Voice Recognition in the Era of Virtual Reality: Disruption of Normative Social Meaning-Making

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Abstract

The teaching and working world has been disrupted by developments known as the Fourth Industrial Revolution. As we grappled with the COVID-19 pandemic, the world saw massive disruptions in how and where we work, teach, learn, and socialize. As moves to continue social interactions via virtual platforms increased as a result of COVID-19 restrictions, we saw disruptions in everyday social meaning-making. This article, via reflections from personal observation and conversations with colleagues, engages with the idea of voice recognition as an important social cue in virtual interactions. The article shows how taken-for-granted social markers of engagement can be rendered useless in a context where the only connector to the people you are interacting with is their voice. The article challenges us to engage with the following questions: What impacts does the move to virtuality have on social engagements that allow us to humanize each other? What can we do to maintain the important social cues important for meaning-making in the context of teaching, counseling, and consultation as we see many of these roles move to the virtual space?

Keywords: Voice Recognition, Online Teaching/Meetings, Social Meaning-Making, Virtual Reality

1. Introduction

Virtual reality caught many of us by surprise and continues to disrupt normative ways of social meaning-making. Meaning-making happens in our effort to make sense of our environment. This process is undertaken because the world seems to be complex, thus we find ways to classify things, people, animals, plants, and

biological processes so as to cope with this complexity (Dobbin 2009, Pariyadath, & Kline 2016, Satar 2016). As a social scientist and someone who thrives from social engagement, I have found this new normal a challenge. I started working for a new organization at the beginning of 2021, thus most of my interactions with my new colleagues had been online, until recently. My first move to online teaching and engagement happened when South Africa introduced the lockdown in March 2020. In retrospect, I realize that I had a lot of anxiety about the move to online teaching, which involved recorded lectures and the setting up of and managing of WhatsApp groups. My anxiety was a result of the unknown. I loved face-to-face interactions, and I considered myself good at reading the room and getting my students to engage to address perceived confusion resulting from reading their bodies, their sighs, and facial expressions. The physical context played an important part in how I made meaning not only in my teaching but in my everyday interactions with friends and colleagues.

For example, when meeting a new person, I would use lessons from my earlier interactions to position the person. These lessons included assumptions about their dress style, their make-up or lack of it, how they carried their body, and where they sat in conference/meeting room settings. These are referred to as social cues. In clinical sociology, for example, engagement for mediation in counselling and consultation processes has also been done and built on physical interaction cues. These cues are being eroded in online contexts. In defining clinical sociology, Fritz (2020) builds on the conception of sociological practice, which has a long history in South African sociology, especially during the struggle against Apartheid. Fritz (2020, p. 5) goes on to argue that clinical sociology is one form of sociological practice which is "creative, humanistic, rights-based and interdisciplinary and seeks to improve life situations of individuals and groups in a wide variety of settings". Interaction/social cues play a fundamental role in how mediation and casework are facilitated. Thus, the move to online engagement has an impact on these settings and calls for creativity for clinical sociologists as suggested by Fritz.

This article provides a reading of online engagements in the higher education context in South Africa. The move to online teaching and virtual working took the world by storm which started during the COVID-19 context and is continuing to influence teaching and work beyond COVID-19. The article is divided into four sections, all informed by personal observations and conversations with colleagues as we try to deal with the changes brought on by remote teaching and working.

1. Engaging with the Disruption of Virtuality

The physical contextual space served me well in my efforts to make social meaning of my space and to characterize who I was interacting with via normative identifiers like how they dressed, their smell, facial reactions, and how they carried their body in different spaces. I know that the same identifiers were used for those who encountered me. However, since the COVID-19 pandemic, I have found myself lost – I have been forced to rely largely and at times solely on voice to characterize myself and others. Klaus Schwab (2016) writes about how the current technological revolution is transforming humankind. In this article, I concern myself with the same idea in terms of how, since the COVID-19 pandemic, we are forced to identify with a factor I have known to be significant in the digital space – voice recognition.

My initial interaction with the term *voice recognition* was in the context of software applications for smart technologies. In an article by Ionita (2008), the term voice recognition is referenced in the context of human-computer interactions, not in human-human interactions. According to Scardina (2018: p. 1),

> "voice or speaker recognition is the ability of a machine or program to receive and interpret dictation or to understand and carry outspoken commands… Voice recognition systems enable consumers to interact with technology simply by speaking to it, enabling hands-free requests, reminders, and other simple tasks".

This use of technology has become a feature because of advancements in "*Artificial Intelligence (AI) learning and the subsequent development of*

intelligent assistants such as Amazon's Alexa, Apple's Siri, and Microsoft's Cortana" (Scardina 2018).

In August and September 2021, I had the privilege of first-time face-to-face (physical) interaction with a few of my "new" colleagues. I had already met many of these colleagues virtually over the first seven to eight months of 2021; I had briefly seen some of their faces as we tried to humanize our virtual interaction. One of the current etiquettes of online meetings has been to briefly switch on your video to show your face so that the people we are interacting with can at least be introduced to us. I have, however, found that these attempts are a bit futile as the few seconds that one shows their face fails to offer the information one gathers on who one is interacting with when such a meeting is physical. Again, our underdeveloped technological infrastructure in South Africa has also meant that we are unable to effectively use the video feature in most of our online platforms, thus making it hard to match the voices to the faces of our colleagues. Research shows that infrastructure for digital engagement remains a challenge in South Africa because of "insufficient spectrum and inadequate access to favorable low frequency spectrum" (Bhandari 2020: p. 12). As a result of this infrastructure problem, sometimes when videos are turned on, the flow is slowed down, or the connection gets lost.

What I observed in my first face-to-face interactions is something I never thought would be significant in my social interactions – voice recognition. As indicated earlier, I have learned over the years to read the room, the faces of those around me, the multiple shifts of the body, and the multiple expressions in everyday interactions to make social meaning, including to read their individuality presented by how they carried themselves. As social beings, our interactions in the workspace and other social spaces are influenced not only by how we speak and sound, but we also send multiple cues to communicate, including our facial expressions and body language. Having access to these characteristics of face-to-face interaction provides important cues for social interaction and communication practice. The research argues that the ability to read each other's body language facilitates social connection and meaning-making (Dorr-Bremmer 1990,

Hunsinger 2008). These cues are completely lost in a context where voice becomes the only marker of what is being communicated.

Until recently, many of us have never had to meet a lot of people and share daily experiences and personal experiences without multiple markers of who they are in terms of their faces, fashion sense, and other normative markers of physical identity. The virtual work mode is disrupting how we develop individuality, how we share it, and thus our influence on how others read us. I am writing this to illustrate how virtuality is not only disrupting where we work but also how our tendencies for certainty through stereotyping are limited. This stereotyping is achieved by how we read and link certain bodies to certain voices, tones, positions, and behaviors. The virtual reality of work and teaching and learning challenges us to broaden our parameters of communication – so that we do not rely only on physical features to help us in meaning-making. In a brief reflection on how moving to online teaching has impacted social interaction, Professor Peace Kiguwa[1] shares the following thoughts:

> So, for example, in class before COVID, I could read my students' body language and guess when there was a sense of discord or lack of understanding. Or even just who they were (so, I was VERY shocked recently to discover that one of my postgraduate students this year is a Muslim young woman who wore a hijab. I did not pick this up because her video was always off). Maybe it matters in terms of what/how I interact with her and the class, but I think in online engagements, we do work with assumptions in our minds of who the other person is. And so, because I did not have that, I did not engage in a way that I would have face-to-face, even if just by engaging with aspects of her culture to enhance our discussions. Also, what I also noticed as a result, was her silence – something I think had to do with not knowing how to engage with me and the group about some of our conversations on gender and sexuality, especially given that I was unable to bring her into the conversation because I was unable to read that the class might have had diverse students with diverse backgrounds.

1 Professor Peace Kiguwa is Associate Professor in Psychology at the University of the Witwatersrand.

Prof Kiguwa indicated that, because of the virtual space, she lost an important aspect of face-to-face interaction in the classroom which she had previously taken for granted – making meaning via dress. As a result, she was unable to bring one of her students into the discussion. She argued that, as a result, she felt that she lost something important. In the process something was learned, we must reimagine how we teach and interact to make the virtual experience more human and inclusive.

The same has been true for me. I realised that I had to work hard to change my teaching and interaction practice so that it did not rely on these kinds of cues. I had to activate the students and myself to interact with the world differently. for example, telling them before we discuss concepts, that everyone must bring in a real-life example of something happening in the world that speaks to what we are discussing. So, lectures became less theory and more practice oriented. In them, by discussing their examples and objects and their feelings about them, I could get a sense of their politics and positions. Pillay and Agherdien (2021) indicate that, in remote teaching and learning, it is much harder to develop the social connection and social presence that is required for effective pedagogy. In addition, they illustrate that many of the effective social cues usually used to humanize the classroom experience are lost in online engagement.

Physical interactions are usually determined by time and space, which also determines the rules of engagement and, thus, facilitates how one positions oneself. This is with regards to dress code, how to speak, turns in the conversation and acceptable disruptions. According to Dorr-Bremmer (1990: p. 381), "in order to locate and identify the social context at the moment, participants in an interaction seem to take into account the time and place of the scene at hand and especially the actions of others present". In the virtual context, we have had to deal with bringing together in one platform multiple times, spaces and thus a disruption of normative rules around dress code and what are deemed appropriate disruptions. I have sat in online meetings where colleagues would be disrupted by children crying or asking for something from the parent as they just switched on to present or make a point during a meeting. For

example, in Lesego Plank's[2] reflections on her experiences of the merging of the virtual world and her home, she found that she experienced new pressures, including having to remind her Gogo that when she is in her room, she is working and thus should not be constantly disturbed. She shares her experiences thus: "She will enter the room whilst I am teaching, and I would raise my hand to indicate that I am in the middle of a class."

As we have been forced to work together as we sit in our different homes due to lockdown, we have seen the merging of home and work. On the one hand, virtuality and the merging of multiple times and spaces have lifted the veil of perfectly curated work lives characterized by suits, clean-shaven faces, made-up faces, salon-prepared hairstyles and nails. This new reality has led many to reevaluate their lives completely, which has resulted in a more relaxed stance on multiple issues, including long commutes to the office. Recent debates on work have begun to suggest the importance of blended possibilities, where both options are provided. In the teaching and learning space, the question of digital e-learning has challenges, given the inequality in access to e-learning infrastructures in South Africa.

Another major challenge has been accessing electricity, mainly for the already marginalized. South Africa started implementing electricity load reduction processes called load-shedding in late 2007 (Rathi 2022). Periods of load-shedding can take anything from two hours once a day to periods of four hours twice or thrice a day. What is also worth noting is that load-shedding affects areas in the country that are supposed to be the economic hub, that is the Gauteng Province. It is also important to note that even though this is the case, the poorest of the poor are still largely more impacted as it is difficult to organize individual alternatives like solar electricity which has been grown as an alternative for those who can afford it. As I am writing this on the seventh of October 2021, 9:33 pm, my area has just experienced load-shedding. I am using my phone to cast light on my keyboard, and luckily my laptop was charged earlier in

2 Lesego Plank works as a part-time lecturer at the University of Johannesburg and is also a PhD candidate.

the day. This is a luxury that many do not have. I know of colleagues, students, and family members who live in Soweto and have gone for months without electricity.

These experiences with electricity make it hard to see the possibilities that proponents of the Fourth Industrial Revolution (4IR) emphasise; how do I play where the playing field is made unequal by continuing oppressions of the past? On electricity and virtual teaching, Lesego, a PhD candidate who lives in Diepkloof, Soweto, had the following reflections to share"

> My laptop and phone are always on the charger; this is because I experience both load-shedding and load reduction throughout this year as I live in Soweto. I had to buy Magneto rechargeable LED lantern lights because every week our lights are switched off either from 5am until 9am or 5pm until 10pm. I have made it a norm to always charge the lights, because we were spending so much on candles but also with candles it was not as conducive as compared to the electric lights.

Lesego works as a lecturer during the day and does most of her PhD writing work at night. This has not happened as planned, as she is forced to be constantly catching up with work that she would usually do during the day because of electricity access challenges. Even though Marwala (2020) suggests that mastering previous developments from the first three industrial revolutions is not necessary for one to understand the 4IR, he is silent on the main issue which is the fact that challenges with access to electricity impacts the ability to engage fully and effectively in both the use of these new technologies and, most importantly, on the potential to develop context-specific 4IR technologies. As indicated earlier, many experience internet disconnection during load-shedding. Lesego shares the following experience: "Look at the disconnection of internet when there is no Wi-Fi, how in many cases most home modem/router are connected to the electrical socket, then there is disconnection to the social world".

As a result of the country's inability to fully use technologies and tools of the first three industrial revolutions, and especially with the electricity challenge, our potential to develop context-specific

4IR technologies remains limited. Unequal access to electricity is not a new phenomenon (Khunou, 2002); the Eskom, Soweto cost recovery issue is one that has continuities from the past. In a context like Soweto and other townships there is systematic non-payment for electricity and other municipal services dating back to the call to make the apartheid state ungovernable. As a consequence, municipalities put measures in place to recoup costs for use of these services. These measures usually include cutoffs of services. Hlatshwayo (2021) rightly contends that the issue of access to infrastructure is an economic justice question as its potential denies the already marginalized access to economic opportunity, and I would like to assert the power to determine how one is represented and defined. One of my PhD students, who is also a junior lecturer at the University of Johannesburg, has been unable to draft most of the work he had in his plan due to lack of electricity in his area in Soweto. He first experienced load-shedding and then an issue with an exploded community electricity transformer that Eskom refused to replace because Soweto residents are in arrears. This has been going on for over eight months, which is basically most of the year. Electricity issues in Soweto are not a new challenge. In 2002 I engaged in a study that showed how Soweto residents experienced unequal access to electricity and resorted to illegal connections and other equally dangerous access mechanisms to electricity (Khunou 2002).

Another important point raised by Marwala (2020: p. 61) in his discussion of the electricity issue in South Africa is the lack of appropriate skills by municipalities to generate and transmit electricity, including the inadequacies of professional engineers and engineer technologists. The question, then, is: how will we develop appropriate AI technology to address our electricity and other social challenges, when we have been unable to leverage skills of the previous revolutions?

In cases where video engagement is not supported by the infrastructure, it has redefined our fellow colleagues and collaborators as voices behind a dark screen with a name as the only identifier of who we are interacting with. Consequently, making them into voices without the other social cues that go with face-to-face interactions

makes the interaction incomplete. The e-connection infrastructure is also a challenge for ease of use of these technologies. Lesego reflects that she has found herself dealing with new inconveniences; instead of her historical challenges resulting from transport infrastructure challenges, she now has e-connection challenges. She shares her experiences thus:

> But now, over one year and nine months, I have not boarded the Rea Vaya or taxi to campus, I have not walked over the UJ bridge, I have not said, "sorry I am late, I was stuck in traffic", or "the bus got stuck" or "there was a strike". Instead, now it's "sorry, I can't log in because of my poor network connection" or the now classical "sorry I can't hear you properly you might have poor internet coverage".

Our move to virtual teaching, learning, and work has come with what looks like new challenges; however, when one uses the lens Lesego provides in her reflection, underdeveloped infrastructure continues to be our challenge. Hlatshwayo (2021) alerts us to the reality that the South African state has failed to provide access to the infrastructural and technological developments of the first three revolutions and it seems from our experiences thus far that they will continue to fail in this regard. Will Africa ever lead in any of the upcoming socio-economic revolutions? Without the power to define provided by ownership of capital, the answer to this fundamental question is a resounding "no". Are we able to participate fully in this revolution, or has the train already left? Marwala (2020) argues that his intentions as an advocate for the significance of the 4IR are to make sure that we are not left behind. The evidence might be indicating that his call is a few industrial revolutions too late.

1. Virtuality and the Centering of Voice Recognition

The physical workspace can be argued to be a context rich with multiple opportunities for meaning-making, which have influenced our understanding of employer-employee relations, productive vs reproductive work, and the formation of formal relations and rewards. These meaning-making processes influence who is promoted, who is ignored, who gets the corner office, and who sits at the back.

However, in the virtual world, reality or realities are influenced by different factors, for example, "virtual reality typically incorporates auditory and video feedback, but may also allow other types of sensory and force feedback through haptic technology" (https://en.wikipedia.org/wiki/Haptic_technology).[3]

As one reads the multiple cues in physical social interactions, one is also able to regulate the interaction. This is particularly important in the context of the classroom and in running administrative and academic meetings. However, in the recent new normal, we are all redefining what it means to be in class and in a meeting. The cues available to regulate are completely absent in the virtual space, especially where the video mode present in the multiple virtual platforms is not effective in the South African context where the online infrastructure is not fully supported. As a result, most of our interactions with students and colleagues are without video mode, thus we are forced to interact with the voice. Even though language is argued to be a significant cue for social meaning-making, I personally have not found it as a central marker for identifying people I know.

Knowing someone I work with or someone I teach has involved multiple modalities including their bodies and their gestures (including how their mouth shifts when they smile, frown, or when they are shocked). I am now grappling with a new reality where voice recognition is becoming a significant identifier for those I have met recently. This is throwing off the stereotypical connections we make for certain bodies with regards to how we think they should sound, for example the assumption that black women are loud. Online engagement, therefore, means that we must work harder to know our colleagues/students. We can no longer rely on easy cues. But, on the other hand, it may also make us lazier. For example, in my engagement with my "new" colleagues[4]. I observed this stereotype

3 According to Wikipedia, haptic technology refers to, "any technology that can create an experience of touch by applying forces, vibrations, or motions to the user". https://en.wikipedia.org/wiki/Haptic_technology

4 I started my current position at the beginning of 2021 and have only recently met most of my colleagues. From the beginning of the year, I have interacted with them virtually – via voice connection mainly.

when I met for the first time a colleague with a strong commding voice – I assumed from her voice that she must be big and intimidating. However, when I met her physically, I reacted to the misalignment between the familiar voice and the "strange" body that carried it. She had to repeat my name before I could acknowledge that I knew the voice. My ability to recognize her voice could not be trusted as my normative recognition of those I know, have never only been from their voice. The misalignment between the voice I recognized and the "strange" body was because she was smaller in stature and had a soft face – these were at odds with my assumptions of what type of body and face should carry a voice like hers.

On recognizing that an unintimidating body carried the big voice, I realized how social face-to-face cues might easily lead to stereotypes that might be completely off in terms of the intentions of the individual. I had to contend with the question of how I might have been stereotyping those I have interacted with because their bodies suggested weakness or because their voices suggested strength. The virtual realities we find ourselves in are an opportunity to reevaluate old ways of doing and relating.

From the beginning of August 2021, I met a few colleagues in the corridor and would greet them, and then the colleagues would laugh and shift their energy at recognizing my voice. I felt the same with a few colleagues who, when they started speaking, would be shocked as I recognize their voice. My shock was a result of the fact that I had built a very different sense of who they were from our online engagement; some voices were sweet and soothing, others rough and unimpressive. In my reflection on these shifts, I realize how the online space might be useful in reducing the normative characterization of who we like and who we hold prejudices against. This article seeks to engage with how the virtual workspace is centering new ways of identifying with each other and how those have the potential to shift normative prejudices that influence how we interact and who we interact with.

It is important to note that, where multiple physical markers of meaning-making are removed in the virtual space, one still uses the same assumptions to typecast those we interact with. This is

because one of the reasons we are stereotyping in our engagement with others is a result of our need to simplify what we consider to be a complex social world (Pariyadath & Kline 2016). As critical race and gender scholars, we have recognized how this move to simplify often creates challenges for the marginalized. These challenges emerge due to stereotyping and discrimination, often made possible by our need to use old assumptions to typecast individuals we might be meeting for the first time.

1. Absent Bodies, Multiple Times and Spaces: Re-imagining Normative Social Cues

Moving to the virtual space has meant that there are significant changes in how we interact, which influences the diversity of cues present in physical interactions. Thus, meaning-making is shifted from the multimodal cues present in physical interactions. Research shows that, in online communication, all semiotic resources "are integrated in unprecedented ways, enacting new interactional patterns and new systems of interpretation among web users" (Sindoni 2013: p. 2). Therefore, it can be argued that face-to-face communication theories may not always be sufficient or appropriate when interpreting online multimodal communication (Satar 2016). In my personal observation, I tend to agree with the views shared by Satar (2016) that virtual engagement removes multiple cues usually present in face-to-face communication. These cues include non-verbal communication, body gestures, and emotional expressions, among others (Swartz 2000). These cues make for rich data for meaning-making. In their absence, what are we left with to make meaning of our social interaction?

My earlier reflections suggest that we can use our old understandings, or we can use new conceptions – that is if we allow ourselves to reflect on the possibilities provided by the new online world. A challenge for communication has been opened. In further reflections, Prof Kiguwa asks, "Do I need to see you to know you?"

This is an important question, as it relates to how those without visual impairment assume that seeing is believing. However, the

vision is not the most important marker of interaction for many individuals. Prof Kiguwa further observes:

> My visually-impaired student said to me the other day: "Now, you will all have to work with imagination the same way I always have!" And I realise that all this time, she has worked with voice recognition to make sense of her world. But her idea of working with imagination is a good one. We will have to imagine differently the other person sharing our screen.

This reflection suggests that it is important to integrate multiple ways of knowing. Is this providing an opportunity to do away with social cues linked to discrimination? Is it possible that, when online, we engage with more compassion towards our coworkers than we do when in face-to-face interactions? Or is it possible that we call on the same cues used to discriminate in face-to-face interactions? However, discourses of virtuality state that, our already existing interaction modalities facilitate the possibilities presented by the virtual world. I refuse the notion that there are no possibilities for justice work to use these tools to reimagine existing inequalities. Pillay and Agherdein (2021) suggest that justice in teaching and learning in the context of e-learning will require more cooperation to ensure various methods are used to encourage participation and connection with colleagues and students.

1. Presence in Absence: Virtuality and Dis/engagement

Literature on communication technologies and virtuality illustrates the importance of understanding conceptions of presence in absence. Communication technologies, including print media, cellphones, and most recently smartphones, computers and their myriad communication applications like WhatsApp, Zoom, Teams, WeChat, and others, should be considered "as powerful contributors to absent presence" as they allow people to communicate at a distance (Gergen 2002). The idea of presence/absence is one we can draw from in thinking about meaning-making in online engagements. In a newspaper article I penned for the Sunday Independent titled "Fourth industrial revolution: possibilities for thinking of simultaneous father absence and presence" (Khunou 2018), I make the argument

that virtuality has the potential to bridge the divide between physical absence with its ability to provide virtual presence in the case of migrant parenthood and non-residential parenting. Can similar ideas be used to make the e-class room more present?

The absence of physical bodies in virtual meetings and lecture halls has resulted in a new dilemma. Are the historical controls for making sure the students write their exam without assistance possible? During private meetings, how do you know uninvited guests are not sitting in, listening in where they should not be? These are significant ethical questions for virtual engagement. How do you determine that an issue on the agenda is fully engaged during online meetings? I have observed loud silences in my first online classes. I could not see the students, or determine that I had their full attention. My questions would go unanswered, and my usually effective prompts for engagement with concepts I teach seemed to have lost their power to inspire conversation. I was also unable to feel the room to gauge if there was confusion, irritation, and a need to change tack and/or pause. I found the same silences to be true during virtual staff meetings, senate meetings, and other committee meetings – it seemed like nobody was present or that the speaker had been relegated to a monologic speaker. Gergen (2002: p. 229) argues that, with monologic communication technologies like radio, television, and films, the audience can easily switch off or relegate the message to background noise. Is it possible that the silences experienced during these online meetings and classes mean that the audience is logged on but disengaged?

Even though I could see who had logged into the meeting or lecture hall, I was unable to determine who was present. I realized that in the virtual, digital world, we must contend with a new phenomenon of absence in presence. Gergen (2002: 227), in his engagement with the absence in presence created by communication devices, argues that "increasingly these domains of ulterior meaning insinuate themselves into the world of full presence – that world in which one is otherwise absorbed and constituted by the immediacy of concrete, face-to-face relationships". In the context of virtual teaching and learning and virtual work, space has been opened to

make presence absent. This absence-in-presence dilemma is a result of these technologies' ability to blur boundaries (Kraemer-Mbula & Mazibuko-Makena 2021) through the merging of multiple times and spaces into what historically was the home, workspace, or lecture space. In such a boundaryless context, is it possible to be concretely present in all three spaces at the same time? How do we then define "now"? In this context, one's attention is simultaneously pulled into multiple domains – thus rendering it as non-existent.

1. Conclusion

COVID-19, and the rapid move to virtual work engagement that it facilitated for South Africa and many parts of the world, has multiple implications for where and when we work. It has forced us to identify characterizations far removed from the historical norm where one was represented by more than their voice. Social meaning-making about who individuals are is now being forced to be made without the multitude of information present in physical social settings. This article illustrated the signifying of voice recognition because work is now identified with a virtual space rather than the norm in physical workspaces. This article is important for clinical sociologists who have moved the bulk of their work with individuals and communities online. It will help them think about what they might be missing and, thus, how to make the interactions more human.

We are left with the following questions: does virtual interactions provide the possibilities for social justice and the reduction of prejudice? With AI capabilities growing , virtual meaning-making will continue to morph in ways that will influence social interactions in unprecedented ways. For clinical sociologists, this article offers a starting point for other research into how online engagement, like counselling and mediation consultations, are impacted by these shifts and how those might be perpetuating already-existing exclusions and how they can be resolved.

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