AN ABSTRACT OF THE THESIS OF

Jocelyn D. Darshana for the degree of Master of Arts in Applied Ethics presented on June 14, 2021.

Title: Dissonance of the Self: Applying the Philosophy of Patañjali's Yogasūtra to the Effects of Prolonged Engagement in Virtual Synchronous Platforms.

Abstract approved:

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Stuart R. Sarbacker

This thesis analyzes contributing factors to Zoom Fatigue and the issues surrounding "attentional dissonance," or a feeling of tension or rupture between actual and virtual self-perception. The research examines current literature on Zoom Fatigue, and uses the sociological theory of Dramaturgical Analysis, developed by Erving Goffman, to further assess the Zoom experience. The thesis applies the yogic theory found in the Yoga Sūtras of Patañjali to develop a structure for self-management prior, during, and after prolonged virtual synchronous meetings. In addition to a literature review, and argument regarding the need for robust stress and self-management routines for Zoom users, this thesis presents a case study of an eight-week course for over 150 participants as a means of assessing the yogic theory's value for Zoom users. Some of the yogic theory was utilized together with similar modern positive psychological methods. Practices that calm the body and mind can be used before, during, and after Zoom sessions to mitigate any fatiguing effects. For prolonged use, during which some users may opt to turn off their cameras, further philosophical approaches can remind users of the importance of connection via the camera view. As virtual synchronous learning is likely to expand in use in coming years, it is highly relevant to discover ways to manage the exhausting effects for users.

Dissonance of the Self:
Applying the Philosophy of Patañjali's Yogasūtra
to the Effects of Prolonged Engagement in Virtual Synchronous Platforms.

by
Jocelyn D. Darshana

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Arts

Presented June 14, 2021
Commencement June 2022

Master of Arts thesis of Jocelyn D. Darshana presented on June 14, 2021

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

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Jocelyn D. Darshana, Author

ACKNOWLEDGEMENTS

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DEDICATION

For those who have persevered and met the challenges of virtual learning with curiosity and courage.

For those who have struggled and lamented the sudden change and still continued on.

Part 1: Introduction

"When we step through the screen into virtual communities, we reconstruct our identities on the other side of the looking glass." - Sherry Turkle, Life on the Screen (p. 177)

We can be anyone we want to be in a virtual world. The internet and social media platforms have broadened the scope of what it means to *be*, to recognize oneself, and how that self might appear to others. The seemingly endless possibilities can lead us to imagine a self that extends far beyond our existence in the non-virtual, or *actual* world. And why not? As human beings, we have long sought to expand our capabilities and will frequently alter our outer appearances to present a more *authentic self to* others. Virtual worlds create yet another space where such dreams can become reality.

During the beginning months of the COVID-19 pandemic, as businesses shut their doors and people stayed home in an effort to contain the virus, schools faced the difficult hurdle of continuing to operate utilizing remote learning technologies. The cloud platform Zoom became ubiquitous among educational communities, and the term "Zooming" became synonymous with any virtual class or group experience. For many users, including students, excessive daily Zoom usage led to a phenomenon known as "Zoom Fatigue," a descriptive term for the symptoms experienced after prolonged use of the technology which include eye strain, body aches, and mental exhaustion (Nadler, 2020, p. 2). The sudden shift, combined with a lack of prior experience or training to prepare them for such prolonged use, caused many people to limit their use of the platform and visually "drop out" from many virtual interactions. Students may opt to not to use their camera view, and many are unwilling or too uncomfortable to speak, relying

instead on the chat feature, which creates further alienation and distancing in a virtual community.

Discussing Zoom and the fatigue it can cause evokes the main research question of this thesis: does the self adapt in accordance with virtual environmental needs or do we maintain some sense of connection to the so-called "real" or *actual* environment? Zoom, and similar cloud-based conferencing platforms, present one of many arenas of virtual life in which these distinctions become both more apparent and more intertwined. Social media, online gaming, and streaming services such as YouTube all combine the virtual with the visual, and our smartphones have made accessing these platforms easier than ever. But by turning our attention toward a screen, we leave behind the acute awareness of our bodies and our actual selves, sometimes even forgetting our biological needs.

My experience conducting a large-scale Zoom-led course and research into the effects of prolonged Zoom use has led me to some key insights about issues surrounding the nature and construction of the self in both *virtual* and *actual* settings. Attentiveness, to ourselves and to the screen, is dependent on our prior experience, skills, and training. This means attention is something to be practiced through repetition. An example might be returning focus to one's studies or the lecturer of a class. Attention is more than simply focusing on what is visually in front of us. It may also, for example, be the maintaining of awareness of one's physical body, while simultaneously devoting focus to another task. This isn't simply multi-tasking; it is the broadening or dilation of attention and in our perceptual field. Attention to oneself, in an actual "real world" setting, is second nature. When engaging in a *virtual* medium, however, we are separated from our *actual* environments and, in a sense, must devote more energy to maintaining

a virtual representation of ourselves. The *actual* self is then superseded by the *virtual* self. The presentation of the self becomes polarized in Zoom and other virtual platforms, reflecting either an idealized version of what we wish to present to others, or it becomes non-existent, as when a user shuns the use of the camera view altogether. This dissonance some users experience can be due to any number of issues, including consent, exposure, self-esteem, and peer pressure. The esteem of peers is especially important for teens and young adults, and creates a hierarchy influenced by social norms and exemplified by internet celebrities and social media influencers. Self-comparison with such figures can lead to a devaluing of the self, beginning with the virtual self and given the enormity of the expectations, transferred back to one's actual self-worth.

From a metaphysical perspective, the nature of the self has been studied and debated in religious and philosophical contexts for thousands of years. Arguably, no one theory rises definitively above the others to answer the question "Who am I?" A metaphysical understanding of the self stresses the difference between the knowledge of the "I" and the "Not I" (du Toit, 2019, p. 2). In the same way, a Zoom user might regard their self-image on their computer screen as a poor representation of their actual self: the "Not I." But treating the virtually represented self as separate from the whole self doesn't resolve the dissonance caused by the virtual environment. For the purposes of this document, I will focus on a heuristic notion of selfhood that frames the self as existing as a modular creation of consciousness, composed of three principal features: an individual's biology, experiences, and responses to stimulus. This last criterion is particularly important with respect to the topic being explored here, in particular, that the impression of oneself may be seen by others and then reflected back and reinterpreted to present a transformed version or perception of self (Goffman, 2018a). The self, as such, does not stand alone in

conception or construction. Building on this larger metaphysical interpretation, I will also examine two theories: one from a sociological lens and the other from an Indian yogic tradition, which I will argue can assist users of virtual environments with managing the stressors that accompany the prolonged use of virtual platforms.

The pedagogical importance of recognizing the need for self-acknowledgement in virtual settings cannot be stressed enough. Academic work that examines Zoom is highly relevant to universities and other educational settings. Students attempting to earn a degree during the COVID-19 pandemic understand how much an instructor's command of the platform can affect the quality of their education. Current quarantine protocols have forced schools to go online for teaching, and this operational mode has lasted for a full school year and will continue on for some students as the pandemic carries on, perhaps indefinitely in certain contexts. Many students began online schooling via Zoom in the spring of 2020, but with mass vaccination on the horizon, it's no surprise that schools are looking forward to returning to in-person classes in the Fall of 2021. While an absolutely positive outlook to take, and beneficial for morale to be sure, this hopeful perspective overlooks some important questions regarding the future of remote teaching platforms. Even if COVID-19 is managed and schools are able to function as before, many students will still rely on online campus formats and online instruction for learning. Online campus tools are ubiquitous and have been for some time, with Zoom being one of the foremost among them. Considering the now widespread commonality of remote work and school, it is safe to make the claim that Zoom classes and meetings are not going to disappear once in-person classes resume. And it should be this way, given the current climate crisis and looming threats of future pandemics and other global issues. Having a more thorough comprehension of Zoom and

its technicalities, including understanding why it presents such a difficult operational learning

curve for some people, will help educators, students, and workers be more prepared in the future.

Our current assumptions about virtual self-management are based on our beliefs about

actual self-management and, as such, may not be entirely accurate. It is not that managing

oneself in a virtual setting is that much different from self-management in one's home, but it is to

say that due to the difference in its parameters, the encountering of the virtual environment itself

may affect the user's abilities to self-manage. Because we live in a technology-driven world, we

sometimes make assumptions about our own or others' abilities regarding the use of new

technologies. For instance, we might assume that because we've used Zoom once or twice it will

be no different to use it every day, perhaps for several hours at a time. We might make

assumptions about our behavior within virtual settings that we think "mirror" our behavior in

actual settings and encounters. Yet, our image is flattened on screen and our appearance is

altered, which can create a disconnect between our intended presentation of behaviors, such as

are indicated by our physical social cues and, thus, what is perceived by other users (Bailenson,

2021, p. 2). Similarly, we might interpret the behavior of others in different ways from what they

intended, and in a virtual group setting those behaviors may not "read" the same as they would in

person. This can stagnate the emergence of new learning styles and the acquisition of new

knowledge about virtual platform use.

Prominent sociologist Erving Goffman would say the self is ever evolving, changing due

to variation in what an individual wants to present to the world (2018a). The recognition of the

behaviors of other people as performative (what Goffman calls "Dramaturgical") might at first

put off any viewer from making a deep connection with others, but Goffman's theory provides a

strong working explanation for the viewer of any behavior. All behavior is performative, regardless of the environment in which it happens, and it is the awareness or consciousness of this performative nature that attenuates a sense of connection. It provides an opportunity to recognize the parallels among all performers, *virtual* and *actual*. Users of virtual platforms experience varying forms of stress and, therefore, share the "connective fibers" of the human experience outside the virtual environment. These "connective fibers" I refer to are simply the recognizable experiences and interactions we have in-person that translate to virtual environments. As we enter virtual spaces, we are reminded of the potent reality of the perception of "sameness" among users. The shift from actual to virtual environments acts as a sort of gateway for the self, but it does not mean we must disassociate entirely from our actual, embodied human needs. This points to the need to address self-management styles for stressors related to daily, and sometimes excessive, virtual Zoom use. In fact, stronger self-management techniques are needed for users of virtual platforms, and they must be periodically reminded of the personhood of the other participants to maintain a sense of connection.

Interactions within synchronous virtual platforms exist in real-time just the same as in-person interactions and are therefore worth maintaining an effort to stay attentive to others and oneself (Søraker & Brey, 2015, p. 509). The dual needs of attentiveness between our *actual* self and our *virtual* self splits our focus and creates what might be referred to as *attentional dissonance*. Perhaps this split is due in part to some users not having cultivated the significant skills necessary to expand their self-awareness in this capacity due to their habituation of behaviors that solely exist within actual settings and interactions. These behaviors do not necessarily translate directly to virtual settings and may, in fact, lead to miscommunications and

misunderstandings. The perception of the self becomes fractured within virtual environments, where attentional dissonance causes tension, if not a rupture, between actual and virtual self-perception and awareness. This creates a dissonant or false sense of self for the user, who becomes dualistically located as both the viewer and the observed. However, as I will discuss in detail in the coming pages, certain yogic practices, which have been translated into modern notions of "self-care" or "mind-body practices," can provide the user with ways to mitigate and even counteract this fracturing of self by anchoring and reintegrating attention to one's actual physical, emotional, and mental being. Ultimately, I will argue that mind-body practices can help remote and virtual users manage stressors and other issues arising from prolonged use of virtual conferencing platforms, bringing attentional dissonance under control and mitigating the deleterious side effects of using such technologies.

Part 2: Literature Review: The Virtual and Actual Intertwined

To begin centering my research around what is meant by virtual environment, I want to begin by purposefully examining the history of virtual environments (VE), especially the evolving scholarship that has addressed this arena for some time. Because computing in the internet era has become so intertwined with "being online," it is necessary to explore what is meant by the term "virtual" and how it is expressed in notions of "environment." Virtual, as it relates to the topic of this thesis, means something like "a computerized or digitized simulation of something" or "senses relating to the essential, as opposed to physical or actual, existence" (Oxford University Press). Technologies that harness computer-human interaction and present virtual interactive environments began as early as the Sutherland Sketchpad of 1963 (Stanney, 2002, p. 2) which allowed the user to interact with the computer via a pen-like device to draw shapes and write letters on the screen. As virtual interaction has developed over time to encompass various gaming and entertainment platforms, such as Massively Multiplayer Online (MMO) games including World of Warcraft and socially-driven environments like Second Life (Geraci, 2014), actions of users within the virtual gaming environment have typically been viewed as taking place within the boundaries of the so-called "magic circle" (Huizinga, 1955; Tekinbaş & Zimmerman, 2003) or "membrane" (Castranova, 2005), postulated to exist between virtual and actual worlds. This notion of a seemingly impervious–or partly permeable–moral boundary has deep ethical implications which I will discuss further in later sections.

Over time, the term virtual has taken on a metaphysical interpretation akin to something "almost but not quite real" (Søraker & Brey, 2015, p. 499). This bears some resemblance to the

notion of the "uncanny valley," the theory which posits a breakdown exists between the relationship of an object's human-like quality and a human observer's revulsion of the object, an idea initially coined by Dr. Masahiro Mori in 1970 (2012). Though Mori's theory addresses the unease an observer feels when encountering a human-like robot, the theory has been expanded to include other forms of virtual reality, computer graphics, video games, and other forms of reality augmentation (MacDorman & Chattopadhyay, 2017). Another early example of this kind of dissonance arose in the form of MUDS (Multi-User Domains), described as a "marginally virtual reality" (Borgman, 1999) wherein the game play in the virtual world is primarily text-based. The structure of these kinds of virtual gaming platforms resemble some "actual," turn-based role-playing games yet the text-based format side steps any visual presentation. This leaves some ambiguity as to what might be happening within the play of the game thus leaving room for vagueness of virtual self.

The implication that VEs may not hold the same sense of moral obligation, or "importance threshold," to a user's responsibility that actual environments do, presents an ethical issue that Herman Tavani calls the "virtual fallacy" (2011). The virtual fallacy represents a psychological distinction that has, in some ways, created an opening for critics of VE to argue that spending time in VEs will have detrimental effects on users in the actual environments in which the participants live. This distinction of consequences can be thought of as the differences of "intravirtual" and "extravirtual," as Johnny Hartz Søraker postulates (2012). The intravirtual effects are those experienced within the VE just as the extravirtual are those experienced by an actual, biological being. The confusion of the two–the actions one might undertake in an actual environment that might mirror actions done in a VE, such as shooting a gun or stealing a car–has

become a key point of focus for VE detractors. In contrast, some scholars believe VEs have the potential to help users with self-identification and exploration (Turkle, 1995) and perhaps even go so far as to help augment awareness in relation to others via an invested interest in our relationship with our devices.

The World Wide Web

A more ubiquitous example, and more pertinent to the intention of this thesis, is the internet. We utilize the internet regularly, with many of us operating within its confines to access and share data via various cloud-based platforms. These platforms, hosted by large corporations familiar to most users, such as "The Big Four" of Google, Apple, Amazon, and Facebook, allow people to access a wealth of information nearly instantaneously. We have come to expect this, as internet speeds have increased and our access to communication and each other has expanded through the use of social media. This kind of use is different from the aforementioned virtual environments of online gaming, though platforms such as Facebook are increasingly working to integrate social media with VR and other technologies. We assume a certain level of transparency with data sharing in social media or through email. We invite interaction based upon a certain level of knowledge that the person we are communicating with is an actual person having an experience similar to ours, such as typing on a computer or texting on a smartphone. The "magic circle" applies less in this instance, and the knowledge of our interactions and any consequences thereof, holds much more importance than what is assumed for users of virtual gaming platforms. The same could be said for social media wherein some users might feel at liberty to express themselves in ways they do not feel they can or should in their actual lives.

Consider the virtual "space" of the internet. It is more vast a concept of "environment" than an initial understanding of VE would indicate. The internet creates a spacial "otherness" to it wherein a user "goes" onto the internet, or "surfs the net". Yet, similar to a general understanding of just how vast the actual universe is (and that it has an expanding nature), the internet itself has no shape or confining characteristics (Søraker, 2012). In such a broad space, our notion of self is challenged, and similarly to an astronaut floating about in outer space, a user on the internet might feel adrift among the endless search possibilities. In *Technology and the Lifeworld* (1990), Don Ihde presents four theories of mediation between humans and technology that highlight the duality of use between virtual and actual environments. The technology in question (in our case, computers) acts as a bystander to the behaviors of use itself, presenting a notion of the computer as *embodied.* This might be thought more plainly as the computer gives the user the appearance of "watching" them. Or the interaction might rest solely and attentively on the technology, what Ihde calls *alterity.* The relationship can take on a *hermeneutic* form in which the technology allows the user to read and access certain information, such as the accessing of an internet browser. Lastly, the relationship with the technology might treat it as some sort of *background* affecting device, adding to our actual environment. This framework is familiar to any user of virtual environments and is not solely connected with MMO play or social media. What's important to note here is the difference between the user in their actual setting, the user's virtual personification of themselves on the internet, and the use of the technology providing the access to the internet portal. This combination of actual user, virtual representation of user, and the coexisting presence of both virtual and actual environment can also be a contributing factor to a person's attentional dissonance. The computer and the internet combine

to create a virtual world that users "go" to, apart from their actual environment. But virtual

interactions we have on the internet are just as important as actual interactions (Carstensen, 2015,

p. 285) and emergent technologies, such as Zoom, create an overlay of the VE onto the user's

actual environment.

Zoom - Virtual Environment meets Synchronous Interaction

Enter Zoom, which has become synonymous with any cloud-based conferencing platform

or tool used to visually and verbally communicate in real-time with others through a computer,

tablet, or smartphone. Other platforms exist (Skype, Facebook Messenger, RingCentral,

FaceTime, Google Hangouts, etc.), but Zoom has risen as the most robust and ubiquitous in the

COVID-19 era. It is now utilized as a replacement for appointments and meetings in the medical

sector (Juarez-Reyes et al., 2021; Hameed et al., 2021; Monette et al., 2020) and as a means to

deliver synchronous classes at educational institutions (Imeri et al., 2021; Ramadani & Xhaferi,

2020; Dingwall, 2020). Some institutions opted to devise new learning systems within Zoom that

mirrored some of the actual interactions of meetings and classes, while at the same time using

the technology to greater effect (Peisachovich et al., 2020). The outcome of virtually led

sessions, such as the one conducted by SimXSpace, suggests that Zoom can be a great tool to

foster engagement, learning, and connection among users. In another study done at the Institute

of Post Graduate Medical Education and Research in Kolkata, India (Roy et al., 2020) the course

that was the object of investigation utilized Zoom to deliver materials for an anatomy class.

Though the students reported finding the virtual classes useful, a majority reported a desire to

return to in-person classes as soon as possible and reported preferring fewer Zoom sessions

overall. Network connectivity was cited as a major issue, and lack of preparedness was also mentioned as a hindrance to student satisfaction and success.

This important issue of preparedness has been addressed in other studies (Schimming, 2008) with regard to asynchronously paced medical training. When given very little time to study or learn a new platform, in this case for PubMed, some students reported significantly more difficulty than others. The same problem emerges with respect to Zoom use in cases where preparation time is limited. The pivot to cloud-based video conferencing came upon workplaces and schools rather quickly. The lack of preparedness of most users, many of whom had never heard of Zoom or used it with any regularly, would suggest users experienced heightened stress when thrust into a new, albeit virtual, environment. This sudden shift in the way we connect and communicate has given rise, in part, to a new term called "Zoom fatigue," and due to a lack of preparedness as to the effects of prolonged Zoom use, a limited amount of peer-reviewed literature exists on the topic. The lack of information on Zoom-use specific research highlights an assumption made about how we use cloud-based video conferencing. Because Zoom is accessed through familiar technologies (our computers and smartphones) we might prematurely group any effects of overuse in Zoom with the effects experienced by overuse of other virtual platforms, such as gaming or even prolonged television viewing, which differ in significant ways.

Cloud-based video conferencing platforms exist in a dualistic region of interaction that allows users to connect and see one another. Despite the understood and perceived web-based connection, they also present hurdles to truly feeling linked to one's peers. The default visual format and several other issues create a personal dissonance for many users. Much of the work

that addresses the fatiguing effects of prolonged Zoom use to date is anecdotal ("Take steps to avoid Zoom fatigue," 2020; Hall, 2020; Florell, 2020) and merely suggests that educators and team leaders examine how they use Zoom for delivery of content. Some go so far as to suggest self-management strategies, such as adjusting one's seat or not staring at the screen for the full length of the session. But these quick fixes are more easily proposed than actively incorporated into a user's daily Zoom routine.

The human experience of camaraderie may be unfulfilling or missing from a virtual video session (Cranford, 2020) though this may be dependent on the reason why a person uses it. A major issue standing in the way of Zoom user experience for students at universities is the simple admission that few of them prefer online learning and interacting to meeting in-person (Peper et al, 2021, p. 47). Suggestions as to why are now being provided, and researchers are helping the average Zoom user understand better why the platform can be so difficult for so many. For some, the perceived synchronicity of Zoom is interrupted when connectivity issues arise. The glitches that occur break concentration and pull the user out of the synchronous experience (Wiederhold, 2020, p. 437). Surprisingly, returning to virtual reality (VR) headsets instead of Zoom use has arisen in some contexts as an intervention to combat the fatiguing effects of prolonged use (Wiederhold, 2020, p. 437). In some instances, a platform called Spatial (Spatial.io) is utilized to support real-time VR meetings in which people create avatars and interact as if in-person. The issue with this seems similar to the problems already experienced by Zoom users. Asking a user to don a VR headset for multiple hours per day is likely to be just as, if not more, fatiguing in similar ways to synchronous virtual interaction. It may inhibit their movement, and when considering users who wear glasses or have visual impairment, wearing a headset would create

further issues for them. Additionally, adding even newer technology at such swift a pace and as a wearable headset means we must consider who will use it. Late adopters of new tech and high pricing points means headsets, such as those used with Spatial, will only be accessible to those who can quickly adapt and those who can afford it.

Perspectives on "Zoom fatigue"

Returning to the literature that specifically addresses the Zoom fatigue phenomenon, I will examine three articles in greater detail. They are a part of a small but growing body of research that will no doubt be continued in the coming years, even as COVID-19 vaccinations are administered and educational institutions and businesses are allowed to resume in-person operations. The shift to Zoom use in educational settings was sudden; most users never anticipated teaching a course or learning via their computer screens, and now nearly every student at every university around the world has experienced remote education. Needless to say, it is imperative that we understand the issues of synchronous video conferencing so that we may provide better strategies for future users. Preparedness may be one principal avenue for user success. Not necessarily in the simple knowledge of how to use the technology in question, but rather being prepared to use it in ways that emulate substantive in-person interactions. This might involve mimicking the length of a conversation, a class, or a meeting so that anything that is done in-person can be assumed to be done virtually if the need arises.

In the article, "Avoid Zoom Fatigue, Be Present and Learn" (Peper et al., 2021), teams from San Francisco State University and York University explored differences of communication that can specifically affect students in synchronous online educational

environments. A survey of 325 undergraduates was conducted to assess the difficulties of online learning compared to in-person. Ninety-four percent of the students reported "moderate to considerable difficulty" with online learning (2021, p. 48). The primary difficulty, according to this study, exists with distractibility. In particular, it noted how much easier it is to become distracted by a technology that provides ample opportunities for checking email, social media, and online shopping. Memory retention is also impacted. Many students report not being able to recall lectures as easily (2021, p. 51). The authors of the study deliver some key insights into why online learning is so much more difficult. Issues such as the perception of nonverbal cues, ways in which our facial movements might be perceived out of context, and the auditory difficulties of virtual timing due to connectivity and bandwidth issues create communication difficulties. The authors also distinguish between the differences in an interactive virtual environment in which users are both "the seer" and "the seen" simultaneously, and an environment that is purely viewed, such as a television screen. The majority of our time is spent viewing screens one-directionally, meaning we view, but are not viewed. Zoom has changed our relationship with our screens, suddenly and without proper preparation for such a shift. Teachers have also reported issues with instruction, including the multitude of ways they must be attentive to the technology itself in order to run a successful virtual class, from chat windows, lectures slides, and screen sharing to monitoring breakout rooms and watching students' reactions. These issues coalesce to leave the teacher feeling as if there is nothing that can be done to keep students consistently engaged and focused, what the authors call a shift from education to "edutainment" (2021, p. 51).

The authors provide several self-management strategies for Zoom users, though some may be a bit unrealistic. The title itself summarizes a major claim: be present. The suggestion is that teachers have a responsibility to students to rearrange classes to encourage student involvement, and students have a responsibility to be present and engaged. Both suggestions require both teachers and students receive ample training in the technology itself, including learning how to set up the camera, lighting and audio so that the virtual self is visible to help create a better sense of engagement (2021, p. 51). The authors also suggest users modulate their behavior, such as nodding to indicate understanding, looking into the camera instead of at the screen so they appear to be looking at other users, and smiling to indicate a non-verbal response. The most robust suggestions resemble the cultivation of alternative mindsets. The suggestion to "configure" the brain and body to be more attentive through acting as if the user were in an in-person lecture, wherein a teacher could see the students, would require the students to respond as if they were more engaged. This suggests a practice of returning to focus–sitting upright, turning off distractions, and getting back on task–echo techniques found in meditation, and are also techniques one could use while in a meeting or a large class at school.

A similar study from Robby Nadler at the University of California examines the effects of Zoom fatigue through the lens of spatial dynamics in "Understanding Zoom Fatigue: Theorizing Spatial Dynamics as Third Skins in Computer-Mediated Communication" (2020). Nadler introduces the idea of "third skins"–the combined image of person, background, and technology that leads to a flattened appearance in virtual videoconferencing. The author claims this "third skin" promotes user disengagement in computer-mediated communication (CMC) that does not occur in face-to-face (FtF) interactions (2020, p. 2). As an alternative phrase to Zoom

Fatigue, Nadler uses the term "CMC exhaustion" to better explain the effects of prolonged use of platforms which perform similar functions to Zoom, such as Facetime, RingCentral, and Skype. According to Nadler, the technology causes people to behave in ways that might differ from FtF interactions. The new technology pulls the user's attention in different ways, which creates a cognitive overload of perception. Nadler goes further to suggest that technology is an "active wielder of force," meaning it can have an influence on user behavior. Basing his arguments on tenants of Bruno Latour's Actor Network Theory (ANT), Nadler suggests the media we use can influence the boundaries of relationships based upon the mode of communication and the means or technology used. In Latour's theory, a network consists not simply of interactions between humans, but also of humans with technology, institutions, organizations, and objects (Latour, 2005).

"While space is commonly perceived via negative relation in that it is defined by a lack of what is there, space operates in multiple forms to enable selves and behaviors to exist/function" (Nadler, 2020, p. 7). Space feels different, depending on how we exist or interact within or with it. Nadler gives examples such as sitting across from someone versus sitting next to them; our interactions occur differently based upon how we interpret our behaviors within a certain space. In Zoom, Nadler's claims have more meaning, as the space itself is subject to connectivity glitches and notices of WIFI instability that leave the user feeling confused as to how to proceed, except for exiting their visual stream altogether. Drawing together ANT with third skins, Nadler's main thesis holds that a CMC interaction is flattened due to the shift of perceived space from actual to virtual (2020, p. 14). A visual interpretation is presented on the next page in Figure 1.

Figure 1

The Process of Third Skins
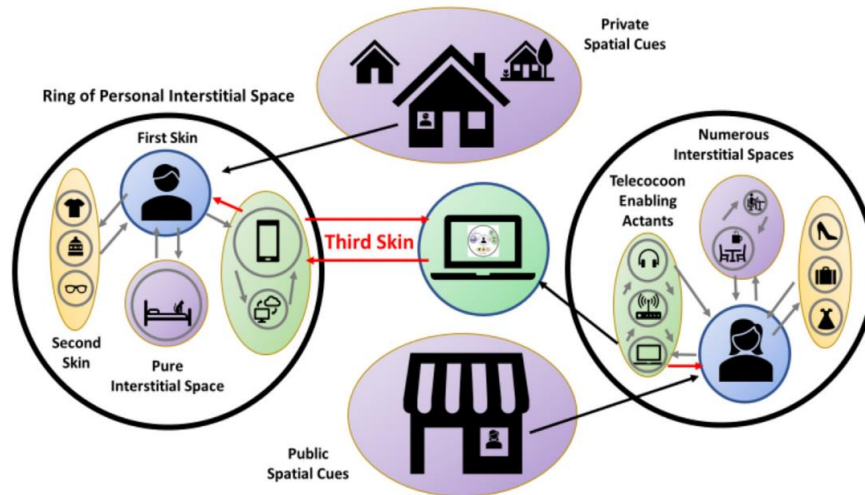
Fig. 6. This figure portrays the process of third skins by demonstrating the myriad spatial considerations and skins at play that become flattened by technological representation. This is why the complexities of any individual's experience cannot be carried through to the observer. Black arrows represent enlarged views of a relationship, gray arrows represent interactions that can be influenced, and red arrows represent interactions that cannot be influenced.

(Nadler, 2020, p. 14)

The self then becomes another element of Zoom that is intertwined with the technology of Zoom. The management of the self is then entangled in our minds with noticing all the other elements that require our attention. This gives us the feeling of disregard, as users (everyone participating in a virtual session) are forced to engage in multiple small tasks to monitor the session and the presented self. Nadler concludes by stating that "we must then realize that voice and appearance have very different effects on the human mind in a SOC than they do in FtF contexts—for while there is a human embedded in the third skin, the third skin is *of* human, not is human" (2020, p. 15).

Jeremy N. Bailenson from Stanford University examines similar issues to Peper et al. and Nadler in "Nonverbal Overload: A theoretical argument for the causes of Zoom fatigue" (2021). Bailenson's article highlights four issues arising out of excessive Zoom use that contribute to a sense of fatigue. His assessment suggests that the perception of "eye gaze" in a distance closer than users would typically sit if in-person feels forced due to the proximity of users to the camera lens in their computer or device (2021, p. 2). In addition, the cognitive load of attending to the presentation of self, combined with both the viewing and showing of non-verbal physical cues that are primarily facial, is compounded by having to be attentive to the multiple functions of Zoom and the technology one accesses it through (2021, p. 3). These assertions are similar to Nadler's, as both recognize the multitude of ways in which our attention is divided during a Zoom session. Bailenson adds to this the issue of restricted eye movements–in-person this would be varied and shifting around one's physical space–which result in prolonged eye contact, which can make both the viewer and the observed (which in actuality is both users simultaneously) feel as though the interaction is less realistic (2021, pp. 3-4). The self-view, yet discussed in previous work, is also a major contributing factor to Zoom fatigue. It acts as a mirror and may contribute to stress and self-esteem issues for users. We don't walk around all day with a mirror in front of us, nor are we used to viewing ourselves for prolonged periods of time (Bailenson, 2021, p. 4). It's not that this hasn't been a phenomenon of other video conferencing platforms, as nearly all of them use the self-view as a way to ensure we can be seen by others.

Bailenson's fourth, and perhaps most important assessment, highlights a key issue for users in virtual educational and work environments. Meetings and classes that last for prolonged periods of time, often in excess of one hour, place stress on the user due to reduced mobility.

When combined with the virtual lens issues of eye contact and wavering attention, user physicality is restrained due to the camera's field of view (Bailenson, 2021, p. 4). This might be akin to having to stay in one's seat for a class lecture, yet the entirety of a person's body is visible when in-person; in Zoom, it's not. Bailenson says this constricts the movements of the users, and since our bodies are used to moving and need to move, adhering to well-timed breaks is a necessity for Zoom users.

Aside from Peper's work, and the myriad resources published as thought pieces in various journals, not much has been said or prescribed about how to manage oneself–virtually and actually–before, during, or after a session in Zoom. And it may appear as though not much more might need to be written as the world prepares to welcome people back to FtF interactions (most likely masked in some capacities, however). I do not think this means we have seen the last of virtual synchronous classes and workspaces, and the onus is on us to be prepared for the future and to make the technology work for us and with us. To draw again on ANT, we might think of this as a new way of considering how the self is networked among various groups and technologies. When prepared for such an occurrence, we might more easily see ourselves as a user of Zoom or a user of a smartphone, or whatever next technology arises to connect us. This "activates" our identity in multiple places and through multiple means instead of alienating us, and the aggregate awareness of selves (Banks, 2017, p. 430), or what we might understand as our awareness of self that stems from multiple sources, means we can navigate a shifting virtual world with as much ease as we might navigate the actual world.

Part 3: Goffman's Dramaturgical Theory: Zoom as a Performance Space

Based on work by Bailenson (2021), this section will engage with four themes in the performative dimension of Zoom communication through application of the dramaturgical perspective of Erving Goffman. Goffman asserted that social interactions have a discernable structure to them and become defined by the nature and types of interactions with others (Goffman, 2018a). These interactions come with a set of social assumptions and influence how people interact in significant ways. Goffman interpreted these interactions through a theatrical lens, applying the idea of "performance" as a way to elucidate the roleplaying element that informs them. As users of Zoom are confined to "performance spaces" (i.e., the small box one's own image is displayed in for other users to view), this theory adheres well to users' experience in remote virtual environments. I will present these four themes here in order to examine and interpret the "Zooming" experience and apply Goffman's microsociological approach in order to provide a deepened understanding of what is happening on the level of self-construction in Zoom. Theme one will address how the self-view acts as a "mirror" and a constant reminder of self-image. Among other things, it can be distracting and cause negative self-evaluation. Theme two will address remote engagement with others with respect to the way that the gaze can push people's interpersonal comfort boundaries and create anxiety. Theme three will address the added difficulties of behavior, self-monitoring, and other-perceiving. Synchronous, virtual interactions in Zoom are altered from actual interactions, and this difference causes difficulties for some users with their cueing and conversation. Theme four will examine how the visual frame offered by Zoom prevents important behavioral cues from being seen by others. These

behaviors are generally acknowledged in face-to-face interactions but are inhibited from being displayed within Zoom. The small visual display users must contend with makes the element of mobility characteristic of actual interactions difficult to approximate. In sum, these points highlight how Zoom classrooms act as virtual performance spaces in which users display behaviors, cues, mannerisms, and social norms in new and different ways that do not directly parallel in-person interactions.

Theme 1: Viewership as a Mirror of the Self

Guidance and modeling from teachers can provide assurance for students in navigating online interactions. In-person classes rely on a certain level of understood attentiveness, with all students facing the front of the classroom while the teacher lectures or leads the class. In Zoom, this behavior has shifted rather drastically, and the self-view, or the view of seeing oneself for the duration of a Zoom call, creates a strong dissonance for many users due to the gravitational pull of one's "reflection." For learning environments that previously met in-person, this presents a significant change to the social interaction of the class. A dramaturgical analysis of the behaviors associated with seeing the self as being connected to the concepts of the *front stage* and the *backstage*, in that it is possible for the user to escape the self-view altogether. Though obvious to state, it bears repeating that when groups meet in-person, members interact, see one another, and thus "sense" the presence of their peers. In Zoom, we can call this the f*ront stage* of the classroom. The front stage is where the performance happens for others and for the self, and also where a user is able to watch their own performance. Many Zoom users will note the regularity with which their eye goes to the small window containing their own likeness. This

gives the user an opportunity to check how they might look, assess if their view shows their whole face, if the lighting is good, or if something else regarding their image needs to be altered. But attending to one's personal front while being witnessed by others is something typically reserved for private space, such as a restroom (Cahill, 2018, p. 270), so the user must either attend to these needs either prior to entering the Zoom room or they might feel inclined to turn their camera view off.

Camera use itself must be reframed in order to bypass the symbols of attention that have been inherited from in-person learning styles. Many participants may not be able to utilize their camera function due to technical issues from the device itself or internet connectivity. More specific to the individual user, embarrassment at home surroundings or anxiety over being on-screen in such a micro-view way may prevent users from feeling comfortable turning their camera view on. Even though these same participants navigated in-person classrooms without difficulty, the action of sharing the camera view heightens issues of self-esteem and may push the participant into a more passive engagement with the larger classroom and with the leader. This can be referred to as going *backstage*. The Zoom user will feel more comfortable not seeing their own image constantly beaming back at them while trying to learn. It is potentially both distracting and disconcerting.

Overriding these issues of self-esteem becomes a significant problem–perhaps one of the largest–for online classrooms. As many education-oriented behaviors are learned through social interaction in classrooms, camera use will be more widespread if leaders encourage it and if it becomes the symbol of participation in the group. However, the issue of the self-view being turned off, or *backstage*, may create even more agitation for others in the class as they will not

know if someone is actually behind the black-box or not, evoking a sense of being watched without being able to see the other person (Nadler, 2020, p. 3). Going *backstage* means not providing the other users in Zoom with a reciprocal view, and so it is not similar to the in-person visual experience in this way.

"Hide Self View" is an option within Zoom that allows the camera view setting to remain on while removing oneself from the self-view mode. When in gallery mode (the view that adjusts all participants' windows to the same size, thus giving equal space and viewing to each by the observer), the user's own window will not be seen. This option presents a small but significant workaround for those who are distracted by the *front stage* performance of seeing the self. It also takes away some of the stress of watching oneself as an individual among several large camera views (Kiesler et al., 2012, p. 25). Some researchers actually suggest peering into the camera to create a sense of eye-contact and to appear more authoritative (Wiederhold, 2020, p. 2). Using the self-view as a front stage creates an immersive experience for the viewer, similar to watching a film on a large screen (Veidlinger, 2018, p. 185), which may present further challenges for others who, for whatever reason, are unable to do the same.

Theme 2: Comfort with the Gaze

Bailenson provides some insight into the issues surrounding the gaze in Zoom by pointing out the effect of self-view as being something akin to enforced closeness with others (2021, p. 2). This is due to several factors in Zoom: the close proximity of a person's face to the camera lens and the odd visual of prolonged, yet false, eye-contact. While it can be useful for teachers to look into the camera lens while speaking to the entire group, if the entire class were

to do so, the effect would feel quite strange for every user. It would appear as if all eyes were "upon" the individual, for each individual in the session. Goffman's concept of *face work* provides key insights into why the gaze in Zoom is so difficult to maintain and so uncomfortable to witness. This concept relies on some similar behaviors associated with the self-view. A person's face may be thought of as the generally positive assessment they might make of themself after having been in the company of others (Goffman, 2018b, p. 254). In Zoom, the face looms large. The face is all users see of other participants, and the view gives the user the illusion of being up close. Bailenson notes the close proximity of users to their screen deceives the user's view by making the appearance of others' faces much larger when in speaker view mode (2021, p. 2). This marks a strong difference from in-person interactions in which individuals generally possess some sort of "personal bubble" of space around them and between them and others.

The notion of personal space, however, is different across various cultures and this may affect how the perception of the others' faces is seen. A study from the University of Warwick in 2017 found that personal characteristics such as gender, age, and relationship of a person to another person, as well as the temperature of certain regions, contributed to differences in the size of an individual's "personal bubble" (Sorokowska et al., 2017). It may be that the proximity of a person's face to their computer makes some people more uncomfortable than others, and this has something to do with their culture. The Warwick study found that the general personal bubble in the United States is roughly 95 centimeters. Bailenson remarks testing his own personal bubble was 50 centimeters and cites another study that classified "anything below 60 centimeters was perceived as 'intimate'" (Bailenson, 2020, p. 2). Bailenson also measured the

dimensions of a person's head while on screen, which was roughly 13 centimeters top to chin, which highlights just how much bigger a person can appear on screen, thus forcing an "intimacy" that some Zoom users do not feel comfortable with.

Prolonged eye contact or gaze in Zoom means the *face work* of a user must be modified, and in some cases prolonged, to maintain normal seeming movements on screen. As a person's attention is likely to wane (Cranford, 2020, p. 587) over time, their face work might denote a lack of focus or boredom, and then it is up to the individual to *save face* by practicing *poise* (Goffman, 2018b, p. 255). The classroom setting necessitates this style of behavior, but because the appearance in the remote context of a classroom full of others staring back, the individual may feel even more compelled to sustain such face work. The *face work* of students on camera gives the impression of attention and understanding, denoting they can be trusted to do the work students are asked to do (Kiesler et al., 2012, p. 14). They may nod more to indicate understanding of the material. They may show they are taking notes by indicating certain eye and head movements. All of these movements might also serve to cover for the fact that the student is also looking at their smartphone or texting a friend. While these behaviors are not unique to Zoom, a user might think they can get away with them more due to the limited frame of the camera view.

Most obviously, *face work* can be applied yet again to the view of the self while in Zoom. If a student keeps their camera on, they may want to maintain the self-view option in order to ensure their *face work* seems appropriate for the expectations of others. *Face work* can be made more difficult in part to the effect of seeing all the participants at once. This can appear as if the entire group is looking directly at the individual while they are alone in their own home or

workspace. A similar experience in actual settings might be akin to performing onstage or delivering a speech in front of a conference wherein some individuals experience stage fright or even simply being aware of being watched, so we might understand the effect of the Zoom room appearing to look back at the singular user in their home. This creates the dissonant effect that makes an individual want to avoid being seen by others in Zoom. This may encourage them to turn their camera view off. Not necessarily the risk of being seen by others, but the view of seeing others, as a collective group, staring back at them. This, of course, conveys to other users a lack of involvement or interest, which is the unfortunate side-effect of the gaze discordance in Zoom classrooms.

Theme 3: The Complexities of Behavioral Cues

When entering a classroom, students have an understanding of proper behavior due to repeated discussions with peers, reminders from previous teachers, and through the observation of behavior. When students exhibit signs of attention, such as watching the lecture, note-taking, and question asking, the teacher of the class acknowledges this and in turn, interacts and brings their attention to that student. Normally, students do not consciously attend to these behaviors, nor do teachers. That is because they are habituated patterns of behavior that people do not have to think about. Yet, in Zoom, behavioral cues become harder to give and receive (Bailenson, 2021, p. 3). It takes far more cognitive load to adjust to more intentional ways of cueing or, as Goffman might say, *giving their performance*. This leads to a strong amount of dedication to one's *impression management*; how an individual wants to be seen by others and the ways in which they will conceal and reveal parts of themselves in order to make a certain impression.

While online classrooms may include similar behaviors to in-person environments, the behaviors themselves may look different or distorted when viewed on-screen. Facial cues are more pronounced, as the view of the individual is generally focused on their head, neck, and shoulders. This prevents viewers from seeing other physical cues of attention, the same sort of watching, note-taking, and question-asking exhibited while in person. The symbols of attention in the classroom are now shifted to small micro-actions, which, ironically, appear macro when viewed on-screen. This is due to the format of the Zoom virtual classroom, which will either present in speaker view (the largest window shows the individual who is currently speaking) or gallery view (all participants have equal window sizes). As each individual is inclined to want to present their face in the best possible light, the hyper focus of the Zoom screen heightens the need for impression management by zeroing in on the minute details of the user's facial features and the features of others–yet another example of the transformation of face work in the virtual space.

Students form impressions of others (Goffman, 2018a, pp. 197-198) based on very limited information. This can lead to excessive screen monitoring, mostly by default. If the class were in-person, students would be able to look around the room at other students with more physical distance and from different angles. Since the angle of the Zoom user is forward facing, impression management is all the more important for individuals to maintain awareness. Seeing these movements leads to increased effort to pick up on the behavioral cues because they are diminished by the Zoom screen (Nadler, 2020, p. 5). Ultimately, the effort to both give and receive cues increases.

If the students do share their camera view, the most the teacher is able to glean from them is the appearance of attentiveness, such as note-taking. Aside from the student looking at the

camera, the teacher cannot be sure if the student is actively engaged or not, unless the student communicates via the chat feature or chooses to interact in a breakout room. So, the student must use *impression management* and "perform" attentiveness by intentionally nodding, smiling, and unmuting their microphone to speak. These actions are not necessary during in-person classes, and only adds to the task of self-monitoring–ensuring one's *impression* matches their intention. It is worth noting that some parts of self-monitoring are not as important in Zoom, such as leg movements and personal workspace. As no one is likely to see those parts of a user's living space, less attention can be paid to them. We could call these parts *backstage*, or even *offstage*, as no other Zoom user will see them.

If a student opts to not use their camera view for part of class, this may trigger certain assumptions in others about how interested or participatory that student might be as it may appear as if they do not care about the class. Others might assume they have simply turned on their Zoom session and left their computer altogether. They might even use *impression management* to either maintain their *stigmatized* Zoom persona or change it. The student might use the chat feature or unmute to speak to the group and give the reason why they choose not to use the visual settings ("Stanford researchers identify four causes of "Zoom fatigue" and their simple fixes," 2021, p. 2). It may be caused by a technical issue; for instance, they may not have a working camera or may be experiencing connectivity issues. They may also choose to do the opposite and not speak at all, maintaining their *stigma*. Perhaps they are high self-monitors, in which they monitor everything about their appearance, and find the self-view is simply too much to maintain along with their own self-esteem. With stigmatization, it is interesting to note how the lack of self-view might also be more prevalent in the class as the users become more

accustomed to not showing their self-view. Thus, the stigma becomes accepted behavior, as people who show their self-view might then be perceived as the outsiders, and they will be more noticed as not aligning with the group dynamic. In either case, issues of bordering or othering (Kusenbach, 2018, pp. 355-356) might occur as different students' use of Zoom orient with using or not using the self-view, and each individual user undergoes some form of impression management to maintain their appearance on-screen.

Theme 4: Reduced Mobility due to the Zoom Visual

The tiny camera on the laptop or computer has become the field of vision for Zoom users. They must sit close enough to the computer to reach the keys, even as this action prevents their full range of movement. This is unlike an in-person conversation or classroom in which people are able to shift and move about more freely, if only in their seats. Sitting in front of the camera prohibits natural movement, so the user must give a performance that coincides with this reduced mobility. These virtual *performance* spaces, or bounded settings (Hogan, 2010, p. 378), contribute to the merging of *front* and *back* regions in Zoom. People like to do small, insignificant activities while talking and engaging with other people, such as doodling, which makes the self-view of Zoom all the more frustrating for some users to deal with for long stretches of time. A user could mitigate some of this stress by turning their camera view off. They would then be free to move around their space and do as they please, but if the user is attending a virtual meeting or class, the difficulty then arises in how to stay motivated to interact with the other people on the Zoom call.

Similar to staring out a window, when an individual looks at another user on their computer screen, they have a limited field of vision. This is due to the frustum of the camera (Bailenson, 2021, p. 4), which is the visual cone that provides the field of view. Though Zoom users understand and recognize that what they see on screen is not the entirety of the other person's lived experience, the limited view creates a *stall* (Cahill, 2018, p. 265) in which the user being viewed is "contained" for the duration of the Zoom session. These spaces might present for the viewer as being the *front stage* upon which a specific user is performing one version of themselves (Banks, 2017, p. 421). They might perform another version of their self in a different meeting, or present a different *stage* (the background), or even use different *props*, such as pens, coffee cups, or even pets or children. The reduced mobility issue within Zoom is part of the reason why the immediacy of the experience (Gottschalk, 2018, pp. 239) in real-time can seem so jarring. Due to the interactive nature of Zoom, the user is either forced to wait in real-time or, should they move out of the frustum, might appear as though they are devaluing other users' time. Because they cannot see what is happening off screen, participants may feel left out, but what is actually occurring is something similar to what Søraker calls the *extravirtual and intravirtual experience of satisfaction* (2012, pp. 506-509). When a user prohibits the others from seeing what they are experiencing off camera, it may seem as though they are shunning the extravirtual, or real-time, people watching.

Concluding Thoughts

During the COVID-19 pandemic, the quarantine parameters set up to protect the public left many people feeling lonely and disconnected. In response to the need for continuing education, schools went online, using platforms like Zoom to attempt to emulate the in-person learning experience. Users quickly came to understand just how different that experience could be as certain behaviors present in live classrooms did not translate into the Zoom environment. Attentiveness is hard to manage within Zoom, leaving many students feeling more disconnected than ever before. In particular, those with connectivity issues suffered the most, as Zoom requires a minimum hardware capacity and a certain level of internet robustness. This can cause some users to feel incapable or even excluded from the learning community. Zoom classes led by universities present the opportunities for strong social connection and inclusion, similar to other virtual and online community-based platforms that foster communication (Geraci, 2014, pp. 63-64). But the connectivity issue isn't the only reason why a person might not feel included. They also need to feel invited. It is through the impression management techniques of leaders in Zoom classrooms–such as continued encouragement to "hide self-view" and to create conversations among users–that the participants will begin to feel more included.

Goffman's Dramaturgical Perspective provides insights into the actions and motivations of individuals in Zoom. By applying concepts such as *impression management*, *face work*, and *performance*, we can see how Zoom might feel like an actual performance; one that some users might not be fully rehearsed for. Applying further concepts such as *front stage*, *backstage*, and *offstage* gives us insight into the mobility issues of Zoom. Some cues, such as eye contact and other facial expressions used during in-person classes, become hyper-realized on the Zoom

screen, and create further monitoring issues for users. The concepts of *stigma*, *background*, and *props* help illuminate further oddities that exist between the individual user and the group as a whole. When the individual is made to feel as though they must put in more effort than possible, their performance may be judged by others, and the outcome might become an attached *stigma,* which can lead to further feelings of disconnection from the full class (Kraut & Resnick, 2012, p. 4). What is important to remember for any person using Zoom is that the other users, though appearing in virtual boxes on their screen, are having the same experiences, and giving similar performances, in order to manage their impressions of themselves.

Part 4: Patañjali's Yogic Theory for Self-Management

"In the now, yoga happens." (Finger & Newton, 2018, p. 21) This interpretation of the opening line of the Yoga Sūtras of Patañjali (YS) implies a constant renewing of the philosophical narrative. Some scholars interpret this opening line as a sort of pronouncement indicating the beginning of a treatise on the teachings of yoga (Bryant, 2009, p. 4) but a deeper analysis might also read this as an "invitation to practice yoga always and everywhere" (Ravindra, 2009, p.3). Though written and compiled some time before the turning over of the common era, the YS has become a significant guidebook for modern western practitioners of yoga (Singleton, p. 26). The ideas it contains are no less applicable now than when they were originally written. When considering emergent technologies such as Zoom, we can apply this philosophical and practical framework as a useful means for managing stressors of the self.

Each *pada*, or section, of the YS contains a guide for unifying our limited understanding of reality with the larger truths of our world, which encompass virtual and actual environments. The YS share perspectives and commonalities with Jainism and Buddhism, and we can trace their roots back to the shared knowledge contained within the Vedic Philosophy that evolved into Hinduism, a relationship that highlights the "family resemblance" of these major traditions that have contributed to yoga's history (Sarbacker, 2021, p. 10). The word yoga itself means something like "to yoke" or "to connect," drawing upon its root in Sanskrit, *yuj* (Sarbacker, 2021, p. 2). The YS defines yoga as a tool for the calming of thoughts (Ravindra, 2009, p. 5). The second line, YS 1.2, says "yogaś-chitta-vṛtti-nirodhaḥ" meaning something like "Yoga is establishing the mind (chitta) in stillness" (Ravindra, 2009, p.5). But we might understand *ātman* as meaning *self* and see that, through a yogic lens, the self is in need of some assistance, if only

to find peace and contentment with one's present circumstances. This distinction allows modern

interpretations of yoga to modify the theory for different experiences a person, such as a Zoom

user, might find themselves in. Patañjali makes reference to *ātman* as the essence of the wisdom

gained through the practice of yoga. Patañjali ends by claiming the "knowledge acquired through

the practice of yoga becomes infinite knowledge. It is an omniscience that allows the observer to

become independent from the temporal constraints of the changing world of nature (Miller,

1998, p. 83). It is through the practice of yoga that a person can find a robust system or routine

that aids them in self-management.

  The YS contains a framework for the practice of yoga, called the Eight Limbs of Yoga, or

aṣṭāṅgayoga. Patañjali codified these steps as a means for self-management. The physical

practice of yoga, as we know it today, is only one aspect of this approach. Considering our

current struggles with emerging technologies, and the difficulties users experience with attention

during Zoom meetings, yoga has much to offer in guiding individuals to unify their virtual self

with their actual self. In *Tracing the Path of Modern Yoga*, Stuart Sarbacker provides a strong

assurance for the flexibility of yoga's purpose:

> This notion of yoga as a means of obtaining control over one's embodiment
> through self-discipline is tied into conceptions of the physical and mental
> structure of the human organism as much as it is tied into a unique sectarian
> tradition, philosophical position, theology, or metaphysics. This conception of
> yoga as a mode of mind-body discipline is arguably at the root of yoga's
> adaptability to different Indian sectarian contexts and its success as a
> cosmopolitan practice in the modern era. As a set of techniques of physical and
> mental discipline, it is, in principle, not subservient to a particular philosophy or
> religious view beyond the understanding that mind and body can be fruitfully
> disciplined and brought under control. (Sarbacker, 2021, p. 11)

This assessment, and that of other scholars such as Mallinson & Singleton (2017) and Singleton (2010), bolster the practice of yoga as a multivariate discipline that has continuously received widespread application, interpretation, and use. Highlighting the rooted intentions and meanings of the philosophy of the YS helps modern practitioners and users of virtual platforms alike to understand the history. Applying a modern eye to yogic theory helps to situate practitioners who encounter virtual environments in a mindset of inquiry about their own needs, and additionally, their own processes for managing their attentional dissonance.

Yama

The Sanskrit word *yama,* meaning something like "restraint," carries with it an interesting evolution of interpretation to modern English. The YS begins with explaining how that the practitioner ought to consider their relationship to their surroundings and environment--a sort of "reorienting" of the self to the social world (Sarbacker & Kimple, 2015, p. 13). "Restraint" has become something of a loaded word in our modern Western culture as we are taught that to be restrained is somehow to lack personal freedom—an interesting reverse psychology trick of yogic philosophy. Learning to practice restraint, the YS tells us, can help the practitioner attain liberation. Liberation in this sense might be better understood as living with more awareness and intentionality or being liberated from habits and behaviors that are no longer useful. Through examining each of the five *yama* we can get a better understanding of their relationship to virtual environments, and how this first part of Patañjali's philosophy can provide moral guidance as to how to manage our own behavior in relationship to others.

Ahiṃsā, or non-violence, is the first precept of yama. In a classical understanding, this would mean abstaining from violent actions to other people, and from a modern yogic physical practice perspective, to not push the body past its limitations. Applied to a virtual sense of self, we might take this to mean the avoidance of the self and others within a Zoom meeting. This might also lead us to become aware of our own boundaries within a virtual platform. The second yama, *satya*, or truthfulness (Bryant, 2009, p. 243) implies one's thoughts, actions, and deeds conform with absolute truth (Sarbacker & Kimple, 2015, p. 27). Virtually speaking, this might also mean representing yourself as clearly as possible given the parameters at play, showing your self-view to other users (if possible), using your own name, and not pretending to be another person.

Asteya, or non-stealing, follows satya as an extension of truthfulness. From an ethical view, stealing something that does not belong to you is morally corrupt behavior, as well as an example of lying about possession. Extending this to the virtual world, we might think of *asteya* as being present for yourself and others rather than multitasking and being off camera; an example of stealing time and focus. *Asteya* might also guide the user to be aware of the timing of sessions, ending late or starting early, or over-scheduling too many Zoom meetings per week. *Brahmacharya* translates as containment (Ravindra, 2009, p. 89) or sexual restraint (Sarbacker & Kimple, 2015, p. 29). Apply this to examples of people who might physically or verbally expose themselves when assuming a camera is turned off, or the examples of some who intentionally do so. In these cases restraint falls short, thus applying *brahmacharya* gives a stronger guiding notion of morality within Zoom. This might also apply to the cases of "Zoombombing," (Walsh,

2020) wherein Zoom users have been subjected to unexpected virtual attacks that include sexually explicit content or racially motivated verbal assaults.

Lastly, in the yama is *aparigraha*, or non-grasping (Ravindra, 2009, p. 91). If restraint and moderation is influenced by *brahmacharya,* it is further influenced by *aparigraha.* This could also be interpreted as the avoidance of addiction or over-attachment (Sarbacker & Kimple, 2015, p. 30). We can address any technological advancement with this same question–will we be using this in a way that creates more harm for ourselves or others, especially unhealthy attachment or addiction? Zoom fatigue might be considered a result of an over-reliance on the platform. Mastery of all five *yama*, and in particular *aparigraha*, is "said to lead to an insight into the nature of life, the 'how' of existence" (Sarbacker & Kimple, 2015, p. 32). Utilizing the yama as a moral guide for interacting with each other in virtual environments brings us closer to understanding what we might owe to each other in terms of patience, compassion, kindness, and preparedness.

Niyama

When considering the self, the YS offers a code for personal conduct, or *niyama*. Sometimes translated as observance, the *niyama* ask us to examine our conduct as it is directed inward (Bryant, 2009, p. 252). Though we could examine any one of the yama and apply this to a code of personal conduct when alone and turn the niyama into a code of conduct when in the world, Patañjali is clear on this distinction (Sarbacker & Kimple, 2015, p. 33). Renowned yoga teacher Alan Finger posits the niyama represent a "reprogramming to live in homeostasis" (2018, p. 54), and so we might consider the niyama to give us guidance on how to bring ourselves back

into balance. *Śaucha*, or cleanliness, the first of the niyama, when conducted alone has everything to do with personal physical care. To practice śaucha in a virtual setting might take on notions of mental clarification and focus, or the cultivation of certain mental & emotional states (Sarbacker & Kimple, 2015, p. 35). This might be done by observing the mental space one is in when logging into a Zoom session or not denying the truth of how we feel at any given moment but allowing and then moving beyond it.

Saṃtoṣa, or contentment (Bryant, 2009, p. 252), follows. To link this to the yama of aparigraha, we see how a connective theory exists between the first two limbs. Contentment comes in quiet moments when we are able to let go of the inner drive to consume. Similar to the Buddhism's Eightfold Path (Mallinson & Singleton, 2017, pg. 9), where suffering or thirst can be ended by the release of attachment (Callicott, 1997, p. 60), *saṃtoṣa* urges the same. Zoom itself will likely be in use for a while, even after the disbursement of COVID-19 vaccines. Contentment with using it a bit less might make it more meaningful. *Tapas*, often translated as "austerity" (Bryant, 2009, p. 252) or "heat" (Sarbacker & Kimple, 2015, p. 37), means to harness the inner fire of self-discipline. Consider the *yama* and *niyama* preceding, and ask how we might observe these without self-discipline? Discipline is holding fast to the rigors of learning via a new platform. It makes a strong directive to adopt and maintain these changes; pushing the self to strive towards a goal regardless of the means. For users of virtual platforms, this might also realistically translate to tolerating the discomfort and challenges of being immobile for long periods of time, as Nadler points out (2020).

Svādhyāya, or self-study, is the observance of our inner patterns and habits, and translates more specifically as self-study (Ravindra, 2009, p. 92) or as the recitation of sacred texts

(Sarbacker & Kimple, 2015, p. 40) While the modern yoga practitioner might understand this to be an act of relating the observance of inner thoughts during a yoga class, we can ask much more of ourselves when observing our habits before, during, and after a Zoom session. As *tapas* might bring forth a sense of discipline towards a certain goal, *svādhyāya* would ask us to acknowledge our habits and even our limits when making strides towards that goal. As *svādhyāya* relates to the act of recitation, we might think of this as likened to a student reading a text aloud to a full class. The reflective quality in this instance is in circumventing any sense of social pressure: reading aloud from a pre-formed text is much less stressful than speaking candidly with a group in Zoom.

Īśvarapraṇidhāna, or dedication to the lord or master (Sarbacker & Kimple, 2015, p. 41), is the final niyama. Modern Western practitioners often interpret this as an invitation to surrender to "what is." We could interpret this instead as the cultivation of talents and abilities that help us become more adept at navigating the challenges of new tech as a person who has "mastered" it would. Alternatively, this can apply to the ability to return, at least periodically, to observing the experience of Zoom as a whole and not being caught up in identification with either the experience of the actual or virtual self. When taken in the context of *Kriyā Yoga,* which is discussed as a more direct and assertive version of practice in the YS (Bryant, 2009, p. 169), the three *niyama–tapas*, *svādhyāya*, and *īśvarapraṇidhāna–* are considered a formula for accepting and understanding one's own limitations and abilities (Sarbacker & Kimple, 2015, p. 42). Additionally, *Kriyā Yoga* can be practiced to align the body (or senses), speech, and mind (Bryant, 2009, pp. 169-171). If we consider the *niyama* as a whole, we can also take this

particular set of codes as preparation for deeper states of awareness of the self in both virtual and actual settings.

Āsana・Prāṇāyāma

As the yama and niyama are meant to help prepare the body and mind for being in the world, the next two limbs begin a journey into discipline of body and breath as a means to bring steadiness of mind. *Āsana*, the physical postures we associate with yoga today, are the tool used to exact that discipline. While described in the YS as a way to prepare the body for the rigors of seated meditation (Miller, 1998, p. 56), for the modern yoga student prior to COVID-19, practice happened at a gym or a yoga studio and usually served to function as something like a workout. Yet, many practitioners are now utilizing online resources such as YouTube to discover yoga classes they can do at home, with many studios and gyms offering live synchronous yoga classes where, theoretically, a teacher could still observe and give feedback to their students, provided the students opt to display their self-view. *Prāṇāyāma*, or breath control (Sarbacker & Kimple, 2015, p. 45) can act as a meditative tool for focus but can also serve as a tool to gauge one's stress levels. Applying attention to our breath alleviates stress and helps us relax. Our breath connects us deeply to the current state of our self within our environment. Ravindra points out how the YSP highlights the importance of the breath as a vehicle for "controlling the distractions of the mind" (2009, p. 106) so we might consider how breathing can help us with physical preparation for sitting in front of a computer. A slow and focused breath can calm the nervous system, in part through activating the vagal "relaxation response," which counteracts the stress response of sympathetic nervous system activation (Levin & Swoap, 2019).

Pratyāhāra

Once the body and mind have been prepared, the YS steps the practitioner into deeper practices of awareness. *Pratyāhāra* is the practice of withdrawing the senses (Ravindra, 2009, p. 108). This marks a turning point in the path of the eight limbs, as now the practitioner is asked to turn away from all outside stimulus and disciplining physical techniques, instead focusing solely on internal awareness. We can examine this as the shift of self-assessment to return and focus on the object in front of us, such as a virtual platform like Zoom. By turning inward, we can experience a greater awareness of how our daily choices affect our well-being. We may even call this turning inward an effort towards familiarization with our own *umwelt*, our perceptions based on our biological makeup (Thomashow, 1999, p. 126). Our personal needs can provide feedback on the efficacy of certain methods and turning inward helps us to understand those needs more clearly.

Dhāraṇā ・ Dhyāna ・ Samādhi

The final three limbs on the path follow a progressive theme that moves from *pratyāhāra* and explores further into the states of *dhāraṇā,* concentration, through *dhyāna,* meditation, and ending with *samādhi,* contemplation (Sarbacker & Kimple, 2015, p. 57). In choosing to explore them as interconnected, the aim is not to dismiss the importance of any one stage. By comparing all three together, a greater understanding of their integration and interdependence can be recognized. Patañjali even acknowledges this: "Mastery of dharana, dhyana, and samadhi together gives comprehensive insight" (Finger, 2018, p. 67). *Dhāraṇā,* or concentration, takes its linguistic meaning from the Sanskrit root *dhār,* which means *to support,* while *ṇā* is defined as

the eternal cosmic vibration (Maki, 2013, p. 237). We can understand the root meaning of concentration as the mind becoming fully engaged with what is real—the "eternal cosmic vibration" can be recognized more as the vitality present in other Zoom users. When observing another person through a virtual lens, instead of falling into a response similar to the "uncanny valley" effect, it is important to remember they possess the same living sense we do.

Dhyāna, or meditation, is the refined act of concentrating. As the practitioner engages further with concentration, all distractions fall away. What is left is a pure state of flow, not unlike being in "the zone," as we may experience when performing an action without thinking through all the required steps. Athletes, dancers, musicians, and any profession or skill that requires intensive learning, focus and mastery report the same sense of this flow state. Sarbacker and Kimple provide some insight into *dhyāna*, that it is "the stretching out, or extension of, the unification of the mind on an object that is characteristic of *dhāraṇa*" (2015, p. 60). The flow state of meditation happens when cultivating focus through repeated action. This might also be thought of as a coalescence of presence and awareness of the self existing simultaneously in the actual and the virtual environments. This attends to the issue of attentional dissonance through the same sense of dilating one's field of awareness.

Samādhi, or contemplation, is the moment when *dhyāna* and *dhāraṇa* become effortlessly combined (Sarbacker & Kimple, 2015, 61). As the practitioner has continuously refined each limb on the path, the illusions and distractions of mundane experience pass away and what is left is a state beyond concentration and absorption. In *samādhi,* we can experience the union of truth and consciousness or, more technologically speaking, our understanding of the whole of our environment and our part in it. For Zoom users, the insight is in remembering one's

connection to others, even as we are drawn into a strange and false dichotomy due to the presentation on our screens. Yoga, as a practice, has a goal of self-transcendence or the uncovering of reality through *mokṣa,* liberation, or *kaivalya,* separation (Sarbacker, 2021, p. 93). This kind of description of yoga might feel rather esoteric or inaccessible for a modern practitioner who simply wants to feel less stressed, so instead it might be more considerate to say we try to transcend the stressed-out version of ourselves who might act out of reaction or base desire. The cultivation of a regular routine that addresses all parts of the self, even if that self is a byproduct of virtual connections, should be considered and implemented if a person actually wants to feel less stressed. Most mind-body disciplines will tell us something similar–to breathe deeply, meditate, move our body, and examine our daily habits. These similarities will be further compared in the next section. Yoga provides a strong ethical framework that assists the practitioner in keeping a routine and knowing when to change it.

Part 5: Yoga for Technological Connection

When faced with my own learning and communication hurdles using Zoom, I found myself turning more often to small daily yogic practices, such as pranayama techniques and mantra repetition, to manage my stress. As each term of my master's program progressed, I witnessed firsthand how students and teachers coped with using Zoom for classroom lectures and seminars, many becoming stressed and fatigued from prolonged hours spent in front of their computers. I tracked my own weekly Zoom use, which went from 10 hours per week on average during the spring, summer, and fall of 2020, to nearly double that during the winter of 2021. I experienced a significant increase in my daily fatigue from my workload, which was of course, compounded by the ongoing pandemic. From multiple conversations with my fellow yoga practitioners, I realized that many of them were turning to contemplative practices such as yoga and meditation with more regularity to cope. Thus, I aimed to create a program that would deliver these practices via a virtual synchronous platform.

As a part of my master's program at Oregon State University, I created a practicum project to address self-management strategies for users of Zoom and other cloud-based video conferencing platforms. This course took on an eight-week format to allow some extra time for participants during the first and last weeks of winter term. During each class, students would sign in via a secure Zoom link, and I would deliver a brief lecture on the "theme" of the week, such as "Resilience" or "Patience," how one could practice such a thing in Zoom, and how yogic philosophy was relevant to the theme. After this, the class would either enter into ten minutes of personal reflection upon the theme or into breakout room discussions in small groups to discuss it. Both reflection and discussion periods were led by guided prompts that I developed for the

week. Once the reflection and discussion periods were over, I led the class in a yoga and meditation practice and utilized specific cueing and imagery during this practice session to maintain a connection to the theme of the week. Some weeks included more relaxing, self-awareness meditation practices, and some weeks involved slightly more rigorous, yet accessible, physical movements to encourage awareness while in motion. As students at universities and other educational institutions experienced a nearly overnight transition from in-person classes to virtual learning and, as one of those students, I felt a desire to help my community cope with the changes. As a yoga instructor myself for several years, I decided to start with skills and practices I could deliver to others and build a program beyond that. I proposed a project that would address stress and Zoom fatigue from within the platform itself. My assertion was based upon the premise that we cannot build resilience to something without some exposure to it, similar to the idea of eustress or "good stress" (Le Fevre et al., 2003). I also wanted to assess how outcomes might differ between a university student base and a community one, so I engaged both a local yoga studio and an on-campus initiative to deliver the course simultaneously. We called it "The Yoga of Zoom" to denote that yoga and Zoom would be experienced together.

Though I attempted to provide as much clarity as possible from the very first encounters with The Yoga of Zoom framework, many people expressed confusion at the title itself. I played with several ideas such as "Presence and Resistance: Contemplative Strategies for a Changing World" and "Contemplative Strategies for a Virtual World; Self-Management in Zoom" but none seemed as appropriate as "The Yoga of Zoom." The main clarifications beyond the marketing materials I created for the program centered around exactly how much yoga versus how much Zoom would be taught in the class. Due to assumptions around modern postural yoga classes, I

assessed there could be difficulty enrolling people who might be expecting something more

traditional, and I would not be teaching in this manner. I specifically wanted to be inclusive of

people from all movement backgrounds, and thus decided to teach chair yoga as the primary

method in order to accommodate a wide range of potential participants. I also anticipated some

difficulty ensuring people that I would address tips for using Zoom itself. The purpose, as I

stated it in the marketing materials, was as follows:

> Uncertainty is inevitable. Today, technologies exist to help us become more organized, productive and connected than ever before, yet many people have never felt more anxious, isolated and alone. That paradox causes us to sometimes blame the technology itself. But what if we didn't turn away from technology and, instead, found ways to use it intentionally—to cope, de-stress and reinvigorate us? During this 8-week series, you'll learn contemplative practices based on Yogic philosophy. Each week's class will begin with roughly 20 minutes of lecture and interaction, including some time for personal inquiry and discussion in small groups. The remainder of the class will focus on gentle movement, breath work, and meditation, which you can apply in your daily life, both online and off. (Darshana et al., 2021)

As I began building the course and marketing it to both university students and

community members, I decided to create a separate email address as a way of funneling

participants from both the university and community into one place. This allowed both myself

and my co-host (who would be monitoring the technology while I taught) to have equal

communication access with participants, as well as provide the participants an easy way to

connect with both of us. I did the same for the Zoom meeting link and, once all the registrations

were completed, I started emailing the full list of participants with weekly updates that included

a link to a recording of that week's class (located as an unlisted playlist in YouTube), as well as

any relevant articles or other information that might enhance their experience at home.

Sometimes I shared music videos or inspiring websites, though I remained aware that giving anything resembling homework would potentially create more stress for the participants. As the weeks continued, I narrowed the sharing down to one email per week with two or three links attached.

Preparing

Prior to the start of the eight-week course, I was curious the level of technology and Zoom use that each participant experienced in their daily lives. Because the use of technology is so ubiquitous and ingrained into our everyday lives, some individuals might not realize it may need to be changed or monitored. As a newer technology, Zoom can often come under even deeper scrutiny. For communication purposes, I created a separate email address (yogaofzoom@gmail.com) to allow students from both the community and the yoga studio to contact me without my having to share my personal email. This also allowed me and my co-host to access the email together should someone have a need at a particular time that the other could not accommodate.

Operating under an assumption that some people would be joining the class via their computer, and some would use a smartphone or a tablet, I purposefully studied how Zoom itself operates differently in each app. Some controls are more easily accessed via the desktop version of the app and remain nearly hidden in the smartphone version. This presented a problem for me as I would at times be helping people utilize the app itself, and I would need to be able to articulate how each version of the app behaved differently. In my experience with yoga students at a yoga studio I previously taught Zoom yoga classes for, I noticed that some students had

difficulty finding some of the functions of the app, even after I led them through trying certain options out. After time, I was made aware that some students were accessing the classes via a different technological device than I was using. One function, the "hide self view" toggle, is couched under two separate menu options in the mobile Zoom app, making it very hard to find. I also speculate that some students simply do not know some functions exist, such as the ability to turn off and on their own camera, or to use the chat function, so being able to address these kinds of questions, even questions that asked after the nature of a function, was of the utmost importance.

Another assumption I made about the participants was that some students were likely to have some prior knowledge of yoga and meditation and some students were also likely to have little to no experience of it. Though yoga is practiced widely in general, I could not know what kind of yoga person may have encountered or their response and opinion of yoga. I also could not know how any specific participant already experienced movement and mindfulness modalities, which is to say some students may or may not have certain physical movement capacities that fall under the assumption of "yoga practice" in the United States. Therefore, I chose specifically to teach the movement parts of class from a chair yoga format and make in the moment decisions on the specifics of each posture or movement based upon what I could see of my student's movements on screen. Chair yoga aims to modulate movements for people who may prefer to sit or need a seated option instead of a standing or lying down pose. It is generally thought of as more accessible to a wider range of bodies and movement types. For those with limited meditation experience, I opted to teach simple focusing and awareness techniques that were internal awareness building. Techniques such as breath counting; wherein a person counts

to a certain number, assigning a count of "1" for the inhale and "2" for the exhale and so on; help

to focus the mind, but also start to build a person's mental awareness of when they get distracted.

By also focusing on the breath with the counting, a person can also attend to their stress and

breath response. As I would guide the class, I would ask them to slow down the count

sometimes, just enough to slow their breath rate down, and in effect to calm down their nervous

system in the process. These techniques have been taught to me over the years of my own yoga

practice, and I have found them very useful in combatting stress and helping me focus.

As a student in virtual synchronous classes myself, I was already aware of the

complexities of camera use among larger groups of people. I was regularly one of few students

to put their camera on in my larger lecture style classes, composed of both undergraduates and

graduate students, as I found it helped keep me focused and aware of being "in" class. Though I

cannot speak for the rest of the students, I speculated that having the camera on in larger classes

was viewed as optional. Ethically speaking, being on camera cannot be a requirement of

attendance in class, but I also speculated that more people might put their camera on if prompted,

as supported by the number of occasions one of my own professors would encourage students to

do so. This prompt, accompanied with a statement saying something about how seeing students

helps the professor to deliver to the lecture, nearly always encouraged more students to put their

camera views on. This might suggest that some people do not mind being seen in theory, but

when experiencing Zoom in real time, the compounding nature of the camera adds some stress

akin to the issues surrounding attentional dissonance. Comparing the larger class size of

undergraduates to smaller graduate only classes, I can assess that it is either the size of the group

or the status of the group (undergraduate or graduate student) that somehow forces the use of

cameras. In the graduate only courses I attended virtually, nearly every student uses their camera, but these courses were smaller in attendance as well. For The Yoga of Zoom, this meant I could assume that due to the larger number of participants, I would perhaps only see a portion of them via their camera view.

In developing the marketing, I tried to gear it towards people who experienced issues related to prolonged Zoom use, but I presumed that having "yoga" in the title meant some people wanted to join primarily to participate in a yoga class. This highlights an issue I anticipated with the title and the assumptions of modern yoga in the West. Attaching "yoga" to the title of a class lends a certain level of "mystique," and some students who might possess prior knowledge of postural yoga may attend without prior research into what the specific course might entail. This assumption highlights something I had not anticipated: that people who do not use Zoom regularly would want to participate in this course. In speaking with some of my students prior to the course, I ascertained that some of them simply were curious, and rarely used Zoom. Some of these people were regular yoga practitioners, but some were not, making any sort of correlation between technology use and yoga practitioners null. In considering how often my students used Zoom, or any other technology, for long periods of time, I anticipated mostly students experiencing Zoom burnout. What I did not anticipate was a person wanting to attend class that did not use Zoom regularly. This might suggest some participants were simply intrigued by the title or looking for guidance on how to use Zoom in a strictly functional capacity. As I discovered, participants attended from various backgrounds, identities, and technology know-how, suggesting "The Yoga of Zoom" sparked curiosity in many people.

I was notified of some students requesting pre-practice guides and slides before each class, so I made several accommodations. The creation of a practice guide with written movement instructions was sent each week prior to class, along with the slides from the lecture. Every recorded Zoom session had an accompanying transcript, which was sent to those students, along with the recording link. The links sent the students to a private YouTube channel specifically for The Yoga of Zoom. I wanted students to come away with a new sense of how to manage their stress and personal needs surrounding their use of Zoom. My aim was to provide tips and tools for navigating the quick necessity of learning new technology, as well as ideas about ways to create boundaries with technology.

Additionally, I wanted to provide the participants with a guide for practicing yoga and meditation at home without any technological requirements through the repetition of breathing, stretching, and movement patterns from week to week. Lastly, I wanted to provide an understanding of the general inhibiting factors that can lead to feelings of resistance to emerging technologies, such as Zoom, and ways to overcome resistance using contemplative strategies. I assessed the best way to go about doing all of this was to rely on a familiar framework for class every week, and to repeat the information. Again, recognizing that many students would already be entering the course with a heightened level of stress, I wanted to promote resiliency during the pandemic through the only means we could use to connect–technological–and base it on yogic principles that have familiar modern counterparts.

Weekly Course Overview: Main Theories and Practices

As discussed in the previous chapter, yogic practices such as those outlined in the *Yoga Sūtras of Patañjali* (YS) can provide users of technology with tools for self-management. The goal of the Yoga of Zoom course was to highlight and outline some of the more purposeful philosophies contained within the YS and relate them to some modern interpretations that provide actionable management tools. For some participants, yogic theory was inevitably going to be a bit beyond what their personal desired outcomes would address. Yet, in keeping with the understanding of yoga's roots as being developed and cultivated over thousands of years in India, as a white teacher of yoga I could not deliver these teachings without highlighting the philosophies themselves. To not do so would be, in my analysis, disrespectful (if not appropriative).

During the first three weeks of the course, I presented the topic of "Resistance" and "Presence" through the context of the *niyamas*, or observances, the second limb of the *Patañjali* system. As the *niyamas* have to do with a person's relationship to their own self-management, I felt this was a good place to start, especially for Zoom users, as it would immediately address some familiar issues the participants may already be experiencing at home. *Śauca*, or cleanliness, and *saṃtoṣa*, or contentment, are two issues that will be familiar to any person stuck at home due to quarantine measures and finding themselves in hours of Zoom meetings every day. These relate to daily personal hygiene, as well as mental and emotional well-being. *Svādhyāya*, or self-study, and *tapas*, or discipline, both contribute to a deeper understanding of a person's needs, as reflecting on their technology use and its effects and how they may or may not be finding motivation for self-discipline. Lastly, the concept of *īśvarapraṇidhāna,* or dedication to the

master, might be relevant to users as a constant reminder to remain diligent in the self-care practices that promote resiliency in oneself. Said more plainly, users might learn to cultivate a sense of equanimity in response to the stresses of simultaneously being in virtual and actual environments.

Relating these concepts to a modern interpretation, I asked the students to work with some prompts from the explorative model of *Appreciative Inquiry*. First developed by Cooperrider and Srivastva (1987) as a means for organizations to shift away from a "deficiency" problem-solving method that asks what might be wrong with a certain issue. Appreciative Inquiry instead asks the querent to focus on positive aspects that might already be present within the examined issue, and then continues to prompt the querent to assess what else might be good, useful, or promote their own resilience. Since then, the model has been furthered by Whitney and Trosten-Bloom (2002) and even utilized to address the current pandemic by Cooperrider & Fry (2020). Just as Appreciative Inquiry prompts the participant to step beyond the boundaries of a "good vs. bad" dichotomy of inquiry (Cooperrider & Fry, 2020, p. 269), yogic inquiries that are inherent within the *niyamas* ask the participant to engage with themselves in a similar fashion.

We can see an interesting interplay when drawing together the *niyamas* with the 4-D model of Appreciative Inquiry (Whitney and Trosten-Bloom, 2002, p. 6). *Śauca* and *saṃtoṣa* provide an interplay with the first "D" of the AI cycle: Discovery. Clearing the mind and cleansing the body helps a person to appreciate their present. In addressing these notions together, the actionable step became "Take a moment to reflect, breath, and notice how you feel in this moment. What do you discover? What do you appreciate?" The second "D" of the AI cycle, Dream, aligned with *svādhyāya,* and the actionable step became "What could help you

right now, based on what you know about yourself?" The third "D" of the cycle, Design, led to

an exploration of *tapas*. Through an actionable step that asked the participants to design their

space, schedule, and other support structures based on their needs, they could support themselves

in developing more discipline to meet their goals. The fourth "D," Destiny, led to the actionable

step of surrender, or *īśvarapraṇidhāna*. I liken this more to a state of flux and flow; one minute,

users are in a flow state; the next, they've encountered something that throws that state into flux–

Zoom is no different. The first four *niyamas* help prepare the user, and the final *niyama* helps the

user to surrender some of the control and learn to be more flexible. This is practiced by

breathing, noticing, reflecting, proceeding, and then letting go of a need to control every moment

of the Zoom session.

When the course met for week four to discuss the theme "Resilience," I presented a form

of yogic practice that extends from the niyama model called *kriyā yoga*, the path of action. This

form is said to be more active for practitioners who might require assistance with the restless

mind (Bryant, 2009, p. 168). *Kriyā yoga* is composed of three tenants from the *niyamas*: *tapas*,

svādhyāya, and *īśvarapraṇidhāna*. To modernize this concept, I compared it to the work of Lucy

Hone's Flourishing Scale (2014) which yielded insights into actions that build resilience (Hone

& Reivich, 2017). Hone's work asserts that resilient people remember three things: that suffering

is a part of life, that they examine what to exert their energy and attentiveness towards, and they

regularly assess what is helping and what is harmful to their wellbeing. The three tenants of *kriyā*

yoga work in a similar way; to help the practitioner to assess, examine, and surrender to the

truths of their present experience. After introducing these concepts, I invited the participants to

work with them for the next week, taking notes and paying attention to their actions before,

during, and after Zoom sessions as a means of clarifying what self-care practices might help

them flourish with online interactions.

During week five, I guided the participants through a practice of *dṛṣṭi*, or focused gaze.

While not explicitly discussed in the YS, this concept is openly talked about in modern Western

yoga classes as a way to practice focus while in a yoga posture. This concept of focus might be

compared more specifically to the eighth limb, *dhāraṇā,* as a way to practice concentration.

When in Zoom, concentration can be practiced by paying attention to the speaker rather than

dividing attention between several objects within the view. As a technology-specific concept, the

dṛṣṭi of the speaker is important for viewers. When gazing into the camera of the computer or

smartphone, the speaker appears to be "looking" at the viewer, yet from the speaker's point of

view, they are only seeing the pinhole of the lens. To practice this, I divided the practitioners into

small breakout sessions, gave them conversation prompts, and guided them to take turns

speaking about themselves while playing with their gaze. Then we rejoined the large group to

discuss how this might help to build a sense of virtual connection, but also how it can be quite

difficult to look at for more than a few moments at a time. Another issue was highlighted in the

fact that when gazing at the camera lens, the users are then not able to see each other's non-

verbal reactions. As discussed in the literature review, this is a regular issue for synchronous

virtual meetings. It may also be a contributing factor to the attentional dissonance of individuals

in Zoom.

For the remaining weeks (six through eight), I wanted to provide a more relaxing

experience for participants by highlighting the ways in which users might create stronger

boundaries with technology. I led participants through prompts that would help them assess what

they might need to spend time using Zoom for, such as classes and meetings, and then other technology uses that might still be meaningful, such as connecting with friends and family. Finally, we discussed ways they might be using tech that was simply draining their energy. The majority of the postural practices were built around restorative yoga, a practice that is primarily done laying down, supported by multiple pillows and blankets, to promote relaxation. Further themes built upon the niyamas, and more specifically the notions of acceptance, patience, and deep listening (Prantsky & Wolf, 2017). Being a student myself, I hoped to deliver a conclusion to the course that felt manageable and like a respite away from the stressors of school or work life. Utilizing Zoom to deliver these techniques also presented the opportunity to provide an opportunity for eustress development, which I argue can help manage the effects of Zoom fatigue.

Concluding Thoughts

For this series, I did conduct preliminary and exit surveys to gauge the effectiveness of the course. While I cannot provide that information due to IRB standards and protections, I can provide some information from my own reflection on the course. The course had a large registration size of 162 people at the beginning of the series, so I was able to address a large audience. Over the duration of the series, I had four people reach out to "unsubscribe," which was an option I gave them via email after week four. Here's a breakdown of attendance over the full eight-week course, which shows how many people attended each week out of the 158 on the full list after the four unsubscribed users were removed.

Table 1

List of Weekly Attendance Numbers

Week One:	75 attendees	Week Five:	20 attendees
Week Two:	31 attendees	Week Six:	18 attendees
Week Three:	31 attendees	Week Seven:	17 attendees
Week Four:	21 attendees	Week Eight:	16 attendees

Bearing in mind that a term length is ten weeks, and many participants were also students or faculty at the university, I think it is useful to note that students remained engaged with the class until the last meeting, though the size did diminish towards the last few weeks. It is important to remember that Zoom is challenging for many people, even when used intermittently. Many issues exist for users, some of them self-oriented, but many of them have to do with access or time constraints. For people already spending ample time on the platform, a class that requires little in terms of credit hours or homework was also not likely to be made a priority, though a downsize in attendance of virtual classrooms has declined in general as schools went remote (Goodnough, 2020). As some of the participants were from the yoga studio, this workshop provided some of the members a way to stay connected for a while longer, and, for the university, this workshop provided a complimentary course for people to be led through some self-management techniques related to yoga, which were then applied to Zoom usage. The homework was not mandatory, and each week could stand alone. Therein lies one of the first concerns.

For a person to succeed with self-managed and self-oriented goals, they must first develop the capacity to do so. They must cultivate a certain level of discipline. Without some more immediate sense of reward or credit, the benefits of maintaining a regular practice might be overlooked. During the COVID-19 pandemic, I'm not certain that many people had full access to their own tenacity, as stress and anxiety often seemed to supersede self-discipline. Coping strategies had to be very simple and gentle on the nervous system, which I attempted to adhere to throughout the course. However, for some the need to be directed by a teacher is an important driver, which means self-discipline may have been more difficult for them to achieve on their own. In that case, the simple and mindful approach to self-mitigation would inevitably cause those people a certain level of discomfort which they had difficulty overcoming.

As the teacher of the course, I found some students really seemed to enjoy the novel nature of using Zoom for yoga and meditation as well as meeting new people and engaging with the technology. In particular, the participants asked for more time in the breakout rooms I would create. This surprised me, as my experience as a Graduate Teaching Assistant and student in other Zoom classes led me to believe that many students did not enjoy engaging in breakout rooms. This may partially have to do with different cohorts of people. Undergraduates seem to engage less often than graduate students, and sometimes only unmute to speak while choosing to leave their cameras off. As mentioned in the section on dramaturgical analysis, undergraduates may not use their cameras or engage vocally in Zoom classes and breakout rooms because of a set social precedent. I did not experience the same of graduate students, and as a comparison, I noticed the people who used their camera view in The Yoga of Zoom course also tended to speak directly to me as opposed to using the chat feature. I do not think age or gender plays much of a

role in academic settings regarding camera use, but may in other circles, such as workplace and business interactions.

The biggest takeaway from leading the course is that I observed and provided some "baby steps" for some of the participants. It can take quite some time–years or even decades–to "master" one's attention and discipline. I have been practicing the kinds of techniques I taught during the course for almost thirty years. With each week, I saw participants engage more with me in Zoom, and check in with me after the sessions were over to tell me how a particular practice might have affected them or to reflect on the interesting experiences they had during class. While I do not think yoga provides an overnight change to a person's self-awareness of their behavior tendencies or stress levels, I do think these techniques can help and do work when practiced regularly, and the application is broad. They can help to manage the effects of Zoom Fatigue and attentional dissonance, but they can also help to do the same with any sort of stressful experience. Yoga was developed to manage the stress of living, and while the philosophical notions may be a bit obscure for most modern Zoom users, when applied with similar modern theories, they become more accessible.

Part 6: Conclusion

The timing of the writing of this thesis coincided with the swiftly shifting timelines of U.S. vaccinations during the COVID-19 pandemic. I began writing when it was unclear when, or even if, universities would resume in-person classes in 2021. With mass vaccinations on the horizon, it was vague as to when people in my age group would be able to take part. As I concluded this manuscript, all adults in every age group, and children ages 12-18 were able to receive a vaccine, and universities were set to reopen for the fall term. Although, it may seem as though virtual classrooms might be relegated to the memory of an unusual time in history when students around the world were forced to learn from their homes, that is unlikely to be the case. During the pandemic, most people were simply waiting for a return to "normalcy," eager to get through it by any means necessary. Simply "getting through it" meant people likely bore much more stress regarding virtual learning than was necessary. We can learn from this experience by being prepared for a future wherein other global issues may arise that force us back into solely virtual communication. Knowing how to manage oneself with similar technologies can mean a great deal if such a time occurs when we need Zoom again on such a large scale.

Zoom fatigue is a real phenomenon and, as such, has lasting effects for many people. Further academic work will likely be published in the next year, and the findings will provide greater insight into the effects of Zoom fatigue and how people were coping with the shift into and then out of such ubiquitous use. Does the nature of the self change when entering and engaging in virtual environments? As the current work assesses, something about the technology itself, meaning the device and the platform combined, creates a dissonance of self for users. Whether that is attentional dissonance, as I argue, or something more like a jarring visual and

aural experience that fatigues users, clearly, we need further practice with the use of this kind of virtual communication. Attentiveness is certainly an issue for students, but that could be said of in-person classes as well as virtual. The ability to self-manage prior to engaging in learning via a virtual platform like Zoom will result in increased success in the long-term.

As we have learned, Zoom fatigue can be at least partially mitigated by having a routine, such as staying on-task with self-imposed deadlines and scheduled meetings. It is not that these routines necessarily make life easier, but they can help make everyday tasks more manageable. Between both Zoom fatigue and the ongoing COVID-19 pandemic throughout 2020 and into 2021, it is more important than ever to manage our needs by adhering to a sustainable routine, however boring it might be. The same can be said for any purposeful endeavor a person would like to undergo. So, it is possible that Zoom isn't necessarily any different an environment than any a person encounters in life, but it is more so that the novel nature of Zoom makes it more stressful for the present. Eventually people would get used to it just as they have done with other apps on their computers and smartphones.

Goffman's dramaturgical theory sets up a position for users of virtual synchronous environments to understand how actions and behaviors, displayed via Zoom, might not necessarily present in the ways they are intended. That means, try as we might, we may project in ways that do not represent our internal feelings. Although the same can be true for in-person interactions, the virtual lens in which we see each other through can distort our image of our own self. That distortion is at the root of why prolonged activity in virtual environments can feel so exhausting. To see oneself reflected via the same screen once reserved primarily for homework (or internet use) creates an attentional dissonance of the self wherein the user exists

simultaneously in the *virtual* realm (of the Zoom meeting) and the *actual* realm (the place they are connecting to the meeting from). Their energetic output shifts to maintaining the *virtual self* with greater attention than the *actual self*. That is why management strategies such as yoga and meditation are necessary to help us cope with the resulting dilation in our field of awareness. It is very difficult to maintain such a broad focus, often for long stretches of time and in so many places at once. Yoga can provide tools and philosophical ideas that aid us in shifting our perspectives to ask ourselves how the Zoom experience could be better. Yoga provides a structure and set of routines for engaging a person in bringing their *virtual self* back into the body of the *actual self* through building awareness of a person's embodiment.

For me, the time spent in quarantine and virtual learning has been the perfect opportunity for exploration and to ask why the virtual environment "feels" so removed from the actual world. The compelling conclusion I have arrived at is that our self is always shifting with every new experience, especially when entering new environments including the virtual world. One might conclude then that the self is composed of our biology as well as our perceptions, influences, memories, and engaged experiences. The self dances around our mind, bouncing off of thoughts and understandings, only to present to others in unplanned and often curious ways. But the self is also contained within us, and our needs are rooted in the biological processes of our bodies. As in the real world, those mental and physical processes require care, even as the self ventures across the threshold into a virtual world.

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