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Language and communication in future gamified virtual realities

Original contribution

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Abstract: There's no need to introduce the first speaker of this morning as he is, arguably, one of the most renowned semioticians in the world. During his brilliant career he has published extensively on the topic of virtual realities and he will present to us his latest research on the defining technology of our times: the Simulatron. Specifically, he will focus on the 2053 incident which took place inside the virtual world of *SimuLife* during which all the users lost the ability to use verbal language and thus inventively resorted to different semiotic forms of meaning-making to communicate and interact. A topic which is of extreme relevance for this 2062 World congress « Semiotics in the Metalife ». So, without further ado, I welcome and leave the floor to Professor Wright..

Keywords: Semiotics, Videogames, VR, Communication, Face..

1. INTRODUCTION

Dear fellows and distinguished scholars,

I am extremely honored to open this 2062 congress on semiotics and communication titled « Semiotics in the Metalife ». This is a congress which, we have to admit, takes place in a World that has finally become better thanks to a new brilliant and controversial technology invented ten years ago and which will be the object of my talk: the *simulatron*. As you surely remember, in the beginning nobody took this idea seriously, possibly also because of the name which, referring to Rosenblatt's "perceptron", was by many associated with Woody Allen's "orgasmatron" (Allen 1973). After many years of discussions about life in a virtual simulation, inside both fictional products since "The Matrix" (Wachowski & Wachowski 1999) and academic discussion since Bostrom's famous 2001 article "are you living in a computer simulation?", we were simply tired of this topic. After all, the technologies of virtual realities never became what we expected them to be: we never got really rid of VR sickness and most videogames were still full of bugs and poor design choices. Virtual simulations of the socio-economic reality themselves, since the 1985 *Habitat*, seemed to be ineluctably disappointing in the long term: Rosedale's 2003 *Second Life* had a great start but then failed, and the same occurred with Mark Zuckerberg's 2021 Metaverse and with Phoebe Gates' 2030 "Next Reality". Surely games and digital simulations had a critical impact on culture, economy and on many aspects of our life: education, health, professional training, AI and much more. But definitely renouncing the material world to willingly live inside a simulation? No, for most people that was ethically, technically and pragmatically out of question.

Among the few who believed it possible, they were numerous scholars working in the humanities. And this was due not only to the fact that already 40 years ago philosophy was defending the idea of virtual worlds being completely real (Chalmers 2022) but perhaps mostly because they had noticed how their students were, year after year, extending more and more the notion of "real" to what in the past would have been considered "artificial": from the online dimension of their social life to sincere affect for the new products of robotics released

in 2040. As a result, during our lessons on the culture of the 90's and 2000's we could all notice how our students understood less and less what the point of taking the red pill was. And, unexpectedly, we were right.

The idea of the simulatron was a relatively simple one: given that most of the world's problems came from overpopulation, many issues could be solved by simply putting a large amount of people to sleep for a decade. The idea was a radical one, almost unbelievable so that many mocked it (who remembers the "Dumb Thanos Plan 2.0" memes?). Those who took it seriously criticized it harshly from an ethical point of view. Nevertheless, many wondered: how to convince so many people to willingly renounce life? Paying them and calling them "heroes" in the news would surely not suffice. It was common sense to hypothesize that these users would have to be in the first place the less fortunate and the unhappy ones, and that the simulatron would end up making even more emarginated people. Yet, the inventor knew very well that even the world's most depressed, disillusioned, poor and ill people would still cling to life. To convince them it would be necessary to give them *another* life in exchange, a life which would look like a great dream and a great reset of the past mistakes and accidents. Furthermore, it would be necessary to allow them to bring their significant ones into this other life, it couldn't be a solitary dream nor something excluding them from time. Finally, such dream would have to be a playful one: a place of surprises and unexpected events, of subversion, of curiosity and discoveries, of satisfaction and much more. Such lucid dream was the promise of the simulatron: a virtual world consciously experienced while in a state of artificially induced coma, a condition solving in this way any problem related to the "immersion" and most technical issues due to the sensorial awareness of avatar-embodied users in extended realities (Eunhee et al. 2020). After so many years of being only half-realities (Juul 2005), and based on the first experiments in 2017 of games played with the mind such as Awakening by Neurable (Neurable 2017), this was the definitive immersive experience of a full virtual world and gamified life. Hence the name of the simulatron's main software: *Simulife*.

Such virtual reality however would not work like a realistic simulation of the world but instead it would function as a digital game. Why? Allow me to quote the famous speech held by its creator exactly one year before its release.

"Gamified virtual realities have always been much fairer than life. They are where you can look and become who you want to be through fair effort, without being limited by genetics, economics geopolitics or even the law of physics. They are where you can create another identity and have a real second chance in life, without being judged nor limited by what you may have done in the past. They are where interpersonal relationships are best, since AI-controlled characters will *always* reward your kindness and share your feelings. They are where collaboration with human players is *always* rewarded since it is rhetorically designed as necessary to accomplish the greatest things (Bogost 2007). Failure itself is something fair in videogames since you can always have success in the end through potentially infinite trial and error. Not to speak of how much more freedom you can have in a world in which you never have to worry about physical pain, disease or even death; in a world almost without fears and in which playfulness is the only requirement for your own happiness (Thibault 2020). Furthermore, videogames are where anything imaginable, any dream, is both visually possible and *felt*: no other media experience can come even close to this possibility of feeling pleasure, pride and mastery. Finally, most gamified virtual worlds have great stories in which everyone can feel important, powerful and meaningful: the exact opposite of the real world in which even the luckiest people on earth will often feel powerless and trapped in a loop. In digital games you actually have a destiny, and everything is designed for you to fulfill it and to accomplish any project you may have inside that virtual world. Simply put, gamified virtual worlds have always been fair places in which we could live meaningful experiences full of emotions, they have always been fictional worlds able to craft real memories in the heart of their users so much that they would mourn the end of these virtual worlds. For all these reasons, to offer you the best and most meaningful life you could ever have, inside the simulatron such life is designed as a story to play."

Hence, if the simulatron was possible thanks to the latest scientific discoveries about technology (especially XR and implantable brain–machine interfaces), the human body and psychology (especially with the surprising 2030 discoveries on lucid dreams), the success of *Simulife* was due to the best artists, writers, composers, game designers and scholars of both humanities and social sciences which all knew that narration and playfulness is what makes the human life actually meaningful. In fact, any scholar and historian of the academic studies on digital games can easily recognize in this speech the key terms of authors such as Aarseth (1997), Juul (2005), Bogost (2007), (Thibault 2020) and many more. More importantly, semioticians and linguists such as us can easily recognize this speech as a profoundly ideological one. Indeed, any references to both the value of the real (non-meta) life and the multiple negative sides of digital games were completely avoided and occulted. Not to speak of ethical dilemmas and risks of having millions of people substantially jailed inside a machine and software. There are some real problems for which the debate around the simulatron has been heated in the last ten years, with some even putting in doubt the actual benefits of this operation.

2. THREE COMMUNICATIVE FEATURES

Since it would be impossible to discuss here all the characteristics and content of the simulatron, we will limit

ourselves to the analysis of a single feature which is of particular relevance for this congress: its communicative system.

As you know, the very technology allowing interactions in virtual realities had in fact been explained since the 90's and continuously as a communicative system (Biocca, Levy 1995; Barricelli et al. 2016). In my talk however, I will focus not on the technology itself but on the communicative features of the software.

Indeed, we have already mentioned that such world was conceived to be populated by many players living together which, in turn, implies the necessity for them to be able to use the most precious resource of mankind: language. Now since the players were actually asleep, the option of talking was simply out of question. Therefore, the developing team went back to very old games to understand how virtual worlds allowed its players to interact in the past. Of these features, three were selected and implemented:

1) METAVERSE'S REAL TIME FACIAL READING

One of the key features of human interaction and communication is the face, and replicating it was fundamental. In the history of digital games, since the 1980's *Pac-Man* faces had always been present and important but also quite problematic. To sum-up one of the 2020's most extensive semiotic research on this topic, faces in videogames were used for three main functions: expressive, symbolic and identifying (Giuliana 2020). Although such digital faces could replicate most of what physical faces did, especially a new kind of photorealistic faces generated from scanning that would allow a new degree of cognitive and emotional involvement, their meaning was completely different for two reasons (Giuliana 2022a). First, due to being produced as utterances without any material resistances (Dondero 2020), the semantic opposition between face and mask pragmatically was impossible (Giuliana 2022b). Secondly, the fact that such production of faces was not occurring in real time made them communicatively unmeaningful since, as Eco rightly explained in 1975, they could not really be efficiently used to *lie*. It is only in 2022 that a new kind of *metavisage* appeared with the creation of Zuckerberg's first VR project "Horizon" which included a form of real-time indexical reading of the user's face iconically reflected on the avatar (Giuliana 2022c). Although initially the reading of facial expressions was deemed in conflict with the sleeping condition of the users inside the simulatron, a solution was soon found. Indeed, very old studies had already demonstrated both that facial expressions occur during REM sleep (Rivera-García et al. 2018) and that they are tightly related to the cognitive activity (Zhou et al. 2020). Thus, in addition to the in-game possibility of simply thinking of a facial expression to express it, the special headsets of the simulatron were created with devices of brain and facial reading to represent the real face expression. Finally, it was observed how much the players of the past multiplayer role-playing games enjoyed expressing their own identity not only through the unicity of their visages but, on the contrary, by often wearing masks belonging to other unique non-playable characters and creatures, whether for a felt narrative affinity or just for fun. For this reason, although each player's face was scanned and "locked" before the game so that others couldn't wear it, all the players had the possibility to wear a same face found inside the game. These common wearable faces and masks worked as augmented reality memoji so that they could be partially deformed in real time by the user's facial expressions.

2) AVATAR'S BODY AND GESTURES

The second aspect that was implemented regarded the involvement of the avatar's body. Body movement and life are in fact so strongly associated that since 1983 *Maziacs,* the players' avatars would often be given idle animations during the waiting moment to look "alive". Not only that, but in the history of videogames the very movements represented on the screen were more and more recorded from real life performances and real physical models, from the first 1989 entry of *Prince of Persia* to the 2020 mocap of *Cyberpunk 2077*, so that players could feel cognitively involved in what they were both doing and witnessing. Finally, the success of digital games, in which fingers could often matter more than thought, coincided with the adoption in the academic studies on the human mind of the so called "embodied theory" which, as you might know, postulated a dependence, still theoretically valid today, between how we can act in the world through our body and how we think (Newman et al. 2018). For all these reasons, it was clear that *Simulife* needed a strong involvement of the user's body and that this was a great challenge considering that everyone would be asleep. Luckily, studies on dreams demonstrated that the sense of embodiment still occurred during sleep and so a special suit was invented to allow a sense of embodiment in *Simulife*. Yet, such centrality of the body was not merely a question of realism but it was actually at the basis of the possibility to communicate to the player through body and non-verbal language: a feature which had to be part of the simulated reality (Isbister 2016). This is why the developers dug very deep into the communicative role of virtual bodies in multiplayer games, discovering the key role of *emotes gestures*. In these contexts, premade animation of shaking a raised hand to say hello or of dancing were key elements that identified the communities inside the game. As an example, inside the community of *Dark Souls* (2009) and *Bloodborne* (2015) behaviors such as bowing before a duel or pointing a finger down on the defeated opponent after it could differentiate diverse sociological groups of players. Some of these emotes also worked *de facto* as *memes* and could become so famous and culturally relevant that they would be recreated outside virtual realities (Marino 2015). Two historical examples of this are the cases of 2018 football

players performing *Fortnite* animations after a goal (P12 football 2018) and the mass-creation of actual internet memes around the gesture of "praising the sun" (Sam, Matt 2020[2014]). Additionally, some of these animations were "created" by the players themselves through the characteristic combinatory functioning of digital games. This was for example the case of *Halo*'s *teabagging* in which a player would repeatedly combine the crouch and stand-up actions on the faces of a defeated player to humiliate him by mimicking a kind of sexual practice. Finally, gestures and body movements quickly became one of the main social features of VR, with products such as VR Chat fundamentally allowing the invention of the "body trolling".

ChrisQuitsReality 2020). With this new technology, animations wouldn't be premade anymore but there would be an almost perfect iconic and indexical reflection of the user's real body and of the virtual one, exponentially multiplying the communicative potentiality of the avatar's body and the variations of the same utterances, such as using a hand to say hello. With VR, body language not only reached one of its highest points, but it actually allowed the specific inclusion of *gestuality* (Campisi 2018) as never before through specific technologies of both gesture recognition and gesture interactions (Jiang et al. 2020). These allowed not only the usage of different types of gestures but more importantly to bring into virtual reality a fundamental part of both the cultural reality in which gestures are born and the player's embodied memory. In fact, from a proprioceptive and self-conscious perspective, fighting in a virtual reality was an almost childish experience in which it was possible to relive the memories of when the users were kids and played with imaginary weapons. Additionally, since the birth of digital games the apparently meaningless actions of interactions (such as pressing a button) had actually always been charged with narrative semantics and therefore had been deeply meaningful (Grodal 2003). Sadly, however, the induced coma made it impossible to replicate many of these latest features and this was regarded with unanimity as a loss. The embodied involvement was consequently relegated to the only audio-visual dimension of cognition while the body language was therefore mostly implemented via partially premade animations "filling" the details of the intentions and emotions of the players which would replicate and represent body movements and gestures (Gallese 2015).

3) CHATS AND VERBAL LANGUAGE

Last but not least, a chat was implemented so that sentences could be simply "thought" to appear as written in a dedicated box in the language known by the ones reading it. Exactly as in MMOs, users could simply put some keywords at the beginning of their thoughts (example: "Talk to …" or "Yell") to be sure that the message could be read only by the ones it was meant for . The chat box itself also worked very much like an old mailbox, giving the reader the possibility to mark some messages as important, block unwanted users, create groups, keep some of them and delete others, etc. Initially, the development team deemed such chat as too old-fashioned and tried to think of an alternative, such as the possibility of directly reading each other's thoughts. Very soon, however, both technical limitations and pragmatical issues of "mind reading" arose. At some point, someone inside the team suggested to completely discard any form of classic verbal communication, but in the end the chat was kept. Indeed, no matter how much human societies seemed to rely on moving images for a variety of purposes, verbal language was and still is at the heart of most human interactions. It was certainly true that since 2010 it became almost impossible to conceive social communication without visual elements (such as emoticons, emotes, stickers, gifts, meme and more), which is why all these were included into the simulatron's advanced chat, but this never diminished the relevance of verbal language. Furthermore, verbal language easily allowed the expression of spatio-temporal coordinates which would otherwise be impossible through a real-time visual language without editing (D'Armenio 2019). Not to mention that it gives the possibility of meta-describing the simulatron's metaverse itself, a key feature since making and participating in *discourses* about the played games has been a critical and common feature of the gaming culture in the digital era. Let's think of videos, forums, articles, channels and much more created by the players and (mostly) *for* the players. Finally and consequently, verbal language in chat boxes also allowed the spread of information between users and through it the constitution of communities, somehow similarly to a very old website called "Reddit" which inspired the developers.

Summing-up, real-time indexical-symbolical faces, complex body movements and an advanced visuo-verbal language chat were the three main communicative technologies which guaranteed the success of the social dimension of *Simulife*.

3. THE INCIDENT AND THE CONCLUSIONS

The interest in the simulatron from a communicative perspective is, however, not limited to the specific features implemented in it, but it also extends to a famous bug which occurred last year that actually put this very system in crisis. On the 30th of March, an unknown informatic error caused the chat to crash and disabled any possibility for the users to use verbal language. Suddenly, Calvino's 1973 fictional situation of the novel *The Castle of Crossed Destinies* became a reality for millions of users. Initially, this issue was considered a minor bug that would be solved in a few minutes, and the users reacted to it with irony as usual.

However, the issue was far more severe than anyone had thought and lasted for a whole month. Of course

head movements and gestures could still assure some elementary kind of communication to express things like "yes or no" and fulfill in part the indexical function of language by referring to "there" or "that". Yet, not only was this not valid for all cultures such as for the Bulgarians (Jakobson 1972), but more importantly, the complexity of *Simulife*'s interactions required much more complex systems of communications. This is why, in light of the previously mentioned absolutely critical role of verbal language (used to act, understand, socialize and grant meaningfulness to the virtual world), this was considered as a potential catastrophe.

Luckily, the users soon found a creative solution and the worst was avoided.

In the beginning, many players started to grind the item of the "talking stones" which would pronounce single words or short sentences such as "please help" and then be destroyed. Such item was inspired by a famous series of games of the past and was created mainly as a useless joke, but soon became extremely valuable and wanted (Dark Souls Wiki 2022).

Then the more creative users exploited the system of physics to recreate the visual configurations of words and icons through the impacts left on walls by swords, arrows, bullets and magics. A playful practice which at some point in the past history of digital games was quite popular (picture by El_invisible 2021):

Both these solutions were however, to say the least, unpractical for expressing complex and meaningful sentences.

A second answer to this situation was the attempt of creating a semiotic code *ex-novo* with the available actions of the game. But this was soon abandoned due to the difficulty of not having any way of verbally establishing and inscribing such code, without mentioning the problem of the users speaking different languages.

The true solution was instead possible thanks to the ludonarrative nature of the virtual world.

From the ludic point of view, many games work as a series of predetermined paradigmatic elements that can be syntactically combined in succession and with some degree of freedom to represent events and meanings (Bartezzaghi 2016). In this sense, playing a videogame can be conceived as a linguistic activity of subjectively producing visual utterances from a shared and intersubjective repertory containing virtually anything that can be used. This is what the old theory of structuralism would have described as an *enunciation* transforming the *Langue* into the *Parole*.

From the narrative standpoint, these elements are usually semantically predetermined by having names, such as "blades of chaos", and the repertory of these paradigmatic elements is usually gradually constituted through progression with each of its elements being cultural units obtained in very specific context like a place or an event. As a consequence, the semantic of any of these elements exceeded both its original/literal meaning belonging to the material world and the semantics of their visual representation. Instead, each of these elements pulsed with a meta-intertextuality and potential ambiguity known only to the users of *Simulife*. This created, as a consequence, a whole interpretative community (Eco 1979) recognizing *frames* inside each object in light of their experience inside the virtual world and creating new connotated meanings inside the virtual reality (Barthes 2002[1964]).

As an example, to express the past they would wear the level 1 dress granted to them at the very beginning of the game. To express the future, they would use the "digital clone" magic animation obtained by defeating the leader of an army of robots during the storyline. To express the night they would use the "moon" gesture acquired while meeting a werewolf NPC. To express emotions, they could refer to a particularly hard boss fight by putting on the unique "mask of despair" looted on the corpse of a friendly NPC killed by this monster. So a sentence like "Let's go eat fish tonight" would look like an avatar creating a magic clone, then handling a fishing rod and finally making a gesture mimicking a werewolf. And the answer "No thanks, I had it yesterday" would look like the other avatar making a negation gestures and changing her clothes into the day-one starting dress. Finally, to express his unhappiness about the refusal, the first avatar would use the gestures of falling on his knees while wearing the "mask of despair".

In addition to this, finally, the avatar editor was also used to express meanings and memories that could be absent from the game's main repertory and referred to the real life of the users. Cultural practices such as make-up gained back their anthropological function of storytelling, while the AR emoji technology allowed the users to replicate very famous memes dear to them. As an example, after the bug many started to wear a dog face, painted it yellow, added a rounded hat on their head and just smiled at each other. This was a reference to a famous web picture known as "this is fine" used to ironically express despair (Zach 2021[2015]). More generally speaking, the face and the body became like a canvas and inside this communicative context the old oppositions such as "face vs mask" were no more relevant (Marino 2021).

Of course this solution could not completely nor perfectly substitute the verbal language. Yet, it worked beyond any expectation. One of the reasons for this "success" is perhaps the fact that even when the chat was functional, the players were already using these possibilities. In fact, while the simulatron's technology is undoubtedly revolutionary, the *Simulife* software was on the contrary, as we have seen, basically a mix of everything that had been successfully implemented in the history of videogames. Moreover, if we analyze these features we can see that they all belong to a form of visual language and storytelling which has somehow defined and dominated the 20th century (Pinotti, Somani 2016).

But, perhaps more importantly, this incident therefore highlighted what a good choice designing *Simulife* as a narrative game had been, since both narration and games are processes through which humans create and share significance (Huizinga 2002). Models through which they grant meaning to their real lives as series of trials, of valued things to obtain, of others to defeat, of habits, of memories and paths to improve towards a future. After all, as Barthes (1966) correctly affirmed almost one hundred years ago, there have never been cultures without narrations and meta-cultures are no exception. In some sense, we could even argue here that playful narrations can create a culture. It is therefore mainly by giving them a world and a projectuality, what Wittgenstein (2009) would have called "form of life", that *Simulife* succeeded in allowing its users to communicate. Indeed, this case study has proven how the significance of communication in such context was expressed via multiple semiotic forms relying on linguistics for their meaning-making but on culture for their meaningfulness. In conclusion, from the point of view of our scientific community, such incident is the definite proof of how even in the most advanced virtual reality, the meaningfulness of language resides in its linguistic playful usages (idem), in the personal constitution of a collection of common knowledges inside a given cultural sphere (Paolucci 2020; Lotman 1985), and last but not least, in the possibility of producing meanings through the users' own and shared experience of any reality:

"*If we understand, it is because our linguistic knowledge was formed by assimilating the knowledge and experience of the processes, of the social and cultural practices and, of course, of the material, physical, biological constraints within which we and the other people of our community move*" (De Mauro 2011, 85, own translation)

Thank you for your attention.

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