

Doing Presence. On the Construction of Relations and Realities in Online Teaching Settings

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Abstract *In this paper, I shed light on the digital co-presence in online university teaching during the COVID-19 pandemic and its current discursivisation by students and teachers. Based on an interdisciplinary perspective which combines media theory, sociology, phenomenological and actor-network theory approaches, and drawing on my own observations, surveys at German universities, and statements from academics, I show how digital co-presence is produced by social practices and media dispositives. Furthermore, I point to perceived characteristics and effects of mediated presence, for example, on experiences of community and the self, and argue that perceptions of online teaching are subject to processes of habitualization and appropriation through strategies of making oneself at home. The experience of presence can, therefore, be seen as a culturally changing phenomenon.*

Keywords *COVID-19 pandemic; online teaching; digital co-presence*

Introduction

Videoconferencing in general, and online teaching in particular, are often considered to be characterized by a lack of 'reality' and, thus, 'presence', as the frequently used term 'virtual teaching' implies. The historian Wolfgang Schmale (2020) points out that online videoconferences do not achieve the effectiveness and productivity of a communicative and reflective situation in the seminar room. He speaks of the importance of "linking communication and sociability through physical presence".¹ Similarly, Gabriela Jaskulla, professor of journalism and media psychology, links the concept of co-presence to physical presence, stating that dialogical learning is a constant exchange, a process. And for this process "the whole person is needed. ... We have to sit together in order to deal with each other. The means of communication of presence make the crucial difference and are also a basis for teaching relationships"

1 All German text material has been translated into English by the author.

(Jaskulla 2020). Lecturers and students' opinions differ on how online teaching affects their interaction. Opinions in a faculty survey at the University of Marburg in 2020 ranged from the view that there is little difference between synchronous online teaching and courses in the university classroom to the conviction that teaching is not possible without physical encounters (Philipps-Universität Marburg 2020).

However, when the question of presence is discussed with the help of phenomenological and media-theoretical approaches, it becomes clear that a sense of co-presence within synchronous online teaching is, indeed, created and that the perception of positive, respectively, negative effects of mediation in online teaching situations are subject to socialisation and habitualization processes. Socialization in this context means the existence and the manner of previous experiences with digital means of communication, while habitualization can occur in correspondence with self-images entailing a certain habitus with specific tastes and views, for example, being a tech-savvy gamer.

The cultural anthropologist Stefan Beck (2000) has referred to technogenic forms of closeness and intimacy. Technogenic spaces can, thus, function as dimensions of socialization and create a sense of presence, of 'being there', albeit modified by the mediated environments of digital infrastructures. I will explore this idea in the following, taking the discussions on digital co-presence in the context of university teaching online during the COVID-19 pandemic as a starting point to attempt a conceptualization of digital co-presence with a focus on videoconferences. I try to approach the topic in an interdisciplinary way, taking into account different perspectives, in order to create a basis that can be fruitful for cultural anthropological analyses of digital co-presence in general. Regarding this endeavour, I draw on elements from various theories and studies on mediated presence, taken from information and communication science, psychology, sociology, phenomenology, actor-network theory, affordances theory and the concept of social interaction by sociologist Erving Goffman (2001). Using these approaches, I will show the conditions under which a sense of digital co-presence emerges in online conferences, and the aspects and influential factors that shape it. Based on my own observations as a university lecturer, data from surveys of German students and university teachers (2020–2021) and statements of academics, I will discuss the perceived implications of online co-presence for life-worlds, identities and the (bodily) self. Finally, I propose that presence can be understood not as a state but as an unfolding process of doing presence through social practices in a network of human-technology interactions, and that the experience of presence can be understood as a culturally changing phenomenon subject to processes of habitualization and appropriation. Telepresence, especially the aspects of remote control and the immersion in mediated environments, has already been discussed (e.g. the paper of famous artificial intelligence researcher Marvin Minsky [1980] and the study of communication scientist Jonathan Steuer [1992]). However, there are few studies

on the experience of mediated presence in education, (e.g. a paper by education scientist Gail Jones et al. [2015] on presence perception in the case of the usage of virtual reality devices in the classroom), and there is no study on the production of digital co-presence in teaching online during the pandemic. Moreover, focusing on this issue is important, especially in light of the aforementioned heated discussions on synchronous online teaching in which the questions of whether and how far ‘presence experience’ is possible in videoconferences seem to play centre stage.

Presence has been traditionally understood as temporal and spatial proximity, as physical co-presence. However, (digital) media can provide a liveness and experience of presence that goes beyond physical proximity, for example, through the immediacy of live television (Fewster 2010, 46). This phenomenon, also known as telepresence, has been described as “the extent to which one feels present in the mediated environment” (Steuer 1992, 76; see also Corwin and Erickson-Davis 2020, 170); it is defined not by spatial but by temporal proximity (Fewster 2010, 46). In this article, I want to address different aspects of digitally mediated presence, starting from an understanding of presence as perception and a feeling of ‘being there’. As an example, I will take the case of online videoconferencing in the context of synchronous online teaching at German universities during the COVID-19 pandemic and point out its specificities.

Conditions and constraints of digital co-presence

The conditions necessary for a sense of digital co-presence can be described with the help of approaches that decouple social interaction from physical presence. According to theories of presence research, virtual and physical interactions are potentially equivalent and only heuristically distinguishable in terms of subjective perception of presence (Bakardjieva 2003, 293).

The concept of presence can be analysed using the criterion of the subjective sense, which is linked to experiences and feelings in the mediatized environment, i.e. the experience of realism and immersion. From this perspective, presence can be described as an attribution effect, as the construction of the ‘reality’ of an environment by the people involved in the situation. Communication studies scientist Kwan Lee (2004, 30) defines presence as “a psychological construct dealing with the perceptual process of technology-generated stimuli”. As sociologist Shanyang Zhao (2003a, 140f.) points out, “so long as users believe that the assumption is correct, the remote environment remains real to them”. Accordingly, following sociologists Cornelia Hahn and Martin Stempfhuber (2015, 16), presence can be understood not as an ontological state but as a process produced by cultural practices.

The online classroom on videoconference platforms, such as Zoom or Big Blue Button, becomes ‘real’ and ‘present’ through the content presented on the screen

in PowerPoint presentations and videos, and through the interaction of students and teachers – in discussions which are transmitted auditorily and partly visually, in the chat, through excursions to portals like flinga.fi, where mind maps are interactively created by course participants, and, in the case of Big Blue Button, in the shared notes in which single observations or thoughts grow into collaboratively written texts.

Yet, while Lee (2004, 30) has argued that because presence is an attribution effect, “a technology-specific differentiation of presence (telepresence vs. virtual presence) is meaningless, because presence, by definition, is not about the characteristics of technology”, there are, as I will show, specificities in the production of online co-presence.

As a starting point, it is necessary to reflect on the nature of the experience of presence. This experience is achieved, to a not inconsiderable extent, by the focus of the attention on a given situation. This attention is given in different ways. Firstly, the subjective perception of presence is linked to sensory experiences and feelings in and with the (mediated) environment. Following phenomenological theories, such as those of Edmund Husserl (1950–52) and Maurice Merleau-Ponty (1974), presence can be linked to perception through the lived body (*Leib*), and bodily experiences through the senses (Fewster 2010, 46). Secondly, experiences of mediated presence also depend on the ability to (inter)act in and with the corresponding mediated environments, i.e. interactivity and the resulting agency or self-efficacy. Thirdly, and related to the other two aspects, we have the impression of presence in synchronous situations of social interaction, as theatre studies scientist Russell Fewster (2010, 46) and cultural anthropologists Anna Corwin and Cordelia Erickson-Davis (2020, 170) point out: in the moment we perceive a situation as social interaction, we are present in it. Erving Goffman (1996, 16) defines social situations as “the scene observed by all those immediately present”. When participants are focused on their fellow students’ voiced opinions during a course held by online conference, and are compelled to answer, they are certainly ‘present’ in the situation.

Therefore, mediated experiences of presence are influenced, on the one hand, by the users or participants in the social interaction themselves and, on the other hand, by the media environments and the conditions of interaction they create. These influencing factors configure the way feelings and constructions of meaning are experienced within a mediated environment. They lead to immersion and, thus, to the impression of presence. As film maker Martin Schweser (2000, 23) puts it, media unfold “a reality of their own” that causes “being drawn in”, a “dissociation from temporal, spatial and social contexts”.

I will now sketch out the conditions mentioned above that enable the experience of digital co-presence: in a first step, I will address the primarily media-related aspects of sensory input and interactivity and their effects: immersion vs. distraction. In a second step, I will discuss the user-related aspect of presence in situations of

social interaction. It is important to note that I consider these aspects not as necessary but as sufficient conditions for presence and, simultaneously, as aspects of presence or modes in which presence can manifest itself. However, these aspects are intertwined: the presence of more than one of them, or a greater intensity, should result in a more intense sense of presence.

Digital co-presence as function of sensory input and interaction/control possibilities

To elaborate on the first point, sensual experiences in the mediatized environment, in an adaptation of the concepts proposed by behavioural scientists Bob Witmer and Michael Singer (1998) and Gail Jones and colleagues (2015, 15), I distinguish the components of environmental presence that form sensory-induced immersion, firstly, vividness of surroundings and, secondly, realism, as essential.

The first aspect, vividness of surroundings and people, is related to the perceived sufficiency of information in mediatized contacts, which makes them seem plausible and lifelike (Ermi and Mäyrä 2005). Vividness is achieved by creating a mediatized space based on high information density through sensory impressions. It means the extent to which impressions are enriched within the mediatized space (Steuer 1992, 80). Enrichment has different aspects: sensory enrichment and social enrichment (Lombard and Ditton 1997). It can also be related to sensory breadth as the number of different sensory dimensions, i.e. the multisensory environment and the quantity of sensory impressions, and sensory depth: the resolution of sensory information (Slater and Wilbur 1997; Steuer 1992). Sensory vividness in online videoconferences is created by the contents presented and through the video transmissions of the participants' faces and upper bodies and their voices, while social vividness emerges through the thoughts they share with each other.

Sensual richness might, but does not need to be, related to the second aspect: the realism, for example, of objects and sounds (Lombard and Ditton 1997; Witmer and Singer 1998; Jones et al. 2015, 15). The realism of objects promotes the impression of presence, as 'unrealistically' presented objects impede immersion – they immediately draw attention to the mediated character of the interaction situation due to their appearance, which deviates from everyday experience. Sudden pixelations, image jerks, freezing of pictures or voice distortions can, therefore, abruptly interrupt the feeling of presence in synchronous online teaching situations. The amount of sensory input that engages the senses through visual and auditory data, as well as the representation of motion, may influence the degree to which an environment is perceived as 'realistic' (Jones et al. 2015, 17). The availability of audio and video transmission in online videoconferences could lead to a more intense presence experience. Furthermore, the precise coordination of all these sensory data which allows

for a “holistic experience of the virtual environment” is relevant for sensory-induced immersion (Heeter 1992) – which explains why a delay of mimic movement in comparison to the audio data is so irritatingly pointing to the ‘virtuality’ of the online classroom. In other situations of digital co-presence, such as in three-dimensional (3-D) environments, another factor comes into play: philosophers Paweł Grabarczyk and Marek Pokropski (2016, 32f., 37), referring to computer scientists Mel Slater and Sylvia Wilbur (1997), name the congruence of visual and tactile information and their alignment with the user’s movements as a prerequisite for achieving embeddedness in space.

Marwin Minsky (1980) describes the role of (visual and tactile) feedback from sensors which displays the impression of being present and incorporated in tele-presence. This is an important part of vividness and sensory impressions, and leads us to the second condition for the experience of co-presence in videoconferencing: interactivity, i.e. the possibility of actively influencing the content and form of the mediatized interaction within the digital environment (Steuer 1992, 80). As Corwin and Erickson-Davis (2020, 166) state, “presence ... can be conceived of as the dynamic and ever-emerging interaction of a perceiver-environment system”. Gesa Lindemann (2015) identifies the degree of intervention and control over the environment as characteristic of spatial co-presence. Control enables participation (Jones et al. 2015, 15, 17). According to Fewster (2010, 47), this aspect comes to the fore for the sense of presence in the context of social media: here, presence is increasingly defined by participation, rather than by shared physical or even temporal space.

An environment that allows for participation or agency is created in online teaching situations through the interface of input devices, such as a touch screen, microphones, a webcam and keyboard, and output devices, such as a monitor and headphones/speakers, and through features of the videoconference platform which allow for interaction, such as turning one’s microphone or camera on or off, the possibility to manipulate the mode in which the faces of the other participants are presented on the screen, and the ability to write something in the chat or the shared notes and draw on the whiteboard. Immersion occurs through the interface-based perceptions of shared reality (Witmer and Singer 1998). An interface becomes a new, partially shared space of digital co-presence that can be appropriated aurally, visually and haptically, and in which one can gain agency, but to whose pitfalls one is also equally exposed, and through which the participants are connected in a network of devices, software and bodies. Vividness, realism and control as preconditions for embodied immersion and, thus, the experience of presence in synchronous online teaching conferences, are fulfilled on a verbal, auditory and/or visual level, and even spatialized in 3-D environments, such as the online socializing platform Laptops in Space (laptopsinspace.de), which was used by some universities during the pandemic for social events.

Immersion vs. distraction

The degree of sensory input, interaction and control can be used to infer the extent of immersion, but also the level of distraction. Distraction, in this context, can be conceptualized as a measure of the extent to which the sense of presence is not given. In addition to a lack of vividness, realism and control, the potential for distraction arises from the interconnectedness of media and user characteristics in multimodal and intermedial contexts. As theatre studies scientists Liesbeth Nibbelink and Sigrid Merx (2010, 218) point out, “intermediality often addresses various sensory modalities at once, and typically the senses contradict each other”. Perceptual expectations in intermedial environments are sometimes deconstructed and a clash between digital sensory input and embodied presence can manifest, which can lead to experiences of surprise, confusion or even displacement and alienation (Nibbelink and Merx 2010, 219). In relation to the online teaching situation, the different private spaces of the participants that one sees during a videoconference could hinder immersion. The latter also depends on the functionality of the devices, such as the resolution, sound quality and speed of information flow (internet connection and device performance, i.e. processor speed and random-access memory available), which is one of the reasons for Jaskulla’s criticism of online teaching (2020) – she complains about the grotesque distortion of the voice in online conferences.

Of course, external disturbances can also cause distraction, given the fact that immersion is related to focusing on the mediated environment while ignoring the physical environment. Immersion can only occur if part of the physical environment can be ignored by focusing one’s attention. As Schweser (2000, 27) said, “it is the selective construction performance of the user that is necessary to achieve media ‘vividness’”. Immersion can be disturbed by technical deficits or unmediated impressions for which there is no habituation effect – most often by noise from outside, the neighbour renovating their house or children suddenly demanding attention in the home-office teaching situation during the pandemic. Such an experience can have the effect that “the space you had imagined has completely disappeared”, as Schweser writes with reference to telephoning. Sensory immersion can be facilitated by technology that helps to block out the physical environment (Slater and Wilbur 1997), such as interface components, for example, noise-cancelling headphones.

The ability to ignore disturbances is, in turn, influenced by individual factors, such as the ability to concentrate and the “willingness to disregard external stimuli” (Jones et al. 2015, 17). In addition, acute psychological states of the individual, such as mood, alertness and prior experience, also play a role (Zhao 2003b, 451). It is interesting to notice that, while a manifold of distractions can also occur in classrooms with physical co-presence, such as noises, high temperature in summer and

interruptions, they appear to be mitigated in comparison to the situation of digital co-presence by the fact that the bodily anchoring of 'being here' is more pronounced in the case of physical co-presence because more channels report it to the psychophysical system.²

If the online conferencing situation involves some kind of challenge-based immersion, related to the phenomenon of flow experience, the environment may be more easily tuned out because the trance-like focus on the corresponding task may lead to forgetting the physical space. Media studies researchers Laura Ermi and Frans Mäyrä (2005) point out that such a trance often occurs during gameplay. It should be similar with imaginative immersion – focusing on a narrative like a story (Grabarczyk and Pokropski 2016, 32). In our case: following the content of the university lecture.

Thus, the sense of immersion is influenced, on the one hand, by situational factors related to properties of the mediated environment, such as software, interface and disruptive events, and, on the other hand, by environmental factors, such as temperature, light, sound and smell. However, immersion does not only occur in shared audio-visual online space; it can also reach a high intensity without these modes of perception – related to the third mode that allows the impression of digital co-presence: synchronous situations of social interaction.

Experiences of presence in synchronous situations of social interaction

Cultural anthropologist Marion Hamm (2011, 29) describes how she spent days and nights “as if welded to a screen and keyboard, physically isolated in my shared flat” during her fieldwork on the G8 protests in 2003. She knew her field partners only through text communication and their nicknames, but for her, “an abundance of signs” compensated for the lack of non-verbal signals and acted “as a kind of digital corporeality”. As a result, she felt “digitally co-present in the vastness of the hybrid communication space in terms of my experience and actions”. Similarly, sociologist Gabriela Eiden (2004, 25) describes immersion experiences when chatting, “that you look at the screen and almost forget everything around you”, and linguistics researcher Katrin Lehnen (2020) points out that chat rooms create the impression of spatial proximity. Even in the case of emails, their temporal proximity can create a sense of co-presence.³

As we can see from the examples given, the experience of presence can mean parasociality, i.e. being present as a social actor through mediated interaction with

2 I thank Zhenwei Wang for the inspiration leading to this thought.

3 I thank Antje van Elsbergen for this observation.

each other, in the case of synchronous situations of social interaction.⁴ I, therefore, define social presence, following communication studies scientists Frank Biocca and Chad Harms (2002), as the feeling of being connected to others. Similarly, social work scientist Daniel Houben (2017) links social interaction to philosopher and psychologist George Herbert Mead's idea of mutual interrelatedness (1973). Thus, social presence does not require physical co-presence.

The main conditions for the impression of social presence relevant for online teaching situations are, as can be deduced, firstly, the synchronous sharing of (media) environments (Goffman 2001, 55; Houben 2017), secondly, mutual perception and awareness of each other (Lombard and Ditton 1997; Biocca and Harms 2002; Houben 2017), and thirdly, the ability to react to each other (Houben 2017), as also implied by Goffman's definition of social situations as "that to which a person can turn at a given moment" (2001, 55).

These prerequisites are also found in synchronous online teaching situations: the sharing of environments takes place verbally, auditorily and/or visually through videoconferencing tools, such as Zoom or Big Blue Button, and even spatially through avatars in 3-D environments, such as Laptops in Space. These tools enable mutual perception and awareness, and the ability to react to each other.

Vividness, realism and interaction possibilities – the aforementioned prerequisites for experiencing presence as immersion – also influence feelings of social (co-)presence in mediated environments in the form of visual representation and realistic movements of the other person(s) and their ability to respond to the perceiver in verbal and non-verbal interaction (Heeter 1992; Tu 2002; Oh et al. 2016).

Therefore, the sense of presence in digital communication depends on both the media as dispositifs that determine the conditions of action and the users and their actions, perceptions, feelings and constructions of meaning, which, in turn, are influenced by the media affordances and constraints mentioned previously.

I would like to illustrate what this means in concrete terms in the following section. Drawing on statements about online university teaching during the pandemic, I will reflect on the specificities and effects of mediated co-presence perceived in online conferences that are related to media properties and differences between users in terms of attitudes and experiences.

4 These interactions do not have to be confined to human others; co-presence and *communitas* can also be felt towards non-human actors such as animals or, in the case of games, non-player characters.

Perceived effects of mediated co-presence

Statements from students at the University of Passau show ambivalent perceptions, for example, of concentration. Compared to the lecture hall, 19 per cent of the students were significantly less attentive, 27 per cent somewhat less attentive, and 18 per cent saw no difference. However, 17 per cent also stated that they were slightly more attentive and 18 per cent that they were even significantly more attentive than in the lecture hall (Universität Passau 2020). One reason for the latter could be the reduction in distractions: the ‘seminar room’ consists only of the interface and the faces of the participants, and conversations between students now take place invisibly in the chat and do not interfere with the main interaction.

However, videoconferencing is often said to be more tiring than physical meetings, a phenomenon that has been called ‘Zoom fatigue’. Psychologists suggest several reasons for this. One is that people see themselves constantly and are critical of their own reflections (Bailenson 2021).

Drawing on Jacques Lacan’s psychoanalytic theory (1986), one can say that what might happen in this context is that the self-experiences itself in new ways – through the perpetuation of the Lacanian mirror stage. The latter begins when infants recognise themselves in a mirror or other reflective surface. The mirror stage also represents a permanent structure of subjectivity for Lacan. It describes the formation of the self through identification with one’s own image. By looking into the mirror, the child develops an awareness of themselves. The mirror stage, according to Lacan, also causes alienation and the splitting of the subject or self into the “I” and the “ego”. The “I” is the view of the self in the mirror – the experience of being seen from the outside, by others, leading to the development of the social self. The “ego” is the secondary, narcissistic identification of the self with an ideal that one tries to approach (Lacan 1986, 64; see also Borbach 2022, 8). The mirror stage is updated or perpetuated during online conferences. Normally, one looks in the mirror in such a way that one’s own idealized image – the ego – is confirmed; here, one is also confronted with unexpected, permanent (negative) views of the I. People are constantly striving to actively influence the impression they make on others (cf. Ruf 2020). Media studies researcher Christoph Borbach (2022, 8) has called Zoom a “permanent feedback loop” through continuous self-observation. The self-experiences its own presence, as one can imagine, with shocking clarity, the self and the unidealized external image suddenly and permanently converging. As a result, the self can become fragile and is reconceptualized through medialization.

In videoconferencing, the self is, as I would put it, fragmented between the online space where the image of the face is located and where the senses of seeing and hearing are focused – and the body that is there in another, offline space and that sometimes demands attention – when it is hungry or has other needs, such as back pain from sitting too long or freezing. These are private experiences that are not

shared with the other people in the digital space, with whom *communitas* is created only through watching, listening and speaking. Thus, the sensory data and materialities that cause a subject to experience its environment as an empirical life-world have changed.

Related to this, an effect could take place which has been observed in relation to digitization in general. Cultural anthropologist Manfred Faßler (2001) identifies the “complexity of distributed presence” as a consequence of digital networking. Houben (2017) mentions a “dissolution of the unity of body, space, time and self” in connection with the establishment of digital communication. This is reminiscent of philosopher Paul Virilio’s concept of *Teletopia*: “To participate in a teleconference or to be telepresent is to be here and somewhere else at the same time” (1990, 336). Under these conditions, subjects find themselves in a multiplicity of spaces (Borbach 2022, 12).

What is more, visual interaction in online conferencing is said to be an extraordinarily stressful situation because of the intense eye contact: a screen full of faces is looking at the perceiver – this can increase social anxiety because, as communication scientist Jeremy Bailenson (2021) argues, “When a face in the real world comes so close to our own, the brain thinks it’s an intense social situation: either conflict or a budding two-way relationship”. However, I believe that this dynamic is also likely to work in the opposite way to reduce social anxiety: the faces in videoconferencing are much smaller than in physical presence, so they suggest further distance, and the dimension of physicality, of being bodily in the same room as others, falls away. A side effect of the situation of a screen full of faces looking at the perceiver is that people may even have a stronger sense of the presence of others than in a physical seminar room: the others are not partially covered and at different distances – and so everyone can see and react to everyone else, which promotes feelings of closeness and intimacy.

Bailenson (2021) cites the cognitive load caused by the reduced decodability of communication signals as a third reason for zoom fatigue. Similarly, cognitive psychologist Christian Stöcker (2020) states in a column of the journal *Der Spiegel*: “On moving images the size of a credit card, we humans cannot correctly recognise what is naturally conveyed in a normal conversation: non-verbal signals, facial expressions, small gestures, body posture. This results in a constant, unconscious effort to ‘read’ the other person”.

And this is where Gabriela Jaskulla’s (2020) criticism of online teaching comes in. She complains that it is more difficult to perceive and respond to students’ needs. It can be argued that a physical presence is most comprehensive in terms of the quantity and quality of sensory information available. More levels of perception are addressed in a given amount of time. Some sensory data are also missing in online interaction, such as olfactory stimuli and body language in its entirety, and, thus, applying the theory of phenomenologist Hermann Schmitz (2007), one can deduce

that, to some extent, what can be said to be bodily palpable in terms of atmosphere is missing. On the other hand, there can be an even higher density of information exchanged online: participants use the chat to feed in additional content, such as links, which the whole seminar can see immediately. It is also possible to receive multiple statements in parallel, e.g. answers to questions can be given on two channels at the same time – via microphone and in the chat. In addition, as the names of the participants are visible under the pictures in videoconferences, students can (at least in theory) get to know each other more quickly, which could increase the sense of presence of the other. This could be further enhanced by the insight into the living environment of the participants.

An outlook to the future: habitualization processes

In the discourses on academic online teaching cited above, we find not only very ambivalent experiences and evaluations, but also very strong statements of rejection. Verena Kammandel, a trainee teacher, says in a newspaper article that “Pixel images are cold and rigid and implacable. The digital gaze is lonely” and “the whole seminar doesn’t mean anything to me because the image has no atmosphere” (2021). One explanation for this argumentation – which still requires further analysis – might be a centrality of the concept of physical presence to the understanding of academic teaching and the self-image of university lecturers and, on the other hand, to the specific needs of communitisation in the pandemic situation: the longing for physical proximity. As Houben (2017) puts it: “When co-present interactions decrease, and thus interactions become more presuppositional, the importance of bodies and relationships paradoxically increases”.

However, it is important to point out the culturality and, thus, the mutability of perception and interaction. The senses are culturally trained in processes of socialization and habitualization (Vannini, Waskul and Gottschalk 2012), as is illustrated by learning about the many flavours of wine, and, therefore, all the experiences, effects and evaluations of synchronous online teaching via videoconferencing that I have cited could change over time. The senses adapt and reconfigure in contact with new mediated environments. While playing a fast 3-D videogame for the first time, one might experience nausea, which, however, probably will not be the case the second time.

The visual sensory impressions relevant to the online conferencing situation are configured differently and given various meanings depending on the experiential background and role requirements. According to social anthropologist Sarah Pink and colleagues (2016), the way in which co-presence becomes meaningful is shaped by cultural contexts and norms that determine how intimacy is expressed and by behavioural expectations.

The corresponding attitudes and, thus, also the perceptions of mediated presence are again individual, dependent on experiences, knowledge and dispositions (see also Jones et al. 2015, 16). Grabarczyk and Pokropski (2016, 25f.) identify the perception of affordances as a key factor for experiences of presence in virtual reality. Affordances – the offers or invitations or the use properties of digital media infrastructures (Norman 2013) – appear in relation to users, their bodies, physical abilities, intentions (Grabarczyk and Pokropski 2016, 34) and socio-cultural backgrounds. This means that a medium offers different things to people with a certain knowledge or interests than it does to others, for example, alongside generational differences and the centrality of digital media for work and leisure.

The experience of media and the benefits that can be derived from it depend on individual preconditions – familiarity with elements of digital interfaces and whether, for example, menus are intuitively operated and user interface offerings are immediately perceived as such. Some researchers have argued that presence is closely associated with the degree to which an individual is willing to suspend disbelief and accept incoming stimuli at face value without close scrutiny (Lee 2004, 47).

The very different attitudes to digital media also play a role. Some social groups that have been familiar with (audio) chatting and videoconferencing for decades have long become accustomed to them. Examples include the military and gaming communities. In our specific case, the readiness, respectively, willingness to accept digital infrastructures as teaching tools – or the lack thereof – is also linked to the understanding of university teaching and what it should entail, as well as to corresponding didactic concepts at universities. There seem to be differences, for example, regarding discipline cultures. In subjects of the humanities, the discussion on bodily co-presence is thought of as being a vital part of not only classroom interaction, but also for the comprehensive education of students as responsible citizens. For other subjects, the transfer of knowledge is paramount, which leads to a pedagogic concept more orientated to frontal teaching, for which a more personal exchange is not as important, as is illustrated by a discussion at the University of Jena between philosophy professor Andrea Esser and professor of business administration Nils Boysen (2020). A conference report from 2020 suggests a change in interaction habits. 'Virtual' meetings were described by some as 'face-to-face' events. The report concludes: "The disembodiment of the concept of presence has begun" (Krischke 2020). Zoom's statistics show a huge increase in the platform's usage. While 19 million Zoom users were registered daily in December 2019, by April 2020 there were over 300 million daily meeting attendees (Iqbal 2020). Borbach (2022, 4), therefore, refers to zooming as a new cultural technique. Citing philosopher Michel Foucault, he states: "The Zoom platform, thus, establishes ... a specific order of discourse, insofar as it technologically predetermines communication, installs viewing regimes

and formats visibilities ... Zoom, therefore, evokes a discursive order of prefigured visibilities" (Borbach 2022, 5).

The successive appropriation of technogenic spaces that promote the perception of presence can be understood as the implementation of strategies of making oneself at home, as described, for example, by cultural anthropologist Simone Egger (2014). The following components are relevant for strategies of making oneself at home: a subjectively meaningful (affective) relationship to places, people, things and activities, reliability and security, the possibility of participation, agency and control possibilities to experience the space as something that can be shaped, and the production of meaning through the common, familiar.

Conclusion

Perceptions of presence and interaction are shifting and have been transformed by taking place online. Influential factors that produce different forms of online co-presence are the interplay of media dispositives and users, who create the experience of presence through their actions, perceptions, feelings and constructions of meaning, and their effects on life-worlds, identities and the (bodily) self. As I have shown, different aspects that create and shape the experience of mediated presence are, firstly, immersion through the engagement of different senses through vividness and realism, secondly, interactivity as the possibility of interaction and control, and thirdly, social interaction enabled by the sharing of media environments, mutual perception and the ability to react to each other.

Although the physical immediacy of others is a central component of the sense of social co-presence, I have shown that social presence is, nevertheless, created in distant online settings without physical contact in the sense of touching or being exposed to the physical presence of other bodies – through being 'touched' by their voices, images or texts. Individuals dynamically create presence through their actions, perceptions, feelings and constructions of meaning. As Fewster (2010, 47) puts it in the case of mediated presence, "notions of presence, then, exist increasingly as transitional spaces between the live and the digital more than as an absolute ontological condition".

Mediated presence in online teaching situations entails specific requirements, such as a sufficient infrastructure and the willingness to accept it, and ambivalent (short-term) effects in terms of perceived intimacy, concentration and self-perception. However, the perception of presence is subject to social norms, habitualization processes and strategies of making oneself at home. Presence can, thus, be interpreted not as a state but as an unfolding process of doing presence through social practices and relationships. Its concept will continue to change with the dynamics of use and corresponding framing.

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