

Liveness in the Metaverse: The Dramaturgical Role of User-Experience Design in Online Digital Performance

Federica Patti

The term *user experience* (UX) refers to how people experience an encounter with a system. It extends traditional human-computer interaction design by addressing all aspects of the user's perceived product or service. The UX classification system is based on the user's feelings, preferences, attitudes, and emotional responses. Since the mid-1990s, the user has been increasingly invited to live an unusual experience in which the physical and the digital merge. The dramaturgical importance of UX in online digital performance has yet to be recognized.

After Eva and Franco Mattes's historical *Reenactments* on the three-dimensional virtual platform Second Life in 2007, some recent digital performances on online platforms force a reevaluation of the nature of being online, together with a recontextualization of the concepts of reality, simulation, liveness (Auslander 2012, 3) and community. This article proposes the analysis of some examples of digital performances (Dixon 2007, 3) in online 3D virtual environments, following the philosophy of user-experience design and focusing on the perspectives and productions of Italian artists.

State of the Art

Dixon has defined digital performance as a specific field of artistic production and investigation in which the technological gesture is the protagonist and coauthor of the creation of increasingly augmented, hyperconnected, decentralized, and collaborative works. In this context, Boccia Artieri has recently described online theater experiments as *unidentified online theater objects* – OTONI.

OTONI are narratives conceived, realized, distributed, and consumed online within a theatrical framework. They straddle the line between performative objects and extended spectator experiences (such as streaming video on a platform, immersion in a metaverse, chatting on social

platforms). They are hybrids in terms of theatrical genres as well as adaptive and transdisciplinary formats by vocation.

To fully understand the OTONI experience, it is essential to examine it through the quality of the mediatized theatrical experience, which has to do with the forms of construction of the relationship between spectator and performative gesture in the digital, that is, with a different empathic pact with the spectator, modulated in the relationship between a “here and now” of a different nature, with a pervasive sense of presence and with an increased perception and representation of body and identity. According to Boccia Artieri, the “live” performative dimension has been progressively influenced by the media, by the communicative possibilities opened up by a technologically mediated body-scene relationship, but also by the pervasiveness of the performative form that embraces mass media according to transmedial logics (Boccia Artieri 2024, 3) and gradients of liveness (Gemini et al. 2023, 83) that are now common and shared experiences in digital spaces.

Before and after the pandemic, advanced online virtual environments have emerged as crucial sites for social and cultural experiences, structuring and facilitating conversations, creative projects, collective endeavors and commercial exchanges. Among the first experiments in Web theater was *Conessione Remota*, a telematic performance by Giacomo Verde broadcast from the Pecci Museum in Prato in May 2001. In this case, the virtual space was flat, open source, and entirely modelled by Verde, as was the user experience, designed to encourage voyeurism and dialogue via remote chat.¹

This article focuses on two such OTONI on 3D online platforms: *Second Soup* by the artist Gazira Babeli in Second Life (SL) and *Toxic Garden–Dance Dance Dance (TGDDD)* by Kamilia Kard in Roblox.

Methodology

The chosen examples are digital performances on popular 3D massively multiplayer online game (MMOG) platforms, allowing users to come together to create and share virtual map content. Both performances center on the audience’s participation in creating an interactive experi-

¹ *Conessione Remota* was one of the first live-streaming performance experiments: Once connected to webcamtheatre.org, anyone could see a typical ASCII screen divided into three columns. Users could text and watch Verde create short performance actions while wearing one of Sony’s first headphones. (Verde 2001.)

ence. It is worth analyzing the potential role of user-experience design in the conception and design of these performative objects.

Chronologically and ontologically, the selected cases were crucial in technological, dramaturgical, and aesthetic evolution. Therefore, they can be regarded as symbolic and representative of a rapidly defining style in creating digital performance on online 3D platforms. Indeed, the temporal and contextual scope of the research is given by the evolution of the internet: Dealing with performative objects that investigate online being and audience involvement through the Web, the diffusion and normalization of the internet are the fundamental phenomenon that characterizes the proposed case studies. This phenomenon spans approximately three decades.

My professional experience as a curator of digital performances for Italian festivals and as a tutor of Italian online theater residency projects allows me to have an up-to-date view of contemporary artistic production in this liminal field, in particular of the Italian scene of the last 20 years, within which I have selected the proposed cases. Both were conceived, realized and enjoyed on platforms that could be described as proto-metaverses almost fifteen years apart. Focusing on the concept of hedonic experience (Diefenbach et al. 2014, 5) as experienced by users, this article proposes to read these cases according to how users interact with technology, as well as how they understand, perceive, and describe the experience, emphasizing psychological well-being through non-instrumental, user-oriented product attributes. An attempt is made to define how these systems allow the viewer to interact with these specific virtual environments, what setting was created, and what UX qualities were generated by the system or the artist's intervention.

To date, the internet and digitization have been at the center of the cultural and technological evolution of the metaverse. Through highly interactive technological components, they have enabled and continue to allow a more effective and automatic activation of the user in the design of products and services, personalizing them, involving them in all senses, and enabling collective authorship by triggering community dynamics.

Interactive systems have been studied in human-computer interaction (HCI) since the early 1980s. As a branch of HCI, user experience (UX) explicitly refers to the experience(s) resulting from the encounter with systems (Law et al. 2014, 11). According to Löwgren (2007), the end product of interaction design is always interactive products and services. UX is every aspect of a person's – or group of persons' – interaction with a particular computer system, including interface, graphics, industrial

design, and physical and manual interaction. UX design encompasses and extends traditional human-computer interaction design, addressing all aspects of the product or service as perceived by the user.

UX evaluation can focus on methods that provide an overall qualitative measure of the experience of performing a particular task or using a system. UX can be described as the totality of the user's feelings, perceptions, motivations, preferences, beliefs, attitudes, and emotional responses that result from encountering or interacting with an interactive technological artefact at a given time and in a given context of use (Hussain et al. 2021, 6-7). The dimensions of UX can be grouped into main categories such as functionality, findability, accessibility, desirability, usability, credibility, and usefulness, each of which can be refined by qualitative characteristics such as sensuality, emotionality, spatiotemporal, instrumentality, sensory, behavioral, utilitarian, and affectivity. The UX classification system is based on the user's emotions, preferences, attitudes, and emotional responses (Hussain et al. 2021, 8). Although initially driven by a strong emphasis on functionality and usability, UX research has recently focused on pleasure, beauty, emotion, and experience.

Experience-oriented designers try to create specific interaction events that can influence the user's emotions and reactions. In doing so, they create the conceptual model that underlies the interaction and experience of the system. According to Norman, users develop a mental model of how they think the system works by interacting with it. This model is used to reason about the system, anticipate its behavior, and explain why it reacts the way it does. On the other hand, the designer reifies (materializes) a mental model of a given design, for example, a computer system, in a system model, which becomes the only means of communicating that person's mental model to the user (Norman 2013, 37-40).

Since the mid-1990s, the user has increasingly been invited into an unusual experience in which the artificial and the real merge. The development of increasingly complex and responsive human-machine interface systems has also seen the growth of artistic forms and objects that encourage or require the participating viewer to construct their liminal pathways of expression and activate meaningful circuits (Diefenbach et al. 2014, 7-10). Thus, over the last thirty years and more, interactivity, conceived as a two-way relationship between humans and machines, has given users the power to manipulate and transform the artistic object with which they interact. In turn, users have been able to influence it, taking an active role in the communication process. The dramaturgical importance of interaction and UX in digital performance has yet to be recognized.

Liveness in the Metaverse

Reading a digital performance means identifying its tools, the human-machine dynamics it activates, and the experiential effects it produces (Pizzo 2017, 18). Focusing on extended authorship and DIWO (do it with others – or do it together – philosophy), this article paid particular attention to the quality of the user experience and the relationship between the technological system and the virtual place.

The analysis of these cases focuses on the influence of each technological system on the performative, participatory, and community-building poetics of these types of virtual events. The selected case studies were conceived and developed on different platforms, implementing the design possibilities of virtual environments and objects through native software or external graphic design software. How did the artists design these systems to create performative actions and scenic environments? What mental model and what kind of experience (UX) did they use, design, and propose to the audience, and why? Can these spaces, communities, and UX generate a narrative dramaturgy? Ultimately, as Gene Youngblood argued, can technologies be tools of resocialization, γυμνάσιον, “gyms” of a community?

Analysis

Gazira Babeli's *Second Soup* in Second Life (SL) deserves a mention. Founded in 2002 by Linden Lab CEO Philip Rosedale (a.k.a. Philip Linden), initially as a commercial platform, SL was one of the first 3D virtual online spaces for the development of specific social interaction projects, favoring, in particular, the use of chat and avatar customization. In the second half of the 2000s, the first forms of user feedback systems were introduced, such as skins and emojis.

Figure 1. Gazira Babeli, *Second Soup*. *You love Pop Art – Pop Art hates you*



Scripted cans, in a still from the video.

Source: <http://gazirababeli.com/secondsoup.php>. May 2006 © the artist.

As reported on the official Second Life Wikipedia webpage, in March 2005, version 1.6 of Second Life was launched with several innovative features for users, including QuickTime multimedia streaming and a unified interface for building environments. This version allowed users to create original and customized spaces, experiences, and animations for their avatars, offering more opportunities for social interaction.

In the spring of 2007, SL released its client as open source. Residents (more than 1 million at the time) participated in the Architecture Working Group (AWG) to influence its development, developing the protocols that would make SL's network manageable by Linden Lab and other users.

In the late 2010s, access to the platform required a computer with relatively high hardware and software system requirements. Once logged in, the user experience for SL residents was (and still is) characterized by customizing their avatars for surreal but routine activities. For the first time, native functionalities focused on the ability to customize the user's avatar easily. Then, using the WASD keys, it was possible to explore the environments without a set purpose, interacting according to verbal, esthetic-symbolic, musical, and movement languages borrowed from real-life (RL) jargon, but also invented. Being open source, the possibilities for interaction, participation in the platform's development, and sharing quickly spread through coding and compatibility with external software, virtual objects, gadgets, and entire buildings and cities.

Gazira Babeli has been living and working in SL as an artist, performer, and filmmaker since 2006. That year, she published recordings of some "unauthorized performances" online and joined the Second Front group.² In her words:

The real performance starts with the login; the rest is a recording of the performance.

The avatar tries to forget that it is a code. [...] I prefer thinking of the whole SL environment as (a kind of) frame space.

² Officially founded on November 23, 2006, Second Front is an international performance art group operating exclusively in SL. Composed of artists, curators, and academics and inspired by Dada, Fluxus, the Situationist International as well as contemporary performance artists such as Laurie Anderson and Marina Abramovic, the group sought to explore the performative potential of a public, pre-established, yet collaborative and modifiable fast-growing virtual space, already populated by media agencies, shops, products, brands and inhabitants, that is, a large and heterogeneous community, www.secondfront.org.

Liveness in the Metaverse

In SL, you forget the “computer.” [...] Everyone is an actor, director, and audience together. Nevertheless, is that so different from what we call RL (real life)? (Babeli 2007.)

Babeli became famous online for her performances in unconventional virtual environments, such as squares, streets, and open spaces, in front of unwitting audiences who usually react badly. As Steve Jobs unveiled the first iPhone, Babeli presented her first retrospective at the ExhibitA gallery on SL in the spring of 2007. It was an opportunity to collect and re-present many of the performative actions the artist had created on SL the previous year in the form of interactive virtual installations, including the most famous *Second Soup*, an experience in which giant cans of Campbell’s soup were activated and made aggressive by the avatars of passing users.

Even more obviously, this UX was deliberately focused on accessible, amusing and irreverent dimensions: As with everything SL, there was no purpose or functionality – let alone findability and credibility. The experience is entirely user-centric: The space in which it takes place is anonymous, with the only personalized element being interactive Campbell’s cans, activated by the simple passing of the avatar. The performance is only created when the avatar passes by, and the UX is designed to maximize the emotional return of the interaction.

The notion of nonpragmatic (or non-utilitarian) hedonic qualities – pleasure, enjoyment, excitement, fun, and happiness, but also novelty and interactivity-social element in the context of technology (Stelmaszewska et al. 2004, 83-89) – originated in consumer research and was applied to interactive products by Hassenzahl (2010). According to this view, instrumental, task-oriented, and pragmatic attributes (e.g., “useful” and “controllable”) mainly are related to behavioral goals. In contrast, hedonic attributes emphasize psychological well-being through non-instrumental, user-oriented product attributes. When hedonics was first introduced, Hassenzahl proposed an “extended concept of usability” that focused on user satisfaction, in line with gamification and challenging the then-common notion of the computer as a tool to be taken “seriously.” The emotional impact is one of the most studied effects of contrasting and manipulating hedonic qualities. Studies have shown that hedonic experiences generate more positive emotions than less hedonic/more pragmatic products (Diefenbach et al. 2014, 305-314).

Drawing inspiration from sources as diverse as Dada, Fluxus, Situationist International, and contemporary performance artists such as Laurie Anderson and Marina Abramovic, Babeli has worked with the Second Life

group to create performances and choreographic interventions that amplify the native UX and fundamental assumptions of SL, exploring what it means to be a virtual being in this space. By indulging in and taking to the mental model underlying the platform, Babeli not only reinterprets works from art history and contemporary performance by recoding and placing them in a virtual environment but also reinvents them according to the irreverent and interactive mood typical of SL, exploiting the situational and hedonic or non-task-oriented UX typical of SL and focusing the performative action on the possibilities and variety of responses and interactions with the large community freely inhabiting these public spaces.

According to the analysis of critics and curators who inhabited the platform and analyzed the community (Flimflam, 2007), SL's UX can be said to have brought each inhabitant closer to being a performer – Dadaist, Situationist – by the simple fact of inhabiting a collective virtual space and interacting with it through instructions/codes that were visualized and interpreted into objects, images, movements – a collective, simultaneous, real-time event. In the years that followed, SL's UX became the mental model for most social platforms of mass interaction.

Kamilia Kard's *Toxic Garden – Dance Dance Dance* (TGDDD), created in Roblox in 2020, is the second case study. Launched in 2006, Roblox has quickly become one of the world's most popular games, with millions of daily active users whose sole purpose is to freely create environments and related activities of all genres, from adventure to role-playing, from simulator to massively multiplayer, using the tools provided by Roblox Studio, a free “in-house” development software.

In multiplayer games such as Roblox, the user experience focuses first on the customization of the avatar (as in SL, but for a fee), then on promoting and facilitating the communication component through emotes – small animations of the avatar – and the customization of movements, environments, and objects, both free and for a fee. The emotes allow the user's avatar to express itself through more complex gestures and facial expressions, such as a short dance to express satisfaction, a hump to express disappointment, and more.

Roblox is currently considered one of the platforms closest to the ideal concept of a metaverse. The advent of the metaverse represents the final frontier of a fundamental shift in today's notion of digital presence toward massive interconnectedness, universal interoperability, and persistent synchronicity. Today, the metaverse is a massively scaled and interoperable network of real-time-rendered 3D virtual environments that can be experienced synchronously and persistently online by an effectively finite

Figure 2. Kamilia Kard, *Toxic Garden – Dance Dance Dance*



A still taken from the video of the digital performance on Roblox.

Source: <https://not.neroeditions.com/ballare-nel-metaverso/>. © the artist.

number of users with an individual sense of presence and continuity of data such as identity, history, credentials, objects, communications, and payments. The metaverse experience is best represented by its online 3D gateways. Commonly confused with the metaverse itself, these online 3D collaboration platforms allow users to explore architecture, landscape, immersion, and movement in space-time through VR, XR, and AR technology. Leading game companies such as Epic and Roblox have explicitly outlined a vision in which the metaverse will be driven mainly by user-created content (Ball 2022, 29-34).

Getting an avatar to dance comes naturally. This spontaneity is partly due to the proliferation of movement animation libraries composed mainly of dance or combat steps (such as Adobe's Mixamo or amateur open-source libraries) and partly to a kind of liberation of movement, a letting-go expressed through digital doubles and dance. (Kard, 2023.)

In the autumn of 2021, while Mark Zuckerberg was announcing the Meta project and the rebranding of Facebook, Kamilia Kard landed on

Roblox, opening the embryonic version of the environment that would later become the setting and stage for TGDDD. The spatial environment modeled by Kard is reminiscent of a poisonous garden, a metaphor for toxic human relationships. In a “toxic” map created ad hoc by the artist, the first part of the experience allows the viewer to explore the space, as in many open-world games. In the second part, improvised avatar crews engage in group dances (with choreographies taken from contemporary dance motion-capture libraries), automatically synchronized with the movements of Kard’s avatar, *KKlovesU4E*.

The association between avatar, communication, and dance combines the textuality of chat with the body’s expressiveness – albeit digital and often stylized – in real-time. The theme of TGDDD emerges through the encounters between the avatars and the comparison with what is loaded on the map: The garden is striking for its bright colors and exaggerated architectural plants. To compose the experience, in addition to creating the environments, Kard modeled the movements and interactions among avatars using various systems, from motion capture to AI. The result is condensed around the virtualization of dance steps as individual symbolic units of feelings and attitudes related to toxic relationships.

TGDDD focuses on the affordance of Roblox (van Dijck et al. 2018, 40-47), which aims to engage children and adolescents in massive social and virtual interactions through this hedonic UX. Dance, social interaction, and music are central elements of Roblox and TGDDD. In many of Roblox’s maps, this formula is used extensively, and the maps become a place of meeting and exchange, characterized by simple graphics, where avatars meet to get to know each other and form small dance groups.

Unlike Roblox, however, TGDDD does not allow avatars to be customized. Upon entering the environment designed by Kard, users “lose their uniqueness” and are given a common, randomly assigned avatar. TGDDD can be seen as a device that encourages sharing one’s own experiences within a regulated, a priori environment, where confrontation with the experiences of others on the topic of toxic relationships – expressed through the graphical interface of dance steps – takes place.

At first glance, Roblox’s UX appears highly hedonic, focused on desirability and the agile transmission of users’ moods. In reality, the hedonic impression is given by the emotional impact with which all dimensions, even the task-oriented ones, are charged. In the apparent nonsense of the proposed experience, we find the keys to discoverability, credibility and usefulness. This UX philosophy is not unique to Roblox. In the wake of SL, most of today’s densely populated social platforms focus their UX propo-

sition on maximizing desirability and extreme simplification of usability, excluding other dimensions. This is also a marketing tactic: Platforms such as brands, technologies, and values are associated with the pleasantness of the experiences they provide.

One of the central aspects of the experience Kard offers Roblox users is the inability to customize their avatar once they enter the map. Kard prevents the game from functioning naturally by assigning participants predefined, random skins she designed. In doing so, she disrupts the mental model and the native UX of Roblox, changing the performance's focus. In addition to inviting and allowing the user to explore the garden of poisonous plants, she focuses the interaction between user avatars on using and interpreting the movements of a library she composed rather than the internet. By limiting the personalization features typical of Roblox's UX, she limits its pleasurable and emotional effects, making them fall more clearly into dimensions closer to findability – those aspects designed to make UX more brand- and marketing-oriented. TGDDD's UX completely undermines the conceptual model underlying Roblox's UX. This inversion contributes to the metaphor of toxic relationships (Patti 2024, 11-13).

Conclusions

The selected case studies were developed on popular 3D massively multi-player online games (MMOG) platforms that allow users to create and share virtual map content. Artists subvert platforms' native user-experience design features through native or external software – depending on the time and stage of development of the digital environment and the internet – to create specific UXs that differ from native at various levels.

Starting from Babeli and arriving at Kard, it is possible to follow a trajectory in which even the most functional dimensions of a UX are systematically and progressively connoted at an emotional and aesthetic level. Babeli, in the late 2010s, and Kard, in the early 2020s, started from the basic functionality of an already massively populated platform to interact with the community of residents: Babeli and Kard operated on already heavily modelled private platforms and pushed usability partly at the expense of privacy, but in favor of accessibility and more massive interaction. Both are artist-coders, using code to model a well-defined UX that, through the active participation of users, becomes the center of the proposed artistic operation, outlining a new empathic pact with the viewer, characterized by the dynamics and characteristics of the user experience typical of MMOGs.

In both cases, the artist gives the users space-time to meet, draws

some objects, and outlines some rules of composition, choreography, and interaction. Neither of the modeled experiences is functional for achieving preestablished goals or objectives, and no third-party information is shared. The composition is then open: By interacting with the space and other users, the spectator shapes his or her own experience, individually and collectively.

Therefore, all the case studies can be described according to a UX philosophy that privileges the “hot” dimensions of Revang’s wheel – accessibility, desirability, and usability – which focus on the esthetic, psychological, and emotional qualities of the experience. In this way, a user-centered experience design perspective is adopted to the detriment of the more pragmatic dimensions of findability, believability, and usefulness. Like Babeli’s performance, the hedonic philosophy of UX can be described as situationist and open, as an experience that “forgets the computer.”

Therefore, the artists follow a hedonic UX design associated with highly positive emotions. In these cases, the hedonic UX philosophy corresponds to a Dadaist, alternative, and purposeful artistic vision of interaction with the system, which is crucial for imagining noncommercial forms of storytelling, interaction, and participation as well as for building diverse communities outside the dynamics of marketing and hype.

The most crucial difference between Babeli and Kard is the relationship with the mental model of reference: Babeli optimized the preconstituted UX from both a technical and ideological point of view, whereas Kard, on the contrary, distorted the conceptual model underlying Roblox’s UX, as well as its fundamental dynamics, from both a technical and philosophical point of view. Kamilia Kard’s TGDDD synthesizes hacker mentality with situationism, applying it to a platform and a community with a strong brand and mass-culture connotation. The union of the two approaches allows Kard to effectively subvert users’ mental models of Roblox’s UX while remaining cute and pink – offering the user an opportunity for participation and awareness.

In conclusion, even as metaverse and the AI bubble are the buzzwords of the moment, it is crucial to increase user awareness when interacting with these systems. The economic pressure to enter the metaverse is enormous and has to be approached thoughtfully and critically. The examples cited suggest that the metaverse is highly performative and interactive. Artists are designing digital performances that can be understood as theatrical backdrops into which the user can weave experiences that create a greater awareness of the dynamics behind being online. This raises esthetic and ethical questions of inclusion, collectivity, sustainability, and justice.

Works Cited

- Auslander, Philip. 2012. "Digital Liveness A Historico-Philosophical Perspective." *PAJ: A Journal of Performance and Art*, 34 no. 3 (102): 3–11. https://doi.org/10.1162/PAJJ_a_00106.
- Babeli, Gazira, 2006. *Second Soup. You love Pop Art – Pop Art hates you*. Digital performance on Second Life. <http://gazirababeli.com/secondsoup.php>.
- Ball, Matthew. 2022. *Metaverso. Cosa Significa, Chi Lo Controllerà e Perché Sta Rivoluzionando le Nostre Vite*. Milano: Garzanti.
- Boccia Artieri, Giovanni. 2024. "OTONI – Oggetti Teatrali Online Non-Identificati: Prospettive sulla Liveness del Teatro Digitale." *Connessioni Remote*, no. 6. <https://riviste.unimi.it/index.php/connessioniremote/about>.
- Diefenbach, Sarah, Nina Kolb, and Marc Hassenzahl. 2014. "The 'Hedonic' in Human-Computer Interaction – History, Contributions and Future Research Directions." *Proceedings of the Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques, DIS*, 305–14. <https://doi.org/10.1145/2598510.2598549>.
- Dijck, José van, Thomas Poell, and Martijn de Waal. 2018. "The Platform Society," 1 (October). <https://doi.org/10.1093/OSO/9780190889760.001.0001>.
- Dixon, Steve. 2007. *Digital Performance*. Cambridge, Massachusetts: MIT Press. <https://doi.org/10.7551/mitpress/2429.001.0001>.
- Flimflam, W. 2007. "Gaza Stripped." <http://www.gazirababeli.com/TEXTS.php?t=gazastripped>.
- Gemini, Laura, and Stefano Brilli. 2023. *Gradienti di Liveness. Performance e Comunicazione dal Vivo nei Contesti Mediatizzati*. Milan: FrancoAngeli.
- Hussain, A., E. Mkpojiogu, and M. Zabidin Husin. 2021. "Dimensioning UX Models for Design and Evaluation." *Turkish Journal of Computer and Mathematics Education (TURCOMAT)* 12, no. 3: 1878–83. <https://doi.org/10.17762/turcomat.v12i3.1018>.
- Kard, Kamilia. 2022. *Toxic Garden - Dance Dance Dance*. Digital performance on Roblox, www.roblox.com/games/9508295250/Toxic-Garden.
- Law, Effie Lai Chong, Paul Van Schaik, and Virpi Roto. 2014. "Attitudes towards User Experience (UX) Measurement." *International Journal of Human Computer Studies* 72, no. 6: 526–41. <https://doi.org/10.1016/j.ijhcs.2013.09.006>.
- Norman, D. 2013. *The Design of Everyday Things*. New York: Basic Books.
- Patti, Federica. 2024. "The FIFTH WALL. On DIGITAL PERFORMANCE between USER EXPERIENCE DESIGN and the METAVERSE." *Body, Space & Technology*, (January). <https://doi.org/10.16995/bst.11230>.
- Pizzo, Antonio. 2017. *Neodrammatico Digitale. Scena Multimediale e Racconto Interattivo*. Turin: Accademia University Press.

Second Life official Wikipedia, www.wiki.secondlife.com/wiki/History_of_Second_Life. Last access October 14, 2023.

Verde, Giacomo. 2001. *Conessione Remota*. Web theater performance. <http://www.webcamtheatre.org/framecam.htm>