



Virtuality, Psychotherapy and Psychoactive Substances as Tools for Emotional Well-being

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In the confinement caused by the COVID-19 pandemic, uncertainty about the future increased, and resulted in the perception of a crisis scenario manifested in high levels of stress and emotional instability. A determining factor in this context was the migration of activities to virtual platforms. It was possible to identify the scope and influence, on the one hand of virtuality itself, through this phenomenon, and on the other, the shape and scope of the art which created a route of escape from physical and material reality. What it created was a feasible form of transition to other realities, particularly on portals and devices to which art opens its doors. The new exposure also leads to what could be ways of approaching altered states of consciousness (or high consciousness) or frequencies which one may, as has been proven, also possibly access through meditation or types of music or through consumption of psychoactive substances. Therefore, it is possible to propose a paradigm shift in the responsible use of psychoactive substances by integrating that knowledge with programs of virtually enhanced psychotherapeutic engagement. These programs include guided meditation, music and psychedelic visuals, to name a few. Such tools positively stimulate a transition from the way of life of which we form a part to another one of controlled environments. This makes it possible for us to appropriate, explore or verify the benefits that have been conferred on these tools of the mind only in isolation.

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Isolation due to COVID19 and the migration to virtuality

On few occasions, before the COVID 19 pandemic, did the entirety of humanity have to isolate itself as it does today. The unprecedented pandemic gave rise to the migration of many activities and daily tasks to cyberspace. The internet has already enjoyed a certain popularity since the 1980s, due to the way in which it was able to avoid physical interactivity and reduce time, making office work more efficient. By 2020, using computers and navigating cyberspace were no longer limited to workspaces. Online learning, computer mediated entertainment or medical consultation among other activities, became common ways of maintaining contact with other people outside home:

”cyberspace”, [is the] the imaginary place where computers take us when we log on to the Internet: virtual friends, virtual sex, virtual universities, virtual tours of virtual cities. Before the Internet forced itself, almost overnight, into our daily lives, the virtuality of digital technology was associated with the concept of VR [which was] introduced to the public in the late 1980s.” (Ryan, 2001, p. 25)

So, browsing through social networks has become a common ritual of video calls, virtual meetings on different platforms. Other forms of interaction had to be developed quickly with respect to human nature and the technological requirements of the computers. Human communication has evolved from the origin of oral language, written language, body language. Each of the codes takes on a different meaning depending on the geographical location, the culture, even the religion to which one belongs. Every time we faced diverse situations and phenomena, we generated ways to express our feelings and thoughts; we created tools to make our voices heard and express our thoughts to a greater number of people. Currently, due to technological progress, each sign has been synthesized through screens and computers that transport information and data at inconceivable speeds, reaching thousands of people at different latitudes in real time. This type of exposure to technology and the virtual world modifies our habits and behaviors. The virtual digital world represents a new space to explore:

“Madary and Metzinger (2016) write how the embedding of VR in our world creates a “complex convolution, a nested form of information flow in which the biological mind and its technological niche influence each other in ways we are just beginning to understand” (p. 20). VR creates “not only novel psychological risks but also entirely new ethical and legal dimensions...” (ibid, p. 20). While no single approach or theoretical foundation can solve the ethical challenges of VR alone, we believe a qualitative turn to the user experience of VR—by inquiring



into the experiential relationship established between user and environment—can be a complementary constructive angle from which researchers can uncover unintended effects resulting from their designs." (Vindenes & Wasson, 2021)

Therefore, after two years of partial isolation caused by the COVID 19 pandemic, we have experienced how computers, smartphones, digital tablets, voice assistants, smart watches, among other technological devices, allow us to be in constant contact with Virtual Reality by becoming its body extensions, and appendages of our brain memory. Even when we are at home, we move around with these digital tools that allow us to remember data, telephone numbers, create appointments, generate to-do lists or buy supermarket products, listen to music and even meditate. With these tools we take notes, record voices and videos, we capture moments and even vital signs. All this flow of information that used to be kept in the privacy of our brains, in notebooks or family albums, to name a few similar tools, is now available to companies that can sell our data to the highest bidder, generating mutual benefits, both for companies as well as for users; there is a constant supply and demand for technological applications and services that facilitate our daily lives.

Don Ihde identified four structures of human-technology-world relationships (Ihde, 1990). The first of these he calls *embodiment* relations, where the combination of human and technology together relate to the world. In embodiment relations, there is transparency, as when we look *through* our eyeglasses or talk *through* the phone. Second, he discusses *hermeneutic* relations, where humans “read off” an abstract representation by a computer, such as a weather forecast or an MRI scan. Third, in *alterity* relations, humans interact with technology directly within its own system, a common example being interaction with an ATM or a calculator, where the world withdraws into the background. Lastly, Ihde (1990) discusses what he calls *background* relations, where the technology is an implicit condition affecting the environment, partly serving as the context in which we find ourselves (e.g., an air conditioner). Ihde (1990) illustrates his embodiment, hermeneutic, alterity, and background relations through diagrams indicating on which poles, subjective or objective, the technology primarily is “situated” with arrows indicating intentionality, as seen in Table 1. (Vindenes & Wasson, 2021)

Embodiment relation	(human – technology) → world
Hermeneutic relation	human → (technology – world)
Alterity relation	human → technology (world)
Background relation	human → (technology / world)

Arrows indicate intentionality.



Table 1. Human-Technology Relations Diagram (Ihde, 1990).

We are increasingly related to technology and increasingly immersed in cyberspace and Virtual Reality, since this space has become a place to safely experiment with different scenarios and possibilities; from contact with other human beings, to going to online chats to avoid contagion from COVID 19, to drills in different areas of knowledge assisted with artificial intelligence, and ranging from military and medical simulators to those that replicate entertainment in video games. This immersion in cyberspace may signal an escape from reality for some, but if we pay attention, it is possible to identify many daily tasks that involve an escape from reality. We are constantly exposed to alternative realities.

Virtual Reality, Devices to access alternative realities

Reality is something that happens constantly before our eyes; it is difficult to define and even more immobilize it, especially if we trust in memory. For this reason, we have given ourselves the task of capturing it in some way – the task to record reality. The myth of Plato's cave, the Chinese shadow theater or *pi ying* developed during the Han dynasty or in contemporary art, following the idea of shadow projection, in the work of the British artists Sue Webster and Tim Noble, who somehow, they refer to the deception that reality can become. Thanks to new technologies such as photography, cinema and more recently VR, we realize that the recording of reality is not reality in itself. Our fascination with these alternate forms of reality transports us to other spaces and times: paintings, songs, texts, different forms of artistic expression, photographs, video and as technology advances we have the luxury of replicating reality in a three-dimensional digital virtual space. Due to the evolution of these ways of recording reality, it has been possible to appreciate and analyze it from different perspectives.

The remaining equivalencies in Langer's systematic description of the arts as "virtual-something-else" describe dance as virtual gesture; poetry as virtual life; narrative as virtual memory; drama as virtual history; and film as virtual dream. (Ryan, 2001, p. 43)

Thought and the processes that imply virtuality: ~~tools~~—such as imagination, problem solving, memory, sleep, all of them take place in an alternative reality. With alterity we have been able to create other realities, that is, a reality. This reality itself has benefited from the development of alternative realities, since they have provided the possibility of improving processes and ways of doing and inventing tools or gadgets that facilitate human






















































activities, seeking to expand our life experiences and at the same time trying to improve human health.

The question raised for some time now is how this notion of reality and the need for its continuous improvement emerged as one of the characteristics that distinguishes humanity from the rest of the animal kingdom? There is a theory that this kind of consciousness arose due to the rapid evolution of the human brain and the use of some kind of hallucinogenic plant:

“In the search for a causal agent capable of synergizing cognitive activity and thereby of playing a role in the emergence of the hominid, researchers might long ago have looked to plant hallucinogens were it not for our strong, almost compulsive avoidance of the idea that our exalted position in the hierarchy of nature might be somehow due to the power of plants or natural forces of any sort. Even as the nineteenth century had to come to terms with the notion of human descent from apes, we must now come to terms with the fact that those apes were stoned apes. Being stoned seems to have been our unique characteristic.”
(McKenna, 1992, p. 29)

The consumption of hallucinogenic plants became popular in the 1970s despite the fact that studies indicate that it is an ancient practice and it is precisely because of its quality of transporting its users to other realities, or alternative realities that it could seem like hallucination because what is perceived did not coincide with the reality that was experienced on a daily basis. It should be remembered that such an effect is similar to that caused by Virtual Reality, what we visualize through the screens of our different devices is far from tangible reality.

There are several investigations that explain the effects of different types of psychedelic stimulants such as hallucinogenic substances. As for the visual effects they cause, some authors attribute them to entropic phenomena, which are based on the optical illusion produced by the image projected on the retina and are characterized by a visual perception that seems to differ from reality, since they are produced within the observer's own eye and the observer cannot share the direct and specific vision of the phenomenon with others. Some could confuse them with hallucinations, for example, floating flies, the blue field, the Haidinger's brush, the Purkinje tree, Purkinje blue arches or phosphene to name a few. These phenomena have to do with lighting conditions and ocular anatomy; however, these patterns have been recognized in original artistic expressions:

	ENTOPTIC PHENOMENA		SAN ROCK ART		COSO	PALAEOETHIC ART			
	A	B	ENGRAVINGS	PAINTINGS	E	MOBILE ART		PARIETAL ART	
			C	D		F	G	H	I
I									
II									
III									
IV									
V									
VI									

This schema shows the correspondence between entoptic phenomena studied by electrical engineer Knoll, San art (South Africa) and Shoshone Coso art (California). Dowson, Lewis-Williams 1988: p. 206, fig. 1.

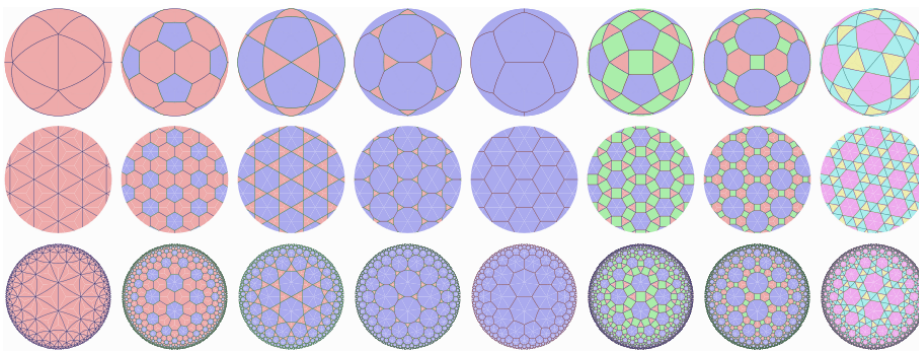
In 2016, Adrián Gómez Emilsson published an article entitled "The Hyperbolic Geometry of DMT Experiences: Symmetries, Sheets, and Saddled Scenes"; available at <https://qualiacomputing.com/2016/12/12/the-hyperbolic-geometry-of-dmt-experiences/> where he argues about the possibility that those visual appreciations are related to hyperbolic geometry and elaborates:

Why should we believe that phenomenal space on DMT (and to a lesser extent on other psychedelics) becomes hyperbolic-like? We will argue that the features people use to describe their trips as well as concrete mathematical observations of such features point directly to hyperbolic geometry [...]

The highest level you get to depend on the dose consumed, and in high doses one experiences all of the levels, one at a time, and in quick succession (i.e. on high doses these levels are perceived as the stages of the experience). If one takes just enough DMT to cross over to the highest level one reaches during the journey for only a brief moment, then that level will probably be described as “the peak of the experience”. If, on the other hand, one takes a dose that squarely falls within the milligram range for producing a given level, it will be felt as more of a “plateau”. Each level is sufficiently distinct from the others that people will rarely miss the transitions between them.

The six levels of a DMT experience are: **Threshold, Chrysanthemum, Magic Eye, Waiting Room, Breakthrough, and Amnesia.** (Emilsson, 2016)

It could be said that our visual perception is carried out in two dimensions and the third dimension is confirmed through the sense of touch. However, under the influence of some type of psychedelic substance, the images take on other dimensions, because at the initial level, it is possible to appreciate a sweep due to the fact that the perceived images overlap, whereas in later levels they generate geometric combinations from what is being observed or as if they were seen through a kaleidoscope. What seems like a hallucination could be the result of a geometrical configuration process.



The Hyperbolic Geometry of DMT Experiences

<https://i0.wp.com/qualiacomputing.com/wp-content/uploads/2017/05/curvatures.png?resize=914%2C339&ssl=1>

As we have mentioned, reality is difficult to capture, however, the video from its beginnings became one of the most faithful ways of representing it. Consider the VHS tapes that presented some of these qualities whenever they were perceived as reproduction errors where the images overlapped, and where there were even moments when the only thing that was perceived was noise which again was precisely this same kind of saturated geometric configuration:



https://www.imdb.com/title/tt2105044/?ref_=ext_shr_lnk



<https://www.videvo.net/es/video/fallas-y-ruidos-defectos-de-television-con-artefactos/1237577/>



Currently this type of effects and images are easy to reproduce thanks to filters and computer algorithms, the psychedelic experience has been synthesized through the monitors and screens of the infinity of electronic and intelligent devices that accompany us daily, so it would be important to take advantage of the benefits that this type of perception could generate.

Psychoactive Substances + Meditation Apps

Let us remember that at the time that the effects of psychedelic substances began to be investigated, by means of different methods and through different disciplines. It was precisely psychologists themselves who experienced the use of these substances in therapies for their patients, hence the probability of resuming psychotherapy using virtual reality and enhancing its qualities through the use of psychedelics that allow for optimizing the patient's experience of introspection and healing.

One of the most important precursors of psychotherapy using psychedelics was Stanislav Grof, known in scientific circles for his early studies on LSD and its effects on the psyche in the field of psychedelic therapy. Based on his observations while conducting research on LSD, Grof constructed a theoretical framework for prenatal and perinatal psychology and transpersonal psychology in which LSD trips and other powerfully emotional experiences were mapped onto the fetal and early neonatal state of a person as is it stated in the following paragraphs:

According to Grof, there are four "hypothetical dynamic matrices governing the processes related to the perinatal level of the unconsciousness", called "basic perinatal matrices" (BPM). These BPM's correspond to the stages of birth during the process of childbirth: (Stanislav, 1988)

BPM I: The Amniotic Universe

BPM II: Cosmic Engulfment and No Exit

BPM III: The Death-Rebirth Struggle

BPM IV: The Death-Rebirth Experience

The foregoing confirms the possibility of carrying out an exploration using psychedelics, guided by a trained therapist who directs us inward, into our unconscious to heal emotional wounds. These four stages could be related in some way to the six levels of experience with DMT (or other psychedelics) that Gómez Emilsson proposes, to jointly simulate a visual and sensory experience through virtual reality technologies that manage to generate a comprehensive experience. The use of psychedelics was prohibited due to the



misunderstanding of their effects, however, in the XXI century, great efforts are being made to achieve the legalization of psychoactive substances.

The ways of caring for and ensuring our physical, mental and emotional health have also evolved to position themselves within digital virtual platforms and it is currently possible to find content and applications focused on well-being in this area, ranging from nutritional advice, sports training, meditation, and even to development of research modules in which a self-induced psychoanalysis session with an avatar of Sigmund Freud is simulated virtually:

In our experiment participants alternately switched between a VB (Virtual Body) closely resembling themselves where they described a personal problem and a VB representing Dr. Sigmund Freud, from which they offered themselves counselling. Here we show that when the counsellor resembles Freud participants improve their mood, compared to the counsellor being a self-representation. The improvement was greater when the Freud VB moved synchronously with the participant, compared to asynchronously. Synchronous VB movement was associated with a much stronger illusion of ownership over the Freud body. This suggests that this form of embodied perspective taking can lead to sufficient detachment from habitual ways of thinking about personal problems, so as to improve the outcome and demonstrates the power of virtual body ownership to effect cognitive changes.(Osimo, Pizarro y Spanlang, 2015)

Now, taking into account the advances presented with the VR and returning to our initial topic on the COVID19 pandemic, we may rethink priorities of health care, particularly mental health which is likely to be seriously affected by the uncertainty about the future, because a large percentage of the population lost their jobs and with that came an economic and emotional imbalance that needed to be cushioned with tools that provide psychological support such as the one mentioned above with the virtual father of psychoanalytical therapy.



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Authors Biographies

Sandra CUEVAS, Master in Visual Studies and Bachelor in Graphic Design, both titles from UAEMéx. She has various diplomas in animation, screenwriting, art direction and computer and electronic programming. Professionally, she has collaborated in animation studios as Nickel Studios, Onirik Studio, Inzomnia Animación, Delotroladodelcero Films, working on projects that have been awarded the Ariel award by the Mexican Academy of Cinematographic Arts and Sciences and the Silver Goddess, among others. In teaching, she has been a professor in the degrees of Engineering in Technology and Digital Animation of the UVM, in Digital Art of the Faculty of Arts of the UAEMéx, in Design, Art and Interactive Technologies in the University Center of Art, Architecture and Design of the University of Guadalajara. She has been interested in issues related to imaginary production, creative processes, complex thinking, the use of new technologies, among other topics.

Reynaldo THOMPSON studied architecture at the University of Guanajuato and postgraduate studies at the Polytechnic University of Catalonia in Barcelona and the University of Texas at Dallas, the latter being where he obtained a doctorate in aesthetics studies focused on Contemporary Art.

He has participated in collective and solo exhibitions and curated shows in Mexico and abroad. He served as Head of the Department of Art and Business at the University of Guanajuato and is currently focused on research on art, science and technology in Latin America. His research results have been published in domestic and foreign journals.

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