聲(身)之形: Clubhouse 效應下的體現主體

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摘要

身體和聲音通常被視為兩種不同的存在形式:有形(在場)和無形(不在場)。 幾個世紀以來,人們一直認為身體的存在體現了人類主體的存在。"聲音"已被 排除在主體形成過程之外。聲音的存在與不存在,就像一縷輕煙,只存在於一瞬 間。一旦它從我們的嘴唇中逸出,它就會消失。然而,我們能如此隨意地切斷身 體和聲音之間的紐帶嗎?聲音不參與人類主體的形成嗎?精神分析和女權主義 興起後,關於身體的理論蓬勃發展。身體現在被理解為"流動性",而不僅僅是我 們身體某個部分的物理存在。身體通過政治、社會、文化、技術、生物等不斷縱 橫交錯的力量被"體現"。因此,人類主體被理解為"體現主體",是多種力量的組 合。在這個框架內,聲音作為身體的一部分再次被重新放置,強化了人類主體的 體現。在此背景下,本文旨在首先分析聲音在聲學空間中如何體現和增強人的主 體觀,用以呼應 Clubhouse APP 創建的聊天室熱潮。這些新的聲波虛擬空間如何 打破臉書、推特等社交網絡平台常見的以文字形除的"迴聲室效應"呢?用戶如何 回應這些新興的基於語音的社區?本文將藉鑑馬歇爾麥克盧漢的"聲學空間"概 念、及凱瑟琳.海爾斯對後人類概念下的體現主體作為探討這些問題的理論框架。

關鍵詞:聲學空間、後人類、Clubhouse、聲音、體現主體

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Acoustic Presence: The Embodied Subject under the Clubhouse Effect

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Abstract

The body and the voice are usually seen as two different forms of existence: the corporeal (presence) and the incorporeal (non-presence). For centuries, people have held that the existence of the body manifests the being of the human subject. "Voice" has been excluded from the subject-formation process. Just like a light vapor, the being and non-being of the voice merely exist in a spot of the moment. It fades away as soon as it escapes from our lips. However, could we cleave the bond between the body and the voice so arbitrarily? Does the voice take no part in the formation of the human subject? After the rise of psychoanalysis and feminisms, the theories on the body have prosperously flourished. The body is now understood in terms of "fluidity" instead of the mere physical presence of an individual part of our body. The body is "embodied" via continuous crisscrossing forces political, social, cultural, technological, biological, etc. Thus, the human subject is understood as an "embodied subject," the assemblages of multiple forces. Within this framework, the voice is re-placed again as part of the body, reinforcing the embodiment of the human subject. Based on this context, this paper aims to analyze first how the voice embodies and strengthens the sense of one's subjectivity in an acoustic space to correspond to the current rush of the chatrooms created by Clubhouse APP. Then, how do these new sonic virtual spaces shatter the "echo chamber effect" commonly seen in social network platforms such as Facebook, Twitter, and the like? And how do the users respond to these emerging voice-based communities? Marshall McLuhan's concept of "acoustic space," reposition of voice studies, and Catherine Hayles's posthuman concept on the embodied body will be drawn on as a theoretical framework to probe into these issues in this paper.

Keywords: acoustic space, posthuman, Clubhouse, voice, the embodied subject

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Introduction

The electronic communication revolution in the past few decades has greatly transformed our ways of life. The emergence of the television, the radio, and the cinema and, the like contributes to our reconsideration of the nature of the human subject (self), the meaning of presence and absence, and now and the past. Among these complicated temporal, ontological, and ontical disputes, the relationship between sound and the human subject is rarely tapped into by scholars for a long time. Since the identity politics proposed by poststructuralist theories such as Derrida, de Man, Foucault, and so on, the human subject is commonly understood as the discursive or social construct. The subject is merely a temporal empty form with no concrete or pre-given content. It is always in a "flow," changing with the external social, cultural, and political milieu. Such an empty and illusory nature of the subject is questioned and reinterpreted by the following poststructuralist feminists and philosophers, for example, Judith Butler and Gilles Deleuze, who assert the importance of the body (materiality) to the formation of the human subject. This ontical turn reminds us of the inseparable connection between the body and the mind, the corporeal and the incorporeal, and the exterior and the interior of the self. To put it simply, the human subject knows itself as the subject via acknowledging the difference between itself and the external objective world; at the same time, the human subject has to know itself as part of this world. The human subject is both the subject for and the object in this world. This topology of the subject has aroused year-long discussions among Kant and phenomenologists such as Hurssell and Merleau-Ponty. This unique nature of the human subject is called "the paradox of the human subject." The paradox has not been resolved until now (Newen). The coterie of the philosophers believes that the sense of the self is temporally formed by affects experienced by the human body interacting with its external milieu. The human subject is the "embodied" subject, that is, the amalgamation of affecting and affected forces inside and outside of the human body-- the process of embodiment.

With the advancement of (new) media technologies, the unison of human senses is forced to be disintegrated and human senses are demanded to be reintegrated at the same time. For instance, the technologies of recording and filming externalize and store human perceptions through diverse machines. Our sights are preserved and presented by photos; our spoken words are recorded, repeated, or even revamped by broadcasting technologies; even today, our kinetic movements are integrated into part of video games, in which the integration of our actual and virtual body movements become a necessity to beat the game. Through these fragmented senses or perceptions, our human beings have to rethink who we are and to reconnect these senses to regain the integrity of our

subject. Among all perceptions, sound (voice) is the most paradoxical being making the human being feel the coexistence of the sense of being of the world and being for the world.

Different from vision, sound/voice is emitted from and perceived by our body. Particularly, when we hear our voices, our subject is the hearing subject and the voicemaking object simultaneously. This paradoxical relationship between the body as the subject and as the object at the same time makes the formation of our subject in the process, that is, the subject is unfolding in time. For example, the sound is made possible as the air in our body is transmitted via the vibration of our vocal folds. If the sound could become a sound heard, it should be transmitted via the air as a medium that is a sonic wave, which later will be received via someone's eardrums. Then, the sound could be heard. This complicated journey of the production of sound manifests that sound is not an entity but an event (O'Callaghan 73). Sound is structured in time and through media. The source of sound is intractable if it is not transmitted by any media such as external objects, eardrums, thorax, and even sonic waves. Even if it is heard by people/living beings, the sound heard is not the same, and it is highly differentiated and mediated. Therefore, the effect of sound is quite individual and subjective while sound itself is objective and medial. Casey O'Callaghan once proposed that sound/voice is an event, of which existence is based on the "causal relata." He explains, "A sound is not motion in the medium, but the activity of one thing's moving or disturbing another" (61). What we sense is not sound itself but "the effects of sounds." It is because "They [Sounds] are events in which a moving object disturbs a surrounding medium and sets it moving" (61; emphasis added). He asserts detailly,

Sounds are not instantaneous events, but require *time to unfold*. They may tolerate shared location with their sources and with other events that occur *in* the medium. Sounds construed as audible occurrences are poised as *causal relata*. They stand in causal relations to the activities of the objects and events that we call the products or sources of sounds and they fulfill the causal requirement on any account of their veridical perceptions. (59; emphases added)

O'Callaghan's understanding of the effect of sound and the source of sound scaffolds a triangular relation between the source of the sound, the medium, and the hearing subject. This dynamic interrelationship has formed the audio space into a quasi-enclosed space, in which the hearing subject has to use his body (ears) to sense the sound and his consciousness to define the meaning of the sound. The multilateral interaction among the consciousness, experiences of our bodies, and the external milieu and media force the sense of our subject/self to keep formulated in this special sound space.

Marshall McLuhan in *Understanding Media: The Extensions of Man* talks about the power of the sound space that the radio has brought to the youngsters. He claims that the radio as the electronic communication media creates a secluded and individual space that becomes a "private space" for the audiences. By listening to the radio, the audiences can enjoy a "private world for themselves amidst crowds" (325). By listening to the radio, people can obtain massive, rapid flow-in information. The conglomeration of immediate information "contracts the world to village size;" however, the radio has no power to "homogenize" every dimension of the village (334). For the radio has a "decentralized intimate relation with both private and small communities" (335), it has the power to "retribalize mankind" (332). To simplify McLuhan's concept, the radio forms a unique "acoustic space" in which people will gather together individually according to their respective response to the content of the broadcast. The radio unites groups of people but makes people differentiated into diverse groups simultaneously. Whether in one group or diverse groups, the acoustic space provided by the radio certainly gives the audiences a sense of belongingness, which resonates with McLuhan's term "the echo chamber" (330). Why do the audiences anchor their sense of belongingness in the acoustic space? How do they establish their identity/sense of presence via the interactive movements in the acoustic space such as the emergent new communication app, Clubhouse? This paper attempts to answer these questions in terms of the concept of the embodied subject proposed by Merleau-Ponty and other post-humanists such as N. Katherine Hayles. This paper argues that the audiences establish their sense of the self in the live acoustic space, like Clubhouse chat rooms, where virtual face-toface-like communications are in progress.

Marshall McLuhan's "Acoustic Space"

What is the "acoustic space"? McLuhan describes it as "boundless, directionless, horizonless, in the dark of the mind, in the world of emotion, by primordial intuition, by terror. Speech is a social chart of this bog" (*The Medium Is the Message* 48). Before the writing system was invented, people were living in the acoustic space, in which only the speech could differentiate the dark of the human mind, like a bog, and establish "the abyss of mental and acoustic space, shrouding the voice" (qtd. in Schaffer 87). To McLuhan, the media-based society is "aural" (Schaffer 87), which is the world of "sensation" and "activities" (Schaffer 88). Surrounded by this dynamic acoustic space, people's ways of thinking and behaviors will be changed (Schaffer 88). The acoustic space (or soundscape) is not a dimension of chaos. On the contrary, the sound is the real being that will demarcate the aural space into diverse territories just as fences and walls will

do in the physical spatial dimension. Therefore, the acoustic space ought to be understood spatially. In contrast to the visual space, the acoustic space is "omnidirectionally centered" (Schaffer 94); people in the acoustic space need to receive and respond to "information tracks" to discern the next step they are going to take (Schaffer 95). We are always "triggered to respond to sound" (McLuhan and Carpenter 67). It is in this process of responding to and discerning the differences among diverse sonic messages that the hearing subject could gain much more sense of his presence in a soundscape, having a stronger sense of his subjectivity. According to the idea of the "acoustic space," McLuhan and other scholars persuade us to refocus our attention on the dynamic interactions between the body (the ear) and the external world. It is not the pre-given subject or the human mind to define the meaning of the world. We, like an agent, are affecting and affected by the cosmos. The human subject or the sense of our self keeps constructed through our experiences with the external world, that is, the world of materiality. Sound as it is, as an event, saturates the cosmos (McLuhan and Carpenter 67), shaping our "emotional life" (McLuhan and Carpenter 68) and our sense of the self. As McLuhan shares his vision with the people in the electronic age about the great effect that the acoustic space has brought to us, he claims,

We are living in *an acoustic age* for the first time in centuries, and by that I mean that the electric environment is *simultaneous*. Hearing is structured by the experience of picking up information from all directions at once. For this reason, even the telegraph gave to news the simultaneous character which created the "mosaic" press of disconnected events under a single dateline. *At this moment, the entire planet exists in that form of instant but discontinuous co-presence of everything.* (qtd. in Schaffer 96-97; emphases added)

His foresight to the changes that the electronic media had made to the early twentieth century has lasted continually until the current era: the digital age. In front of the explosion of massive information and new broadcasting and communications media or interfaces, especially the upsurge of podcasts and streaming online programs, modern people are immersed in the acoustic space. The linear and unitary perspectives are insufficient to deal with such a complicated cultural phenomenon; nonlinear and dynamic ways to deal with information are more necessary. As a result, how do we position our subject/self in such complicated thinking and hearing networks? The first step is to map our understanding of the subject/self in terms of the concept of the "embodied subject."

The Theory of the Embodied Subject (Self)

The concept of "embodiment" is proposed by Merleau-Ponty, who focuses on the significant role of the body and experience in the process of the formation of the human subject. "Embodiment" is formed via the interaction between the human body and its external environment. Dissimilar to the orthodoxical belief in the privilege of the mind, the process of embodiment reinforces the "agency" (sic) of the human subject responding to its environment (Sanders 121). The equivalence of the body and the mind in terms of the idea of embodiment frees the human subject from the constraint of the pregivenness dogma. Merleau-Ponty remarks, "it is the body which speaks" (qtd. in Vasterling 211). The notion reminds us that the body is of "expression" and "intentionality." It is where "meanings" are generated (Vasterling 211). To Merleau-Ponty, it is the body as a "passage" that crosses and unfolds the meanings of the world through our perceptions and emotions. Through these experiences of the body, we can understand the world individually and temporarily. This individual understanding of the world is unique and "indifferent" to others (Vasterling 213). This special effect produced by the body and its external milieu is a form of embodiment. Our subject is the "embodied subjectivity" (Vasterling 211). N. Katherine Hayles in "The Materiality of Informatics" claims, "Embodiment differs from the concept of the body in that the body is always normative relative to some set of criteria." In contrast, the embodiment is the "specific instantiation generated from the noise of differences." It is "contextual, enmeshed within the specifics of place, time, physiology, and culture. which together (sic) compose enactment" (196). It is always "other," "elsewhere," and "improvisational" (197). John T. Sanders also explains, "[t]he embodied agent is 'embodied' precisely insofar as the agent's capacities and functions are understood as deriving in vital part from activity, rather than from a priori gist or passive assimilation of external messages" (135; emphasis added). The mention of "activity" here refers to the "agency" of human beings. Human beings are "engaged by" and "engage" the external milieu. The reciprocal dynamical correspondences make the human subject always vital and influx (135). Human cognition (consciousness) relies on the context that embodiment is enacted (Hayles 203). Embodiment and the context are strongly correlated.

The Dynamics of the Embodied Subject in the Acoustic Space

Hayles in "The Materiality of Informatics" reveals the disembodied experience brought forth by the advent of the electric media technologies such as the radio, phonograph, and telephone. These mass communication broadcasting devices separate voice and presence (the origin of voice), disconnecting the body from the context, which forces humans to change their ways of thinking and behaving (Vint 119). O'Callaghan points out the reciprocal relation between the hearing subject, sound, and the external milieu. He says, "The perspectival character of auditory perception changes as one's relationship to the sounding objects and events in one's environment changes (147). The recorded voice/sound is transformed into inscription that is easily rewritten, rearranged, re-adapted out of its original context to serve certain purposes. The separation of voice and its source accentuates the pivotal role that "media" have played in the auditory experience. Media do not refer to certain technological devices; they include "communication flows, techno-social interaction, symbolic appropriation, and cultural and organizational issues" as well (Barichello and Carvalho 238). Sound/Voice should be mediated to be heard and perceived. According to McLuhan, media function as a "prosthesis of human action" which establishes a new extensive interaction between the human subject (cogito) and the world. Besides, messages transmitted via media are freed from their original source, making communications among messages, the human subject, and the world more dynamic and mobile (Barichello and Carvalho 238). The rise of mass media in the early twentieth century accelerated the flow of information and communication. However, the source of transmitted information usually comes from a unilateral source. The audiences are receivers, taking in these messages passively such as the audiences of radio programs. There are no sufficient dialogues or conversations generated between producers and audiences such as TV. In contrast to TV, the radio, to McLuhan, is released from the "centralism of organization," which performs its function in light of the pattern of linearity and continuity rooted in the tradition of visuality and "phonetic literacy" (Understanding Media 334). The radio takes advantage of the effect of sounds as events form diverse private and heterogeneous auditory spaces within individual communities. "Yet radio, because of its ease of decentralized intimate relations with both private and small communities, could easily implement the Platonic political dream on a world scale" McLuhan explains (Understanding Media 335; emphasis added). According to McLuhan's vision of the radio, the effect of sound is more powerful than that of visuality. Soundscape can welcome people into space, giving them a place of belongingness, like a transparent bubble unconsciously bonding groups of people together by their shared consensus on the messages transmitted by the broadcasting programs. The audiences are like imaginary citizens in the kingdom of sounds. Besides, the radio diversifies or retribalizes the world. An embryonic form of democracy could be seen in the advent of radios.

In 2001, a new form of radio broadcasting appeared-- the emergence of podcasts. Later, in the year 2016, it is called "the Podcast came of Age" (Funk). In 2020, the year of the Covid-19 pandemic, the popularity of podcasts has reached its peak because of

quarantine implemented worldwide. The upsurge of digital media broadcasting manifests the deep influence of audio technologies that the advent of the radio has brought to the human world. However, podcasts and traditional radio broadcasting programs are essentially different. Podcasts are used and produced in cyberspace (the digital media) while radio broadcasts are used and transmitted via mass media platforms (analog media). More flexible, communicable, and immediate than analog media, digital media welcome more communications, interactions, participation, and ways of appropriation on the media platforms. For example, social network media provide relatively free public spaces for people to exchange information, opinions, and comments on public affairs instantaneously. Besides, people can share their private daily matters on these interactive platforms wherever and whenever they intend to do. In this digital era, people possess multiple "digital identities" and are exposed to a colossal amount of information. The scholars believe that "cyberspace... allows for the simultaneous occurrence of reciprocity in communication and shared context. This is communication according to the 'all for all' arrangement" (Barichello and Carvalho 239). Thanks to the convenience and immediacy that digital media platforms have brought to us, podcasts become a more democratic dimension facilitating audiences to establish "internal communities," that is, a sense of belongingness. There are three characteristics to form an imaginary "online community": "read feedback on the air," "[break] the fourth wall and [speak] directly to the audience," and "have a call-in sit-down interview" (Funk). Shortening the distance and creating virtual face-to-face interaction via voice interviews with the audiences generate a soundscape (acoustic space). The audiences gain a sense of presence and liveness as the programs are on the air. The audiences gain a sense of presence and belongingness in this acoustic space. The audiences seem to sit in the studio with the podcasters and other audiences, waiting for random opportunities of talking with the podcasters and exchanging opinions with the other audiences; this effect of "synesthesia" strengthens a sense of "immersion" and "community" (Funk). Compared with the traditional online radios, podcasts are more "on-demand, time-shifted, personalized, and diverse in content and style" (Chan-Olmsted and Wang 6). The formation of the podcasts phenomenon results from "perception and consumption of mediated and real images and experiences" (Funk).

Personalization, on-demand services, and diversity of podcasts prompt the rise of other technology clusters to come in the following decades. Clubhouse, a new podcast-like online drop-in audio chatroom, has gone viral worldwide in May 2021 because of the quarantine in the rampancy of the pandemic. Launched by a startup in Silicon Valley in 2020, Clubhouse App is customized and can only be accessed by IOS and iPhone users. That having invitation codes and limited to the IOS system's users are demanded makes Clubhouse exclusively different from and more popular than other podcasts or

social networking sites. This kind of highly private and excluded chat room has appealed to many celebrities and ordinary audiences to join an individual acoustic space. The clubhouse host(s) can create an individual chat room discussing a certain topic, welcoming all audiences. The host(s) has a right to pick up among the audiences with who he/she wants to talk. This right to choose the audience to talk with not only gives a sense of privilege to the audience but also still creates a semi-democratic platform for the audiences to exchange opinions with the host (s). Compared with podcasts, most of which are pre-recorded, Clubhouse chat rooms are more private, random, immediate, and communicative to the audiences while less well-organized and informative in content than those of podcasts. Nevertheless, the immediacy of Clubhouse (no recording service) creates a more perfect acoustic space for the audiences. The source of the voice and the voice itself are synthesized when the chatting is in progress. The communication between the host and the audiences, though highly selective, is direct and transparent. All feedback can be given and heard on the air instead of the feedback read and responded after the end of the program. To put it simply. Clubhouse emulates the live shows on TV or radio broadcasting, inviting the audiences to a realistic acoustic space, limiting the rupture of the voice and its source, making a more real virtual sense of presence. Dwelling in this acoustic space, the audiences need to use their bodies to receive, perceive, and respond to the sound messages immediately. The reintegration of the body and the mind makes the audiences start their correspondences with other voices external to themselves. They are in and of this acoustic space-- they are the subject and the object of the acoustic space. The interactions between the hearing subject, the speaking object, and the external reality keep shaping and reassuring the subjectivity of the hearing subject and the speaking subject. Such a solid and frequent communication between the two parties solidifies the articulation within the audio chat-room community. In the period of quarantine, face-to-face communications among people are suddenly reduced, a lot of people are facing the problem of self-isolation. The appearance of Clubhouse APP offers people a virtual simulated acoustic space to listen to and share their own or others' thoughts, and even alleviate their senses of loneliness as a method of "a narrative therapy" (Strielkowski). Although Clubhouse is not accessible to all people, which has caused the drop of its users in numbers recently, the effect it

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¹ Different from the traditional radio programs, which is regional, pre-recorded, or live line, the second generation of radio programs such as podcasts become "on-demand episode" that can be tuned in worldwide. Clubhouse chatrooms, the third generation of radio form, preserve the second generation live and on-the-go radio program, and generate "a million individual experiences" due to their proximity to social networking media and their user-friendly and tailored live shows. Clubhouse chatrooms offer a more spacious platform to take in their audiences' opinions and make audience-host communications more vibrant (Eeman).

has brought to the world lets us see the power of acoustic space to the formation of the human subject envisioned by Marshall McLuhan more than 60 years ago.

Conclusion

Media technologies have changed our ways of living and thinking; it even has changed our sense of the self. Rethinking the relation between the human subject and technical objects around us helps us to reposition human beings in this world--the co-existence of humans and technologies. Sound/Voice is the most archaic medium to align people and the external world together. It is also a medium to demarcate the lines within diverse kinds of territories. Through sound/voice, human beings are living in the acoustic space. Through perceiving sounds or making voices, humans absorb all information and react to it simultaneously. In this process of thinking of and interacting with the external reality and the inner self, the human subject is in the ongoing becoming self, redefining his/her subject with the change of the environment. Especially in the twenty-first century, digital media technologies have led us to a new epoch of communications on websites. Whatever podcasts and Clubhouse chat rooms invite us to a new but also traditional acoustic space. Through this soundscape, the human subject has gained a new channel to redefine and broaden its sense of the self.

Works Cited

- Barichello, Eugenia Mariano da Rocha and Luciana Menezes Carvalho. "Understanding the Digital Social Media from McLuhan's Idea of Medium-Ambience." *Matrizes* Ano 7 N° 1. January/June 2013, pp. 235-46.
- Chan-Olmsted, Sylvia and Rang Wang. "Understanding Podcast Users: Consumption Motives and Behaviors." *New Media & Society*, October 20, 2020, pp.1-21.
- Eeman, Ezra. "Clubhouse and the great unbundling of Radio." medium.com/shapes-ideas/the-great-unbundeling-of-radio-4767c68dee89. Accessed June 26, 2021.
- Funk, Marcus. "Decoding the Podaissance: Identifying Community Journalism Practices in Newsroom and Avocational Podcasts." *ISOJ Journal*, vol. 7 iss. 1, 2017, pp.67-88.
- Hayles, N. Katherine. "The Materiality of Informatics." *How We Became Posthuman*, Chicago UP, 1999, pp. 192-221.
- O' Callaghan, Casy. Sound: A Philosophical Theory, Oxford UP, 2007.
- McLuhan, Marshall. Understanding Media: The Extensions of Man, Routledge, 2005.
- McLuhan, Marshall and Edmund Carpenter. "Acoustic Space." *Explorations in Communications: An Anthology*, edited by Marshall McLuhan and Edmund Carpenter, Bacon Press, 1960, pp. 65-70.
- McLuhan, Marshall and Quentin Fiore. *The Medium Is the Message: An Inventory of Effects*, Gingko Press, 1967.
- Newen, Albert. "The Embodied Self, the Pattern Theory of the Self, and the Predictive Mind." *Frontiers in Psychology*, vol.9, Article 2270, November 2018. www.frontiersin.org/articles/10.3389/fpsyg.2018.02270/full. Accessed May 2, 2021.
- Sanders, John T.. "Affordances: An Ecological Approach to First Philosophy." *Perspectives on Embodiment: The Intersections of Nature and Culture*, edited by In Gail Weiss and Honi Fern Haber, Routledge, 1999, pp. 121-42.
- Schaffer, R. Murray. "Acoustic Space." *Dwelling, Place and Environment*, edited by D. Seamon et al., Martinus Nijhoff Publishers, 1985.

- Strielkowski, Wadim. "Clubhouse: Yet Another Social Network?" March 8, 2021, www.ssrn.com/abstract=3832599 or http://dx.doi.org/10.2139/ssrn.3832599. Accessed April 25, 2021.
- Vasterling, Veronica. "Body and Language: Butler, Merleau-Ponty and Lyotard on the Speaking Embodied Subject." *International Journal of Philosophical Studies*, vol.11, no.2, 2003, pp. 205-213.
- Vint, Sherryl. "Embodied texts, embodied subjects: an overview of N. Katherine Hayles." *Science Fiction Film and Television*, vol.1, iss.1, Spring 2008, pp. 115-126.