: Surface Play and Spectacle in New Media Genres*. London/ New York: Routledge.
- ²⁹ *Bot*, 2004, Tom Palmer
- ³⁰ *Smart Gun*, 2003, Mike Berry
- ³¹ *Militia II*, 2002, Daniel "The_Family_God" Frome
- ³² *Anna*, 2004, Katherine A. Kang
- ³³ *The Journey*, 2004, Friedrich Kirschner
- ³⁴ *Half-Life 2*, 2004, Valve, publ. by Vivendi Universal Games
- ³⁵ Nitsche, Michael, Maureen, Maureen. 2004. "Play it again Sam: Film Performance, Virtual Environments and Game Engines" In *New Visions in Performance: The Impact of Digital Technologies*. ed. by Gavin Carver and Colin Beardon. Lisse: Swets & Zeitlinger
- ³⁶ Epstein, Julius J., Philip G. Epstein and Howard Koch. 1942. *Casablanca*. (unpublished screenplay), 101
- ³⁷ originally developed by Math Engine in 1999 now implemented in various games
- ³⁸ *Hardly Workin'*, 2002, ILL Clan
- ³⁹ *Dance, Voldo Dance*, 2004, Baint
- ⁴⁰ *Terminator 2: Judgment Day*, 1991, James Cameron
- ⁴¹ *Jurassic Park*, 1993, Steven Spielberg
- ⁴² *Toy Story*, 1995, John Lasseter
- ⁴³ *Game On*, 2004, Ethan Vogt
- ⁴⁴ Darley's italics; Darley 2000, 84
- ⁴⁵ Darley 2000, 85

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- ⁴⁶ Bazin, André. 1967. *What is Cinema?* (selected and translated by Hugh Gray) Berkeley/ Los Angeles: University of California Press. 13
- ⁴⁷ *The Search*, 2003, Noam Sher
- ⁴⁸ *In the Waiting Line*, 2003, Tommy Palotta
- ⁴⁹ Lehane, Scott. July 2001. "Unreality: ILM Creates Artificial Cities for Artificial Intelligence." *Film and Video* 18(7) (online magazine)
http://www.filmandvideomagazine.com/2001/07_jul/features/A.I/unreality.htm Accessed February 17, 2005
- ⁵⁰ *Artificial Intelligence: AI*, 2001, Steven Spielberg
- ⁵¹ Mactavish, Andrew. 2002. "Technological Pleasure: The Performance and Narrative of Technology in Half-Life and other High-Tech Computer Games." In *Screenplay: Cinema/ Videogames/ Interfaces*, eds. Geoff King and Tanja Krzywinska. London: Wallflower Press. 43
- ⁵² see also: King, Geoff. 2000. *Spectacular Narratives: Hollywood in the Age of the Blockbuster*. London/ New York: I.B. Tauris Publ.
- ⁵³ see: <http://www.illclan.com/>
- ⁵⁴ *Common Sense Cooking*, 2003, ILL Clan (performed at the Florida Film Festival 2003)
- ⁵⁵ *On the Campaign Trail with Larry & Lenny Lumberjack*, 2003, ILL Clan (performed at the Machinima Film Festival 2003)
- ⁵⁶ see their Interactive Movie System; Nakatsu, Ryohei/ Naoko Tosa and Takeshi Ochi. 1998. "Interactive Movie System with Multi-Person Participation and Anytime Interaction Capabilities" In *Proceedings of the Sixth ACM International Conference on Multimedia: Technologies for Interactive Movies*. ed. by Ryohei Nakatsu et al. New York: ACM Press.
- ⁵⁷ See the work of Glorianna Davenport's Interactive Cinema group <http://ic.media.mit.edu/>
- ⁵⁸ Benford, Steve, Mike Fraser, Gail Raynard, Boriana Koleva and Adam Drozd. 2002. "Staging and Evaluating Public Performances as an Approach to CVE Research" In *Proceedings of the Fourth International Conference on Collaborative Virtual Environments CVE '02*, eds. by Chris Greenhalgh and Elizabeth Churchill. New York: ACM Press.
- ⁵⁹ Craven, Mike, Steve Benford, Chris Greenhalgh, John Wyver, Claire-Janine Brazier, Amanda Oldroyd, Tim Regan. 2000. "Ages of Avatar: Community Building for Inhabited Television" In *Proceedings of the third international conference on Collaborative virtual environments*. eds. by Elizabeth Churchill and Martin Reddy. New York: ACM Press.; also: Craven, Mike, Ian Taylor, Adam Drozd, Jim Purbrick, Chris Greenhalgh, Steve Benford, Mike Fraser, John Bowers, Kai – Mikael Jää-Aro, Bernd Lintermann, and Michel Hoch. 2001. "Exploiting Interactivity, Influence, Space and Time to Explore Non-linear Drama in Virtual Worlds" In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. eds. by Julie Jacko and Andrew Sears. New York: ACM Press.
- ⁶⁰ Craven et al. 2000
- ⁶¹ Benford, Steve, Chris Greenhalgh, Mike Craven, Graham Walker, Tim Regan, Jason Morphett and John Wyver. 2001. "Broadcasting Interaction from within Collaborative Virtual Environments." *ACM Transactions on Computer-Human Interaction* 7 (4): 510-547
- ⁶² Fuller, Mary, Henry Jenkins. 1995. "Nintendo® and New World Travel Writing: A Dialogue" In *Cybersociety: Computer-Mediated Communication and Community*. ed. by Steven G. Jones. Thousand Oaks: Sage Publ.
- ⁶³ *Shut up and Dance*, 2004, Ispanian
- ⁶⁴ *Unframed Shorts #1*, 2005, Unframed Prod.
- ⁶⁵ *Fake Science*, 2002, Dead on Cue