

Time in virtual worlds is not the same as in real life: in virtual worlds there is a different experience of time. This paper will prod at the many levels of time experienced in virtual worlds, juxtaposing them with time experienced in their precursor video games and time experienced in the real world.

As it has been said, one year in *Second Life* corresponds to five years or more in real life. Residents of SL often remark upon this as they discuss the progression of relationships in SL – people are astounded by the immediate intimacy and quick narrative every relationship seems to develop. Is this a function of “time travel” in SL? However, this does not mean the sense of time travel in the traditional sense – to other historical periods – since in SL this is not a possibility. Rather it is a sense of a compressed time, wherein relationships develop more quickly than in Real Life, where they take much more time to define themselves.

The compressed distance and time, the distilled social interactions, the lack of real life biological or physical needs all add to this acceleration of time. Additionally, time is warped as history and narrative combine and interact with real life time, with both playing off each other. So how does ‘history’ function in such a warped time? Is there an inner history, defined inside that world? Yes, there is. And how much does this history collide and overlap with Real Life history? These worlds are dominated by trends, they gravitate around them, and these trends highly contribute to define the speed of the time. Every day in virtual worlds, the residents of these environments write a parallel history: they create new relations and change old ones; they move from one group to another; they contribute to making some locations popular and transforming some to ghost towns; they create hype for some events and attract people to certain places. In other words, there is a lot of movement in these worlds. At any time there are inner movements strictly related to these worlds that seem to spring up organically, and for this reason we could use the term “endogenous movements”. Speaking of organic systems, Paul Ricoeur in *Time and Narrative* remarks:

“A third general characteristic, which has immense implications in the case of narrative, runs as follows. Among the structural properties of a linguistic system, the most important is its organic character. By this we are to understand the priority of the whole over the parts, and the hierarchy of levels that result from it”. (Ricoeur 1984-88, vol. 3, p. 31)

There is an internal time, defined by endogenous movements, but the chronology of virtual worlds can also be affected by Real Life. Sometimes there are points of contact between real life and virtual worlds: for example, the IBM strikes of fall 2007 and spring 2008 took place in SL but they concerned people in real life protesting for something in a particular moment, the same moment in SL and in RL. In this case, the virtual time and the RL time overlapped. The same thing occurs



Chronology and Historicization in Virtual Worlds and Video Games

Mario Gerosa,
Jennifer Grace-Dawson

in concerts broadcasted live in SL using streaming technology: there is a superimposition of the two times (in-world time and RL time) that for a moment become just one. However, when these moments of overlapping are gone, the two chronological times become different again. Second Life is set in a world that could be contemporary to ours. Are we sure about that? Does the life spent in SL correspond exactly to 2008? Is there time travel in SL? The relation of the history in video games with the history in real life is very important. The same issue must be verified for history in social virtual worlds and in real life. Let's take Second Life. There we have a history defined by the cultures grown in that world. These are not the cultures of the real world, but we must also notice that some of these cultures are derived from the real world, especially from literary contexts. Among the cultures of SL we have the Goreans, the vampires, the steampunks: these are peculiar, inner cultures, with their history and their chronology. The inspiration of these cultures come from Real Life, especially from novels, movies or other literary sources, but only as a springboard. They become original and write their own stories and chronicles, moving far from their first inspiration. This is, in fact, similar to the process of colonization in the XIX Century as described by Brian Street. The ones who see and describe these cultures seem to simplify them:

“The growth of Empire at this time and the experiences of so many travelers in distant, exotic lands provided a ready-made alternative, and from the 1870s onwards fiction took up the theme. The ‘ethnographic novel’, estranged in time and space from the claustrophobic Victorian drawing-room, became popular”. (Street 1975, p. 4)

We also have many people and features that continually refer to real world time, creating a chronological interface between real and virtual worlds. In fact, SL has a



clock in the upper right hand corner, reminding users of the actual time in California, in which Linden Labs is based, which corresponds to ‘SLT’ or “Second Life Time.” In fact, in discussion of in-world time of a virtual world, we should consider this phenomenon in its complexity, since there is not just one inner time. In Second Life, for example, there are many time zones at the same time and this way complicates communities and creates some sort of “super time.” All appointments and events are scheduled on Second Life time. Residents have to “do the math” to correspond their RL time to SL time and make sure they synchronize with their fellow residents for meetings. The interesting question is whether having residents living in different time zones also contributes to a different idea of time? Is there a chronology of the different characters of video games and virtual worlds, related to the periods in which video games and virtual worlds are set?

We can also talk about time in virtual worlds in another manner, categorized by the kind of activity involved. In SL, this can be varied, as the world is open to many different activities. There may be time for play, time for shopping, time for dressing and adornment, time for business, time for discussion, time for building, time for rehearsal, time for learning and teaching. The ‘narratives’ in these times overlap, as they do in real life. If we consider the life in virtual worlds referring to one of these concepts, the idea of time radically changes. The time of play is very difficult to fix in place, it is almost impossible to freeze it, it continually changes. The time of fashion is a little bit more defined, since it responds to the major in-world trends. The time of business sometimes overlaps and mirrors the time of real life.

Time in real life is defined by actions that take place du-

ring every single day – routines that spell the typical day (breakfast, work, lunch, work again, dinner, etc.). In SL it is different. There are not usually repeated actions, at least if we talk about the majority of the residents: one day I can log in during the evening and stay in-world two hours, another day I could be there all the day or just five minutes. And there are not repeated actions like in RL. One of the reasons is that in SL we have not a common solar system that defines the parts of the day: we can change the intensity of the sun when we want – we are masters of time.

In video games, especially in single-player ones, the concept of time is different. There we have a time that does not go in only one direction, but back and forth. In video games, time can return, there is the concept of replay, of a second chance (or a third, or more, to live again a certain situation, an entire period of time). If the player fails something, he can try over and over until he succeeds and then finally breaks through to the next time period. However, in Second Life, things change quickly, and we cannot come back to live again a certain moment. In SL the past does not come back as in video games because ‘life’ is ‘lived’ in “real time.”

Functioning in video games differs markedly from functioning in virtual worlds in another way. The skill of the player has a greater impact on the resolution of the video game over the open-ended ‘life’ in a virtual world. In video games we have the personal chronology of the gamer. The ‘speed’ of the game is defined by the skill of the player in making progress the game. Someone can finish *Gears of War* in 3 days, some others in 3 months. In Second Life, residents increase their skills with the interface and the virtual world that assist in later accomplishments, but there is no termination or resolution of



Fig. 1 – Evolution of Lara Croft © Eidos

the narrative of life in the virtual world. However, time does march on. In video games, there are benchmarks that mark particular time intervals and help us to define the inner time of a video game. As the video game has a linear narrative to take the player through a set of increasingly difficult skill needs as well as progressions of the story, there are by need some main facts important for the development of the story. In virtual worlds, none of the rules of linearity pass – a resident passes through certain benchmarks, like how to move, how to fly, etc., but they may encounter their need for these skills at different times and as they pursue what they are seeking in the virtual world.

Additionally, time is affected by historicization in a virtual world in a manner that it could not in a video game. The video game has a set narrative. The history is simply the story line that precedes the narrative in which the player enters. The history then becomes the set of learned steps the player progresses through to the final denouement – either the killing of the final beast, the discovery of the treasure. There is no ultimate goal in a virtual world – the progression of a virtual life is as varied as a real life – even more so because the constraints of living biologically are not present. The avatar doesn't grow, doesn't age, doesn't 'develop' as a biological human does. In regards to chronology and historicization, video games highly differ from virtual worlds. As explained, time is marked by a preset narrative in video games that doesn't exist in virtual worlds. But time does pass and does exist in virtual worlds. However, it is different from real life time as it is different from video game time. First of all there is the time determined by the fashion cycles. For example in Second Life we have had different periods related to styles. Users went from avatars with solid hair to avatars with prim hair to avatars with flowing flexi locks. Users decided *en masse* that tinies (anime-inspired small avatars) were all the rage to everyone deciding to don wings and become fairies and angels. Then there is a time related to the idea of the progression of Second Life and how the real world opinions were formed about the virtual world. For example, there was a time in which SL was considered an environment for big companies, then a world of sex, a world of art, etc. As media coverage explored different aspects of Second Life, different populations entered the world, lending new flavors and discourses to the community. The platform itself changed in response to new residents' needs. Then there is a completely different personal time, wherein real life time and Second

Life time coincide but can so in measurably different ways for residents. Some residents use Second Life entirely as an area of play, engaging only in play, be it role playing, sexual, dress up, business, networking. Some use it as a real life business environment, with the trade of reselling Linden services or content for Second Life, engaging in actual monetized business connected to real life businesses, both local and global. Many use it as a personal social networking place, for business, romance, or simple friendship. In so doing, a bridge between the real world and our second lives is made, as the time of living a real life and a second life overlap. So the time of 'play' on Second Life becomes a time of augmentation to one's real life, with real social networking tools built in. So then time is passed connected to real life time experienced not in Second Life, it is a sort of hybrid time then, where the real life and the Second Life combine. As discussed, people in virtual worlds people do not grow old, at least not like in real life. Their appearance can change but there is not a natural progression of aging. But the appearance is not everything. In Second Life you can be very good looking, very smart, but the risk is that you remain entrapped in a certain shape and in a face related to a certain historical period, like if a real life person were confined in a look of the '80s. Your look might be appealing, but you may end up looking dated. This problem could be easily solved by choosing other outfits and by renovating one's own face. But, like in comics, in SL and in other virtual worlds you have to maintain your appearance to be recognized, especially if you are well-known. If you want to be famous you may not be able to change your look. But if you don't change it, you risk looking outdated. The other solution is to change, to renovate yourself, winning time but starting over again on the path of being recognizable and maybe of being a celebrity.

In video games and virtual worlds, where the characters evolve, the question is different. Your level says something about your age – a level 40 character of *World of Warcraft* is surely elder than one with level 20. In Second Life, a sort of aging also occurs. 'Newbies' are recognizable as users who don't know a lot about the world. In addition, residents' date of creation is a readily available piece of information in the profile. However, it is quite different than a video game or real life: in Second Life, you could have registered two years ago and never used your avatar, so your experiences could be quite 'newbie' and not correspond to a genuine experience. In video games and in social virtual worlds we can find a process

of historicization. The characters of the video games do not remain the same as years go by: they slightly change, although they continue to dress with the same clothes and to live in the same locations. They change, but in which way? In fact, generally they do not grow old and they do not change their status. So, apparently there are not significant changes. And the process of changing is the same in video games and virtual worlds? For example, Lara Croft, the main character featured in the popular video game *Tomb Raider*, has experienced an interesting development. The first thing we notice is that from the first episode onwards Lara becomes more realistic, due to the improvement of the technologies. She does not change her basic appearance. She is easily recognizable, since she never changes substantially. She is an icon defined by some 'sub-icons': the braid, the shorts, the two guns, the boots. You could change her face but she would continue to be Lara Croft. So, we aim to consider first the icons of character and afterwards the rest, unless the character changes too much. Over the span of of 7-12 years, the changes may not be easily recognizable, even if the character has grown older. (see fig. 1) To better understand this example, take Harrison Ford in *Indiana Jones*, another icon with his sub-icons (hat, guns, khaki shirt). For many years we did not perceive substantial changes in his character. So, the first thing we notice is that those 'sub-icons' make more difficult to perceive the inner chronology of a video game or of a movie. The same happens in virtual worlds like Second Life. Frank Koolhaas has worn a bowler hat and a goldfish collar for the past year. Until the day he changed this peculiar outfit, he froze time around him.

Imagine now that everyone in a virtual world does not change his own outfit and appearance for years. Would this elude the idea of historicization or is this not sufficient? It is easy to imagine that a large percentage of people remain the same, but at the same moment many new players arrive, defining a passing of time.

With this example we can define two orders of time: the time of people who already spent some years in a virtual world and the time of 'newbies'. We can say the same for a video game: there is a time of the main characters, the ones we knew in the first episodes, and a time of the new characters. Summing up those concepts, we have: the time perceived and lived by the main character; the time rolling around the main character; and the time of the main character vs the time of the newbies. The main character (maybe also other ones) can refrain or even stop the time from running. One way of doing this is by creating an iconic fashion for the character so they are not following fashion movements. If the character did so, he would be tied to a particular chronological moment. However, a question suddenly arises: how an avatar can become out of fashion? In fact, it is true that if I always maintain the same style I will create a slower perception of time (where the time runs more slowly),

but it is also true that I could suddenly appear old and out of time. The possible exception is to become a great classic: if my avatar does get to become a classic, he will not be out of time but beyond time.

Additionally, a resident in a virtual world can carry into the world a complete persona that was developed before they came into the world, so that an entire history of the being precedes their life. An interesting case history regards Anshe Chung, the famous Second Life millionaire. She has become an icon and she is not affected by the run of time. She became an icon by fixing her own time through some big events that were even stronger than the inner time of SL. These events were her portrait on the cover of *Business Week*, in May 2006, and the conference in October 2006, where she announced her first million of US\$ made with transactions for virtual estates. Anshe Chung in a way was able to run faster than time, creating her own time by inventing and placing some important milestones like these events. But she also did more: she created some sort of cross-over chronology related to her character: she already existed in another virtual world, *Asheron's Call*, where she was called simply Anshe. This way she fixed a more complex chronology for her character. She existed before, in another virtual world (*Asheron's Call*), and she emigrated to another world (*Second Life*). This concept is very powerful, either for branding, either for legitimization. Anshe Chung became a 'classic'.

Another character, Aimee Weber, is now the avatar brand of Aimee Weber Virtual Creation and Content, an independent company. Aimee Weber was originally the avatar of Alyssa LaRoche, a young woman who entered Second Life as a resident and became a powerhouse of design and content development within the world. As the business was developed, it was stamped with Aimee Weber's name and her very iconic wings, striped stocks and full ponytails. The company finally copyrighted Aimee Weber's image for use as its mascot and it was taken out of Ms. LaRoche's hands and given its own life. Aimee is the iconic Second Life classic.

We can see the early development of a potential classic in the form of Harper Beresford, an elegant and tasteful Second Life bon vivant. This character is present in many contexts (virtual worlds and social networks) with the same name, it's easier that she becomes a brand. In theory, she should be there at the same time, to spread her fame. Anshe Chung at the contrary decided to be there in different times, making stronger the idea of chronology rather than the one of branding.

The Harper Beresford character (who had different names before entering SL) followed a similar path, on the way of being recognizable: "she always had orchids around her and now find it difficult to character without them. Originally in a textual environment, her name was 'amazon'. With Harper I still have orchids and the orchid tattoo". Here is her description in LambdaMOO:

“amazin is a 5’4” buxom blonde with grey-blue eyes and a soft pageboy haircut. Silver earrings drop delicately from her earlobes and tinkle when she walks, and the faint scent of orchid perfume trails behind her. Don’t be fooled by her appearance though. She can be alternately overbearingly esoteric or downright bawdy, depending on her mood. She carries Michel Foucault’s ‘History of Sexuality, Part 1’ tucked under her arm and she takes to reading it when she is bored. amazin is wearing a mood ring with a lovely umber-colored stone (signifying you have grown tiresome). She is wearing an elegant red dress which barely hides the black orchid tattoo on her left shoulder blade. Sheer black stockings cover her shapely legs, and she is wearing elegant low-heeled black pumps on her petite feet”.

Her character in *Second Life* adopted many of the same characteristics as amazin, especially a black orchid tattoo on her shoulder. Her avatar is known for dressing elegantly with dignified bearing.

Perhaps it’s a feature of this kind of discourse and history that we have to have a common thread running through for the character to be recognizable as itself. For instance, Lara Croft always has a long braid. And Mickey Mouse had big black ears. Are we creating consistent narrative characters when we create an avatar and also is it a feature of some earlier discourse or way that we are now employing this virtual world? However, could a famous avatar like SL Anshe Chung or Aimee Weber be subjected to planned obsolescence or to style obsolescence? We said that the character should not change specific features in order to become a classic. Mickey Mouse did not change his look substantially over the years. But is it the same for a video game or a virtual world character? We should examine the context in which these characters live. Characters like Mickey Mouse are really cross-medial creatures: they are in many environments at one time and the environments in which they live have a certain longevity, say comics, cinema, advertising, theme parks, etc. Sometimes characters like Mickey Mouse are also celebrated by art (think about Andy Warhol) and this way they are introduced in another time dimension. At the contrary, the characters of the virtual worlds are often confined in a closed circuit: it could be the walled garden of *Second Life* or a broader space, like the system of different virtual worlds, but it is a very limited space compared to the ones occupied by popular icons like Mickey Mouse.

For the moment, virtual worlds are quite niche environments: in general, not so many people have a first-hand knowledge of the synthetic universes. This way, also if an avatar becomes a celebrity, he will never be incredibly famous. Probably in the next years this approach will change¹. In fact, a research by Gartner said that in 2011 80% of people using the Internet will have an avatar in a virtual world¹ and that will change the situation. If one acts in a broader space, one can rely on a wider idea of time. If I move in broader spaces

it’s easier for me to elude the pressure of a time and to become a real classic. If a character created for a video game does not go beyond the borders of the video games field, it will be confined in a specific culture, associated to a peculiar period of time. For example, Duke Nukem: he is a character strictly related to video games, and particularly to a certain period of video games history. His personal chronology is very limited.

On the contrary, characters like Lara Croft or Super Mario can rely on many possible chronologies that act in transversal ways: there is the chronology of Lara Croft in movies, the one in the comics, in the action figures, and naturally there is the chronology of her personal history, slowly unveiled in the episodes of the series and filled with the novels of the communities, in the fan fictions. The fan communities often study the characters they like and create episodes to fill the blank spaces. This way we get a richer history, a richer chronology, a less diluted time. If I have many empty spaces in the history of a character, I am free to imagine and there is a fragmented time, with many interruptions and many gaps. It is not a linear time and it’s difficult to define periods and precise ages. But if someone fills all these spaces, the time markers take form and become perceivable. In a virtual world, though, the resident does not have the same kind of history. Other than the ‘classics’, the history of the avatar is generally driven by the user and the history is unwritten. However, an avatar can almost become branded, as Aimee Weber did, nearly becoming cemented in time. The avatar goes from being a personal expression to a commodity then. But when do you lock into it, into being a ‘character’? Scope Cleaver, a famous *Second Life* architect, had a distinctive look: his entire self was made by himself with his own provided content, so it did not correspond to normal avatars. He carried a big cigar and wore black gloves. Recently, Scope Cleaver changed from self-made avatar to something with “store-bought” (other content providers), which enhanced his image. He created an alt that was more attractive than his self-made avatar. The question is, was Scope Cleaver recognizable enough in his original avatar to disturb his image? There is another consideration to make: the difference between SL and a video game is that in the creation of the avatar, you are not simply buying into a brand or choosing from a set number of avatar combinations. The combinations for an SL avatar are infinite as more and more content gets provided in the form of clothes, skins, prim avatars, hair, etc. As a player continues to live in SL, the technology changes, the offerings change, so you have time moving in two different levels: the time of the life of the avatar and the time of the things going on around that player in the form of content creation.

This history is hard to pin down – it’s not predicated on natural disasters, etc. It might be predicated on political changes (SL changes code, policy, people get on a bandwagon about intellectual property, technology changes



to increase the number of sculpties, etc.) It is, in and of itself, an object of commodity much as the RL body.

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Conclusion: Getting old

There are two registers of obsolescence in virtual worlds: the obsolescence of people and the obsolescence of things. In virtual worlds, the avatar could remain always young but his outfits could ‘look’ old, being related to a previous period. They could also look out of fashion, related often to new content being added to the available resources or new technology making content looks change. In Real Life it is different: generally you become old but your outfits are generally new and fashionable, related to the period in which you are living.

An avatar can become out of fashion simply by not following the technological advances available to the making of it. So even though Lara Croft appeared the same, certain details changed from game to game due to the impact of fan input as well as the pressures of discourse from current video game and anime fashions of the time. More importantly, the character’s look changed based on the progression of graphics technology – they could make Lara look more ‘realistic’ with finer pixilation and better animation than they could previously. The impact of technology on virtual fashion has an even more impressive effect than it would in Real Life fashion because the developmental timeline for such changes is more immediate and less physically impossible. For example, as innovation has occurred in SL, Frank Koolhaas has been ‘upgraded’. Whereas he

wore smaller resolution clothing, used an avatar with less sophisticated object attachments, and sported a much more ‘cartoonish’ look, now Frank wears ‘prim’ hair and shoes and wears a more photo-realistic clothing set. This is the result of new technologies being introduced to Second Life through its parent company, Linden Labs, but also the innovation of resident content providers using tools to achieve the newly fashionable looks. To illustrate this, one content developer created a means of making ‘fur’ in PhotoShop. Suddenly everyone was making fur in PhotoShop, and customers were donning fur as the latest trend. A developer came up with the idea of making prim wings and wings enjoyed a wave of popularity throughout SL. In fact, entire aesthetics were developed around wings including pixie avatars, sims for elves, and angel groups. And the use of the ‘flexi’ prim has become one of incredible inventiveness as skirts, scarves, laces, bows, hair and anything that might move in a piece of fashion have been created.

As Linden Labs introduced the ability of users to bring in ‘sculpties’, a prim whose shape is determined by an array of x, y, z coordinates stored as RGB values in an image file which allow for more organic shapes to be made in SL. This opened up a whole new range of possibilities for SL users to make shapes that were not completed through the onerous task of manipulated multiple prims into place. Additionally, the use of sculpties makes it easier for builders to stay within “prim limits” on building as each sculpt is one prim rather than multiple. Sculpties have allowed designers to revolutionize fashion, first with sculped shoes and into things such

as collars, etc. Designer June Dion, of Bare Rose, now uses sculpties almost exclusively. Raven Pennyfeather uses them as touches and accents and offers a new set of accessories based on them.

Amazingly, the development of technological revolutions shows up throughout the history of “real life” fashion. People now use synthetic fabrics that suit the functionalism of daily life – washable, not easily wrinkled, breathable, recyclable. The introduction of new technologies simply suits other ‘physical’ needs in SL.

Fashion is not tied to a particular moment and in SL is explicitly postmodern as it is a mish mash of cultural cues from different times. Therefore, time can’t be marked by the indicators of a particular fashion. The aesthetic is very specific to Second Life mores but is tied into Real Life influences such as current fashion, fashion magazines, street fashion, anime, video games, etc. The fashion is an object of individual users’ needs in their Second Life, ranging from role playing to complete replication of their Real Lives. Elements from different historical periods are combined on avatars without any attention to historical accuracy. For example, the ‘steampunk’ look, derived from the scientific romance genres of authors such as H. G. Wells, but brought into a cyberpunk currency, is probably derivative of anime and video game uses of the aesthetic.

Another issue is related to the usage of things: in certain virtual worlds, like World of Warcraft we have this issue and it bears on the concept of time. That means that in these virtual environments there is an idea of obsolescence: after a certain period of time, certain objects used in-world change their appearance, looking old and used. In other virtual worlds, like Second Life, this function does not occur.

Additionally, the breadth of fashion available to avatars and the ease with which appearances can be changed make time seem to pass more rapidly. Female avatars supposedly change their clothes four times a day, for example. This happens in Second Life, for example during a party, where the same female avatar can change her outfits 3 times in a hour, but also in virtual worlds like Entropia Universe, where in a day there are different activities (social events, monster fights, training) and one has to change her clothes in order to enter these different occupations. The constant flow of image is an anathema to this idea of timelessness and defies time. Other related issues are memory and archive. There is not a transversal chronology of virtual worlds with data taken from different worlds and from reality, referring for example to the scientific expeditions made from Real Life to virtual worlds or from one virtual world to another. This way, we risk making the same errors again, without noticing it, because there is no history. If no-one writes the history of inventions or the one of famous enterprises, we could risk making the same mistakes again and living the same time again. Time is defined by the history of time too, by the chronicles of

time. If we have no shared history, we continue to only have individual timelines for each user or resident of each virtual world. And finally, we have to face another important issue, the problem of death, to be considered in a video game or in a virtual world. In other words, to define a shared time, accepted by everybody in the group, we need to refer to some parameters. William E. Smythe remarks:

“A major gain of semiotics is voiced by Tolman. He noted that Volosinov considers consciousness to take ‘shape and being’ from the signs created by a group in its day-to-day social intercourse. An explanation of the psychological, then, hinges on a semiotic analysis of the social environment.” (Smythe 1998, p. 162)

As we already said, in video games there are “reiterated deaths”, since the characters can die and resuscitate many times, just restarting the game. In virtual worlds we rarely find characters who have disappeared, like SL artist Starax Statoski. The presence of death implies a linear time, from A to Z. In absence of death, we have a circular time, an infinite time chasing itself. At the end, there is another question: every time that a famous character passes from a world to another, creating a different moment of his life, does this character appears older? There is also the legitimization issue: with all these transits from a world to another, the characters become truer and probably more trustful. In summary, time becomes compressed and distorted in video games and virtual worlds. The warping of time varies in these two platforms due to their different narrative structures and the control the user has over their environment. In a video game, the user follows the narrative as it is structured around a set of rewards and punishments (sometimes death) whereas the user in a virtual world such as Second Life structures their own narrative which eddies around the trends and real life impacts on the environment.

Notes

¹ From <http://secondlife.reuters.com/stories/2007/04/25/gartner-secs-80-virtual-world-penetration-by-2011/>.

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