Saints Academic Review

A Journal for Student Research

Sponsored by the
Flagler College Honors Program

Volume One
2023-2024

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State and Trait Mindfulness in Undergraduate Yoga Classes

Faith Corbin and Angelenia Semegon

Pursuing an undergraduate degree can often be challenging and necessitate many life skills in order to balance all that is required to finish. Alongside personal and professional growth, the literature shows that many undergraduate students experience hardships as a side effect of their studies, such as increased stressors and loneliness, as well as heavy substance use (Arnett et al., 2014). Along with mental health issues such as anxiety and depression (Grineski et al., 2021), undergraduate students have been found to be prone to improper sleep habits (Hershner & Chervin, 2014; Moreton et al., 2022; Pal et al., 2022), excessive smartphone and technology use (Dinis & Bragança, 2018; Liu et al., 2022; Pal et al., 2022), and unhealthy eating habits (Jordan et al., 2014; Silliman et al., 2004; Sogari et al., 2018), among others. Moreover, to explore effective supportive interventions for college students, the current study will investigate whether a semester-long yoga class will increase various aspects of mindfulness in a population of undergraduate participants.

Furthermore, in order to look into possible solutions for mental, emotional, behavioral, and spiritual health issues in individuals, especially undergraduate students, researchers have been studying the definitions, applications, and effects of mindfulness (Bortolla et al., 2022; Bravo et al., 2018; Brown et al., 2007; Brown & Ryan, 2003; Jordan et al., 2014; Liu et al., 2022; Moreton et al., 2022; Nardi et al., 2022; Scavone et al., 2020). *Mindfulness* has been defined as the ability to be aware and pay attention to present moment occurrences, in an open and receptive manner (Brown & Ryan, 2003). According to Brown and Ryan (2003), mindfulness has three main components: awareness, attention, and emotional intelligence. Awareness describes the monitoring of internal and external stimuli as they arrive and pass through each moment. Attention

describes focused awareness of a particular or limited number of stimuli. Emotional intelligence describes an individual's ability to have a transparent understanding of their inner emotional states, especially with receptiveness (Brown & Ryan, 2003). A mindful state of consciousness supports individuals to be non-judgemental "witnesses" in their lives, where they can be fully aware of the passing internal and external phenomena that occur without judgment, attachment, identification, or rumination (Brown et al., 2007). This openness and receptivity then causes a more flexible psychological stance in navigating through life in general. Mindfulness influences individuals to have more space between stimulus and response, and therefore, more ability to choose a response that could be more beneficial rather than unhelpful in their lives (Brown et al., 2007).

The benefits of mindfulness are supported by a large body of research, demonstrating the salutary effects of this state of consciousness in many different life domains. Mindfulness has been found to have positive effects on physical and mental health, behavioral regulation, and relationships with the self and others (Bortolla et al., 2022; Bravo et al., 2018; Brown et al., 2007; Brown & Ryan, 2003; Jordan et al., 2014; Liu et al., 2022; Moreton et al., 2022; Nardi et al., 2022; Scavone et al., 2020). In multiple mindfulness-based interventions, increased mindfulness has been found to significantly decrease negative responses to stressors (Moreton et al., 2022; Nardi et al., 2022; Scavone et al., 2020) as well as increase resilience (Nardi et al., 2022; Scavone et al., 2020). Liu et al. (2022) showed that a single mindfulness-based intervention can lessen the excessive use of smartphones in college students, mediated by self-control due to the intervention. Jordan et al. (2014) found that mindfulness increases an individual's likelihood of making healthy eating choices. Moreton et al. (2022) demonstrate that mindfulness promotes better sleep hygiene, which can lead to better coping in the face of distress.

There are generally two types of mindfulness that are described and measured, state and trait, and both have been found to have different effects (Bravo et al., 2018; Brown et al. 2007; Brown & Ryan, 2003; Jordan et al., 2014; Scavone et al., 2020). State mindfulness categorizes an individual's ability to be present and aware during a specific activity, such as yoga or meditation (Brown and Ryan, 2003). Trait mindfulness refers to an individual's more enduring mindful personality, in that they have more

dispositional characteristics of receptive awareness and attention in their life moment-to-moment (Brown and Ryan, 2003). Brown and Ryan (2003) described state mindfulness as usually associated with more frequent and intense pleasant affect, less frequent and less intense unpleasant affect, and increased levels of autonomy, while trait mindfulness is usually associated with lower levels of unpleasant affect in general, along with higher levels of autonomy in daily life. Additionally, high levels of trait mindfulness have been found to be a predictor of less uncontrolled eating, a greater likelihood of choosing fruits over sweets, and less calorie consumption, and those with high levels of state mindfulness were shown to consume less calories as well (Jordan et al., 2014). Along with other positive effects, state mindfulness is linked with higher instances of ethical behavior (Orazi et al., 2021) and fewer instances of cheating (Götmann et al., 2021).

In addition to mindfulness, yoga has become a more popular topic of study in the literature, especially regarding its effects on mental health and well-being (Caldarella & Lulla 2022; Dagar et al., 2022; Pal et al., 2022; Sanjaykumar & Rajkumar, 2022). Yoga is a spiritual discipline that includes breathing exercises (*pranayama*), physical postures (*asanas*), as well as meditation (*dhyana*) and has its roots in Indian and Hindu philosophy (National Center for Complementary and Integrative Health, 2021). The etymology of the word yoga is derived from the Sanskrit word *yuj*, or yoke, and the intention of the practice is to create a full alignment of mind, body, and spirit within the practitioner (Caldarella & Lulla 2022).

Research has demonstrated the benefits of yoga in many different areas of life, such as mental health (Caldarella & Lulla, 2022; Dagar et al., 2022), healthy habits (Pal et al., 2022), interpersonal relationships (Dagar et al, 2022), and academic performance (Caldarella & Lulla, 2022), among others. Pal et al. (2022) noted that university students who practiced yoga six days a week were more likely to have uninterrupted sleep and to use their smartphones without excess compared to a no-yoga control group. Sanjaykumar and Rajkumar (2022) examined the effects of yoga and aerobic exercise on primary dysmenorrhea, or menstrual cramps, in college students. It was found that yoga and breathing exercises significantly mediated the level of menstrual pain in participants (Sanjay & Rajkumar, 2022). Dagar et al. (2022) investigated how yoga

affected altruistic behavior and discovered that yoga-based practices both increased subjective vitality and self-transcendence in their participants, mediated by psychological capital, effectively encouraging more altruistic behavior among college students.

Furthermore, yoga can be utilized as a tool to increase mindfulness. In an investigation of the differences in mindfulness and stress levels in advanced and non-advanced Hatha yoga practitioners, advanced practitioners were found to have significantly higher levels of mindfulness, and mindfulness was negatively correlated with stress levels (Brisbon & Lowery, 2009). Mindfulness practices are centered around bringing awareness to the present moment, through intentional breathing exercises, "coming to the senses," body scans, among other practices. Yoga utilizes both breathing and physical postures in order to bring the practitioner into a full awareness of the phenomena occurring within the body and the mind. The intention of the yogic practice is to gradually withdraw from the senses (*pratyahara*), to eventually prepare for the highest state of consciousness (*samadhi*). The yogic philosophy describes this state as a complete disidentification from ego-generated emotion and thought and an absolute absorption in the present moment (Austin, 1998). Furthermore, as the yogic practice intends to bring more conscious awareness to moment-to-moment phenomena within the practitioner, this practice can be effective in increasing mindfulness (Brisbon & Lowery, 2009).

It is relevant to note a study that explores the effects of various movement classes on levels of mindfulness, among other variables. Caldwell et al. (2010) examined the effects of three different types of semester-long somatic-movement classes (Pilates, Taiji, and GYROKINESIS) on mindfulness, self-regulation and efficacy, mood, perceived stress, and sleep quality. Pilates is a floor-based practice that focuses on strengthening the core and aligning the body to its correct posture. *Taiji* is a Chinese martial art primarily focusing on moving bodily energy in circular motions. GYROKINESIS is a workout incorporating aspects of yoga, dance, gymnastics, and taiji for a well-rounded practice (Caldwell et al., 2010). Among the three groups, each participant was measured in the beginning, middle, and end of the semester on multiple scales regarding mood, stress, and sleep, and results showed various benefits of mindfulness (Caldwell et al.,

2010). Analyses demonstrated that increased mindfulness was associated with greater positive energy, greater relaxation, lower levels of negative arousal, greater self-regulatory efficacy, reduced perception of stress, and better sleep quality (Caldwell et al., 2010). This study displays the potential benefits of a semester-long movement class on college students; however, studies have yet to look at the effects of a semester-long yoga class on state and trait mindfulness.

The current study aims to consider whether a 15-week yoga class will increase different forms of mindfulness in undergraduate college students. The study will work with the participants of three different sections of yoga classes: Asana I, Asana II, and Yoga for Stress Relief. Asana I focuses on basic yogic postures and mindfulness principles, breathwork, bodily alignment, various meditations, and an introduction to Patanjali's Eight Limbs of Yoga philosophy. Asana II utilizes these techniques as well as practicing more intermediate postures, learning about *mudras* (hand postures) and the chakra system, and studying the yogic philosophy more in depth. Both sections require students to complete reflective assignments, encouraging them to explore how these practices and theories applied to their lives. It is important to note that Asana I is not a prerequisite to Asana II therefore, Asana II students are not necessarily more advanced than Asana I students, and both classes hold a spectrum of participant competencies. In addition, the two sections of Yoga for Stress Relief focus primarily on postures, breath work, and techniques that help alleviate and prevent stress. Most of the physical practice is floor-based, with fewer standing postures. In this class, students must also complete reflective assignments promoting self-evaluation and self-awareness. Each class meets two days a week for a semester of 15 weeks.

Within the current study, the participants of each yoga class will consistently train in mindfulness principles and techniques, and it is theorized that they will increase their level of state mindfulness as they deepen their yoga practices. Additionally, it is postulated that as time increases and state mindfulness develops, mindful qualities will become more integrated into the participant's everyday life. As these qualities strengthen, trait mindfulness will increase. The research questions of this study include: Will a semester-long yoga class focused on mindfulness practices increase state mindfulness? Will an increase of state mindfulness increase trait mindfulness in

individuals during a relatively short amount of time (four months during the semester)? Will there be a difference in the effect of mindfulness among the various types of yoga classes used in this study?

Method

Participants

The participants of this study were undergraduate students at a small liberal arts college in northeast Florida. Each participant was above 18 years of age, enrolled in an undergraduate program, and was taking a semester-long yoga class offered by the college: Yoga for Stress Relief, Asana I, or Asana II. There were a total of 146 participants who completed some aspect of the study. However, of the 146 participants, 83 completed at least two surveys measuring state mindfulness, while 48 completed both trait mindfulness surveys. One participant was removed due to taking two yoga sections simultaneously. There was no compensation for participating in the study, except for one instance where students of Asana I and Asana II were offered extra credit for completing the survey during the first data collection.

Materials

The materials used in this study were two online surveys made available through Qualtrics. One survey included general demographic questions and measured trait mindfulness using the Five-Facet Mindfulness Questionnaire (FFMQ). The other survey measured state mindfulness using the Toronto Mindfulness Scale (TMS).

The participants were asked multiple demographic questions such as age and gender. They were also asked whether they had practiced yoga or meditation before their induction into the course, and whether they were practicing mindfulness exercises during the semester-long yoga class.

The FFMQ is a 39-item scale which measures the participant's level of dispositional mindfulness, or trait mindfulness, which is generally experienced during their every-day lives (Baer et al., 2006). The survey measures five categories of mindfulness: observing, describing, acting with awareness, non-judging, and nonreactivity (Baer et al., 2006). As an example, the survey asks: "When I have distressing thoughts or images, I am able just to notice them without reacting," and this falls into the category of nonreactivity (Baer et al., 2006). The participant is asked to

rate how much each question is generally true to them on a 5-point Likert scale from 1 (never or rarely true) to 5 (very often or always true) (Baer et al., 2006).

The TMS is a 13-item survey which measures an individual's state mindfulness during a specific activity, such as meditation (Lau et al., 2006). Questions are scored in two categories: curiosity and decentering, and each item investigates the participant's subjective experience during that specific activity (Lau et al., 2006). For example, the survey asks: "I was aware of my thoughts and feelings without overidentifying with them" (Lau et al., 2006). Participants are asked to rate their level of agreement with each question on a 5-point Likert scale from 1 (not at all) to 5 (very much) (Lau et al., 2006).

Procedure

Before the data collection began, the researcher went into each yoga selection and briefed students about the study, where they were offered the opportunity to participate by their own volition. During data collection, the participants were given the survey through links to Qualtrics, which their professors posted to Canvas, the school's online learning and grading database.

There were three data collection times: once in the beginning of the semester that included both state and trait mindfulness surveys (T1), once in the middle of the semester, 8 weeks in, which included the state mindfulness survey (T2), and once at the end of the semester which included both state and trait mindfulness surveys (T3). In the first data collection T1, the participants completed the TMS at the end of their class, after they had just finished their yoga/mindfulness practice, measuring state mindfulness. The participants then completed the FFMQ, measuring trait mindfulness. In the middle of the semester, during the second data collection T2, participants' levels of state mindfulness were measured through the TMS, which was completed directly after a yoga practice. In the last data collection T3, participants then took both surveys, the TMS and the FFMQ after their yoga practice, measuring both state and trait mindfulness.

Results

A series of paired samples t-tests were used to compare the levels of state mindfulness among three time intervals: T1, T2, T3, and trait mindfulness among two

different time intervals: T1 and T3. All the data from each class was combined to create the respective variables of state and trait mindfulness. There was not enough data for each class to compare state and trait mindfulness between the class sections across time. Therefore, the variable of state mindfulness included all global data for each time interval, as well as trait mindfulness. By using paired samples t-tests, state mindfulness was then compared between T1 and T2, T2 and T3, and T1 and T3. Trait mindfulness was compared between T1 and T3.

Additionally, independent samples t-tests were used to investigate any significant differences between state and trait mindfulness levels between classes within each data collection time. Asana I and Asana II were taught by the same instructor and both generally contained similar practices, and, therefore, have been grouped together as the variable "Asana." Asana and Yoga for Stress Relief were then compared in their levels of state mindfulness for T1 and T3, and trait mindfulness for T1 and T3, to see if there was any significant difference in degree of mindfulness between the classes during each specific time.

A paired-samples t-test was conducted to compare changes of state mindfulness between T1 and T2. A significant difference in the levels of state mindfulness between T1 and T2 was not found ($t(1,27) = 1.733$, $p = .094$). T1 scores included: ($M = 40.10$, $SD = 10.75$), and T2 scores included: ($M = 42.66$, $SD = 10.82$). A paired-samples t-test was conducted to compare changes of state mindfulness between T2 and T3. A significant difference in the levels of state mindfulness between T2 and T3 was not found ($t(1,41) = 1.628$, $p = .111$). T2 scores included: ($M = 44.980$, $SD = 7.39$), and T3 scores included: ($M = 46.42$, $SD = 7.28$). A paired-samples t-test was conducted to compare changes of state mindfulness between T1 and T3. A significant difference in the levels of state mindfulness between T1 and T3 was found ($t(1,25) = 3.106$, $p = .005$). Participants scored higher on state mindfulness during T3 ($M = 41.64$, $SD = 10.88$) than T1 ($M = 35.33$, $SD = 19.17$).

An independent samples t-test was conducted to investigate the difference of levels of state mindfulness changes between Yoga for Stress Relief and Asana within T1. No significant difference was found between the two groups within this time interval ($t(1,6) = .628$, $p = .285$). Furthermore, an independent samples t-test was conducted to

investigate the difference of levels of state mindfulness changes between the two groups within T3. No significant difference was found between the Yoga for Stress Relief and Asana during this time ($t(1,21) = .1.86$, $p = .078$).

A paired samples t-test was conducted to compare the differences in trait mindfulness changes between T1 and T3. Analyses revealed no significant difference in trait mindfulness scores among T1 and T3, however, the result was approaching the significance level used in the study: $\alpha = .05$ ($t(1,26) = 1.98$, $p = .058$). T1 scores included: ($M = 123.61$, $SD = 16.00$), and T3 scores included: ($M = 131.39$, $SD = 16.98$).

An independent samples t-test was conducted to investigate the difference of levels of trait mindfulness changes between Yoga for Stress Relief and Asana I and Asana II. No significant difference was found between the two groups within T1($t(1,25) = 1.28$, $p = .72$). Additionally, there was no significant difference between Asana and Yoga for Stress Relief within T3 ($t(1,25) = .547$, $p = .211$).

Discussion

The current study was conducted to investigate whether a 15-week yoga class—Asana I, Asana II, or Yoga for Stress Relief (two sections)—would increase state and trait mindfulness in undergraduate students. It was hypothesized that as participants deepened their yoga practice throughout the semester and became more trained in mindfulness techniques, their state mindfulness during their practices would increase. As state mindfulness increased, it was hypothesized that the participants would become more dispositionally mindful in their daily lives, and, therefore, levels of trait mindfulness would increase. Additionally, it was questioned whether there would be differences between Asana (I and II) and Yoga for Stress Relief in mindfulness within each data collection time. Results showed that between the beginning and end of the semester, state mindfulness for all four combined sections significantly increased. There was no significant difference found in trait mindfulness between the beginning and end of the semester for the combined classes, although the result was approaching significance. There was no difference in levels of state or trait mindfulness between each individual section within T1 and T3, therefore, each class varied in levels of mindfulness among participants at each time interval.

Furthermore, inferences can be drawn from these results. Within each yoga class attended, the teachers guided their students in mindfulness practices, which intentionally brought attention to moment-to-moment awareness. The participants consistently practiced yogic postures, breathwork, and meditation, which all promoted the individual to become more attuned to present moment occurrences. This resulted in the increase of state mindfulness within the students, in that they became more mindfully aware within the led practices in class. This means that the exercises given in the yoga classes had a significant impact on the participants' level of awareness during said exercises. Du et al. (2019) found that an increase of state mindfulness in university students led to an upward spiral of positive emotions. Students who scored high on state mindfulness were more likely to experience positive emotions, and when they experienced positive emotions during the first data collection, they were likely to experience increased positive emotions during the second data collection; this relationship was found in trait mindfulness, as well (Du et al., 2019). This demonstrates that state mindfulness and positive emotions have a positive reciprocal relationship, which is impactful in the reality where many college students suffer from mental health issues (Arnett et al., 2014; Du et al., 2019; Grineski et al., 2021). Other studies show that participants who scored higher in state mindfulness were less likely to cheat on a group performance task (Götmann et al., 2021) and their likelihood of participating in ethical behaviors increased (Orazi et al., 2021). The current study demonstrates how a consistent yoga and mindfulness practice increases state mindfulness, and the research exhibits that this may assist in increasing the health and well-being of undergraduate practitioners, as well as promoting honest and ethical behavior.

Although the changes in trait mindfulness were not shown to have significantly increased between T1 and T3, the result was approaching significance. Trait mindfulness describes a dispositional sense of awareness that is integrated into personality, which means that an individual who scores high on trait mindfulness tends to have a high level of awareness in their everyday life. Although state mindfulness increased, it could be inferred that students did not transfer these mindfulness techniques to a high degree out of the yoga classroom, which may have contributed to the lack of significance during analysis. However, for undergraduate students, the ability to increase moment-to-

moment awareness during intentional activities may be more advantageous for specific tasks rather than being dispositionally mindful. Savone et al. (2020) examined skin conductance in response to stress, and they found that participants who had high levels of state mindfulness had lower skin conductance and a greater decrease in sympathetic activity when faced with a stressful task, compared to those with lower state mindfulness. However, there was no difference in skin conductance and sympathetic activity found between individuals who scored higher and lower on trait mindfulness (Savone et al., 2020). Due to the high levels of stress that undergraduate students face as well as demanding tasks and activities, students who can increase their moment-to-moment awareness may be more able to decrease their negative response to stress, along with feeling more prepared and resilient when presented with challenges.

The results of this study imply that a 15-week yoga intervention significantly increases undergraduate students' state mindfulness. It is important to note that each section—Asana I, II, and Yoga for Stress Relief—all utilized various topics, exercises, lessons, homeworks, and training, however, they all cause participants to increase in moment-to-moment awareness during these specific mindfulness activities. This shows the potential influence on mindfulness practices in general, in that there are multiple modes and methods that support connecting to the present moment more substantially. These results encourage potential opportunities for colleges and universities to offer more semester-long yoga classes, which may support students through the challenges and trials which coincide with pursuing a degree. In addition, it is important to highlight the weight of a 15-week intervention, since 8 weeks was not found to make a significant impact.

Furthermore, there were limitations to this study. Firstly, it is important to note difficulties with conducting a longitudinal study of this nature. Out of all the students that participated, many participants were removed from the study because of absences or lack of completion of surveys on the data collection days. If participants did not complete at least the first and last data collections, they were removed. There were many more participants removed from the Asana group versus the Yoga for Stress Relief group, and this may be due to variations in the data collection process. For all instances of data collection for Yoga for Stress Relief, the researcher came into each class and was

present for survey distribution, and the students took the surveys at the end of class. The researcher was also present for most collections for the Asana group, but at the first collection the students were instructed by the teacher to take the survey online after class for extra credit, and the researcher was not physically present for the last data collection of the group. This inconsistency is most likely the reason for the large number of participants removed from the Asana group. There were not many participants who took the surveys during the first collection, but many who took them in the following collections. This is why the data for each section was combined for analyses, and it is relevant to note that most consistent data was from the Yoga for Stress Relief group. In the analyses of trait mindfulness, since the result was approaching significance ($p = .058$), the result would likely have been significant with the data of more participants. In addition, the demographic questions were not factored into the data used for analyses, for this was beyond the scope of the study. Whether participants had practiced yoga/ mediation before and/or were practicing on their own, may have factored into results. Further, there were inconsistencies in the distribution of the demographic questions, so they were not used.

The results of this study can be generalized to American small liberal arts undergraduate colleges, but it would be worthwhile to recreate this study at colleges and universities of varied sizes in multiple countries, along with other states in the United States. With more participants, researchers could continue to refine and clarify these results. It may be valuable to look at potential differences in participants within the study, specifically whether they are practicing yoga/mindfulness practices on their own, outside of class. In addition, the use of a control group would further create validity and support for results.

Due to the fact that undergraduate students face many challenges in the process of pursuing their degrees, it is important to discover techniques, practices, and interventions that support students' positive physical health, mental fitness, and well-being. The current study demonstrates that a 15-week yoga class significantly increases state mindfulness in participants, which has many positive implications such as more preparedness to handle stressful situations as well as increased positive affect (Brown & Ryan, 2003; Savone et al., 2020). Furthermore, this study gives credence to yoga as a

valuable practice in the lives of college students, and provides more clarity on which modalities of yoga are most effective for becoming more aware and attentive in everyday life.

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Ecopsychology and the Franciscan Approach: The Path to Solving the Ecological Crisis

McKenna Hazel

The Path to Solving the Ecological Crisis

The ecological crisis our planet faces today is one of the most pressing and complex issues of our time. I begin this paper by addressing and acknowledging some of the ways that this crisis is evident in the natural world and the ways that the human population is contributing to that crisis. Sources show that the rate at which we are contributing to the deterioration of the Earth will catch up to us, as we continue to lose species of plants and animals, increase greenhouse gasses, and overpopulate the Earth (Brown 1995, xv). Furthermore, "if everyone in the world consumed as much as Americans do, we would need four additional planets full of resources to supply us" (Delio 2008, 160). The United States National Academy of Science, in agreement with nine other countries, confirmed that climate change is not only real, but brings along severe consequences that are already taking place and will take major change to reverse (Delio 2008, 120). The Earth is finite and limited in its resources, and if society continues in the ways it has been, there will be a point where those resources run out.

The ecological crisis requires a solution that is both comprehensive and interdisciplinary in its approach to encompass both scientific and humanistic perspectives. Recently, the ecopsychology approach has grown in popularity through its endeavor to understand the innate relationship between humans and nature from a psychological perspective. Ecopsychologists recognize that human well-being is deeply intertwined with the health of the natural world, and that the ecological crisis has severe implications for our mental and spiritual health (Hillman 1995). In this paper, I argue that the best path to solving the ecological crisis is by combining ecopsychology with

insights from the Franciscan perspective of the human-nature relationship. Rooted in the teachings of Saint Francis, the Franciscan perspective emphasizes the interconnectedness and sacredness of all creation, and encourages humans to live in total harmony with nature (Delio 2008). By integrating the spiritual and ethical dimensions of the Franciscan approach with the psychological and scientific insights of ecopsychology, we can develop a more complete and whole perspective of the human-nature relationship and develop a path to solving the ecological crisis.

In my argument, I explore how ecopsychology is already a naturally spiritual and religious endeavor, and how the field can benefit significantly from incorporating a theistic perspective. The Franciscan approach cultivates a mindset of gratitude, selflessness, and love of all creation. It provides a unique framework for addressing the ecological crisis (Delio 2008). This mindset shift can motivate humans to act on behalf of the Earth and future generations that will also call Earth home. I will address Lynn White's (1967) article "The Historical Roots of Our Ecological Crisis" to argue that the cause of our ecological crisis is largely due to religion, however, I disagree with White when it comes to the best path for healing. White argues that we must do away with religion altogether, however, I propose that by integrating the ecopsychology perspective and the Franciscan approach, we can develop a more comprehensive, holistic, and effective solution to the ecological crisis without needing to throw away religion. This solution requires a substantial amount of work in order to truly change the way we interact with the world, and it is not only a worthy pursuit, but a necessary one to ensure healing for ourselves and the Earth. As we continue to confront the challenges of the ecological crisis, the teachings and legacy of Saint Francis entwined with the science of ecopsychology offers us a hopeful solution to creating a more sustainable and harmonious world. We must protect our world and learn to understand our connection with it, because as James Hillman (1995) writes, "In this world soul the human soul has always had its home" (xxiii). Therefore, this paper will primarily argue for a path to healing for the ecological crisis by combining the ecopsychology and Franciscan perspectives on the relationship between humans and nature.

The Ecopsychology Perspective

Ecopsychology is the synthesis of both psyche and ecology, a study that is concerned with human behavior and nature within the wider scope of the environment (Hillman 1995, xx). It assumes at the most intimate, innate level that the psyche is deeply interconnected to the environment and cannot be studied outside of that connection. The ecopsychology movement was a significant culture shift beginning in the mid-twentieth century, and it is gaining continued popularity today. Most Americans are currently aware of the damage and destruction that has been done and is continuing to be done to the planet, while simultaneously feeling the weight of a significant mental health crisis (Fisher 2013). Likewise, too many Americans are neglectful to recognize their connection with the Earth and their need to care about the state of the Earth (Fisher 2013). Lester Brown (1995), founder of the Worldwatch Institute and the Earth Policy Institute, states "we live on a planet that is deteriorating ecologically and inhabited by people who are psychologically troubled" (xiv). Here, it is reasonable to assume that there is a significant interconnection between the deterioration of both human mental states and the state of the Earth. The environment we reside in has a direct impact on our psychological state, as the Earth is our true and original home (Hillman 1995, xxiii). However, while studying the environment and ecology are beneficial to healing the Earth, it's going to take something deeper and more philosophical to bring true healing.

Ecopsychology aims to rediscover the innate relationship between humans and nature, and learn how our understanding of the soul has a deep impact on the environment around us and how we treat it (Roszak 1995, 4). For so long, psychology has continued to narrow its focus on the individual, neglecting the influence and impact that the home, birthplace, and origin of the human individual- the world, has on the individual as well (Fisher 2013). The field of psychology cannot limit itself to merely what's inside the human; it must take into account and consider the environment surrounding the human. It is impossible to heal the world without healing the soul, because we cannot confine ourselves to what is "in" us (Fisher 2013, 9). The belief of separation between humans and their environment must dissolve for reconnection and true understanding to occur. I refer to this separation as a kind of dualism in this paper.

James Hillman writes on the blurred line between "myself" and "other," saying that "every sophisticated theory of personality has to admit that whatever I claim to be 'me' has at least a portion of its roots beyond my agency and my awareness" (Hillman 1995, xviii). This is in reference to our deep ties with nature, and the need to view our personalities and selves as deeply interconnected with the world around us.

Theodore Roszak (1995), who was a scholar and professor of history, provides language to describe the ecopsychology movement, writing that:

> Ecopsychology suggests that we can read our transactions with the natural environment- the way we use or abuse the planet- as projections of unconscious needs and desires, in much the same way we can read dreams and hallucinations to learn about our deep motivations, fears, and hatreds. In fact, our wishful, willful imprint upon the natural environment may reveal our collective state of soul more tellingly than the dreams we wake from and shake off, knowing them to be unreal (5).

Furthermore, the state of the world and the state of humanity reflect on each other, and display a causally connected relationship. This relationship is termed biophilia, which is "'the innately emotional affiliation of human beings to other living organisms'" (Roszak 1995, 4). Biophilia is being used by ecologists and psychologists alike to study the bond between humans and nature. This bond is evidenced by the positive effects that nature has on the well-being and mental health of human beings. Studies have shown that being in nature and experiencing all it has to offer can increase positive affect, overall happiness, a sense of meaning, cognitive functions, and memory (Bratman et al. 2019). Experience with nature and interactions with green spaces has also been shown to reduce anxiety, depression, and ADHD symptoms (Bratman et al. 2019). While the size of this paper does not allow me to go into depth over all of the many ways nature experience positively affects human well-being from a research perspective, there are other studies cited in the bibliography that further address the research.[1] This research

[1] See Bratman et al 2019, Jimenez et al 2021, Brymer et al 2019 for more information.

supports the ecopsychology approach in evidencing that the negative state of the world may have a direct impact on the state of the human psyche.

Suffering and destruction are an inevitable aspect of what it means to exist on planet Earth, for plants, animals, and humans alike. Every living being feels the weight of what it means to suffer in unique ways. The healing process begins by defining where the "me" ends and where the "other" begins (Hillman 1995). Determining the boundary lines between self and other or self and nature help us to define the nature of the soul and how it leads to certain behaviors. As humans have climbed up skyscrapers, sprinted to suburbs, and neglected to treasure the Earth, the gap between self and nature has grown exponentially and humans have lost touch with their innate connection to the natural world (Fisher 2013). We have developed a system of dualism, a separation between nature and humans, where the most focused growth and progress happen within the walls of buildings and not within nature. This is a problem because nature is the original home of humanity and the birthplace of creativity and development that led us to where we are today. Fisher (2013) calls humans to "utterly dispel the illusion that we are somehow exempt from membership in the natural world and to overcome the delusion that we could ever be sane while alienated from our own earthiness, from the bodily ground we share with the twigs and mice" (24). The problem that ecopsychology is addressing is that the path to healing does not arise from separating the domains of humans and nature- it arises from viewing the human-nature relationship as deeply interconnected.

It is important to note that moving away from intense dualism does not mean we abandon our individuality or perform a self-betrayal and neglect our own needs, dreams, and desires. It is important that we take into account our own individuality within the context of the larger, interconnected non-human aspects of the world. Rejecting duality does not deny the differences and distinction between humans and others, but rather acknowledges that the inner and outer life are both equally important to have a meaningful and complete picture of life. Limiting ourselves by keeping humans and nature separate limits the expansiveness of our experience and our ability to have an accurate understanding of our world.

Most of the discussion thus far has involved earlier readings in ecopsychology, and much has continued to change and adjust in the field. Developments have been made in recent years, and Andy Fisher, author of *Radical Ecopsychology*, provides a newer perspective on the field and a call to action for future work and study. Fisher (2013) calls ecopsychology "an effort to understand the social links between these two areas of violence, between the violation we recognize as the ecological crisis and the violation we recognize in human suffering" (xiv). Like previous authors, Fisher sees the need for the reconnection between humans and the Earth in order to discover the path to healing for both parties. We must include the world around us as essential to human identity (Fisher 2013, 4).

Fisher sees the task of ecopsychology as a project, a significant and historical undertaking with four specific tasks: psychological, philosophical, practical, and critical. Of these tasks, I will emphasize the psychological and the philosophical tasks as they pertain most to the subject at hand. The psychological task involves acknowledging and seeking more understanding of the human-nature relationship, and viewing, "all psychological and spiritual matters in the light of our participation within the larger natural order. Ecopsychology is still concerned with our suffering and happiness… our search for meaning… our states of consciousness… it just frames these concerns within the fuller, more-than-human scope of human existence" (Fisher 2013, 7). The philosophical task is then concerned with repairing the division between psyche and nature, using phenomenology to study our lived-in, actual experience to make reflections and conclusions about the state of the psyche and the world. Fisher (2013) writes that, "By pressing all of the soul into the human being, we have deanimated the world and simultaneously inflated the significance of the human person" (10). All of our thoughts, emotions, images, and even the majority of our behavior stem from our relation or contact with the outside world (Fisher 2013). In order to discover the path to healing the ecological crisis, we must learn to remove our previous biases or expectations and be open to being changed by our interactions with the world. It requires us to have deep, emotional experiences with the world, and use these experiences to shape our perspective. Through self-awareness we can learn to sit in our thoughts and emotions in the world and allow those to impact our worldview.

The Ecological Crisis: A Religion Problem?

Perhaps the most famous article on the ecological crisis and its connection to Christianity is Lynn White's "The Historical Roots of our Ecological Crisis." White (1967) argues that many of our views on the relationship between humans and nature from a scientific and technological perspective arose from Christian ideals, regardless of whether or not one has a Christian background (7). White (1967) writes "Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not. We must rethink and re-feel our nature and destiny. The profoundly religious, but heretical, sense of the primitive Franciscans for the spiritual autonomy of all parts of nature may point a direction. I propose Francis as a patron saint for ecologists" (9). In this article, White argues that the Christian religious ideals are to blame for the state of the relationship between humans and nature today. These ideals likely stem from Genesis 1:28, where "God blessed them [Adam and Eve] and said to them, 'Be fruitful and increase in number; fill the Earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground.'" (Holy Bible, NIV). This verse has been used in defense of Christians using behaviors that cause harm to the Earth for the benefit of humanity. Some use this verse to defend the attitude that humans are supposed to "rule" over the Earth and that ultimately, their comfort and pleasure is more important than the rest of the creation. Pope Francis (2015) writes in his *Laudato Si'*, "We have come to see ourselves as her [Earth's] lords and masters, entitled to plunder her at will" (2), showing how we have taken verses out of context to justify our behavior[2]. White is condemning this perspective and arguing that these kinds of attitudes are what have developed into this distant and neglected relationship between humans and animals.

Ian Barbour (1997), a premier scholar in the world of science and religion, argues that a proper theology, when it comes to the human-nature relationship, must include reason to protect the environment and preserve its resources (102). White's criticism of religious ideals being responsible for the ecological crisis is rightly justified in Barbour's eyes, and there must be a reconciliation and redefining of what it means to support

[2] See Pope Francis' Laudato Si' 65-75 for Biblical evidence of the human-nature relationship

environmentalism from a Christian perspective. There are many biblical themes and examples that are in clear support of environmentalism. For example, the word "stewardship" has been used by some Christians to justify human ends at the expense of the Earth, however, an accurate interpretation of this word views all of nature as belonging to God first and foremost, because He created it (Barbour 1997, 102). Our job, according to the Bible, is to be responsible for and take care of the Earth (Genesis 1:28, NIV). Barbour (1997) also shows how celebrating nature, due to its inherent value, is a strong biblical theme: God's affirmation of creation in Genesis, animals and creatures being saved during the flood, countless themes in the book of psalms, and Jesus' references to lilies, sparrows, trees, and the seas all demonstrate the emphasis on nature's value in the Bible (103). Jesus' teachings also often emphasize the care and concern that God has for his creation, including both humans and the natural world, which should motivate humans to care for creation.[3] By incorporating these biblical themes of stewardship, celebration, and care for creation, it is possible to offset the damaging views that have stemmed from inaccurate depictions of Christian environmentalist ethics. However, "this requires us to rethink our understanding of the relation of humanity to nonhuman nature and to develop a more adequate theology of nature for representing God's relation to the created order" (Barbour 1997, 280).

As this paper transitions to discussing the Franciscan perspective on the human-nature relationship, it is important to first address claims that Fisher and other ecopsychologists have made in regards to spirituality and community. Many ecopsychologists believe that the path to healing involves healthy connection with spirituality and community. Fisher (2013) highlights this in his book: "'Unless you have some roots in a spiritual practice that holds life sacred and encourages joyful communion with all your fellow beings, facing the enormous challenges ahead becomes nearly impossible.'" (15). Here, Fisher is claiming that in seeking connection both spiritually and communally to those around us, we can better shift our focus to the natural world and towards a path to healing. This connection is found not only within the individual's own dreams and identity, but also through aligning with others and the

[3] Luke 12:6, Luke 12:24, Matthew 6:26

larger world around them. This is done by embracing both the duality between "self" and "other" and the non-duality of the interconnectedness with every being that resides on Earth. The Franciscan approach and the ecopsychology approach to the human-nature relationship posit similarities in the recognition of the state of the current relationship between humans and nature and what is needed to enact change for a better future. Both perspectives seek a unity between humans and nature, a reconnection in the innate relationship, and recognize that there is severe loss and misguidance if this human-nature relationship is neglected. They acknowledge that the destruction that has resulted in the ecological crisis is caused by a lack of relationship between humans and nature. Ultimately, both perspectives call for change through the form of a deep reconnection between humans and nature.

The Franciscan Perspective

The Franciscan perspective of the relationship between humans and nature arose from the ideals and lifestyle of Saint Francis. It is impossible to discuss a theological perspective of nature, or Creation in theological language, without addressing the significant impact that Saint Francis left behind. In fact, Saint Francis was even declared the patron saint of ecology by Pope John Paul II (Appelbaum 2015). Ilia Delio, a Franciscan author who obtained two PhDs in Pharmacology and Historical Theology, writes on Francis' view and attitude towards Creation, and the overall Franciscan spirituality of the Earth and its connection to humans and the Divine. First and foremost, Francis believed that, "Creation flows out of the heart of an infinitely loving creator. Franciscan theology of Creation without Christ is incomplete" (Delio 2003, 5). A Franciscan perspective of Creation sees God as the foundation and Creator of all matter, believes that God's goodness permeates everything in Creation, and sees nature as a means to dwell on the nature and power of God. (Delio 2003, 3). Furthermore, the Franciscan perspective advocates that human beings are created in the image of God, the Imago Dei, as Saint Francis writes, "after making us in Your own image and likeness, You placed us in paradise" (FA:ED I, 82). Francis' understanding of the human person is deeply intertwined with the human person's identity within the image of the Divine and its relation to nature.

St. Francis' view of Creation and his role in Creation stemmed directly from his relationship to God. He believed that everything, from celestial beings to fish, humans to sunflowers, is directly designed and sourced from the Divine (Johnson 2012, 153). Furthermore, Francis saw the transcending beauty from nature as an illustration of the presence of God and a place where God's goodness is displayed in physical form. Because he understood that everything stemmed from the same Divine source, St. Francis recognized every creature and aspect of nature as a brother or sister. This kind of perspective is called 'contuition,' and it's essentially the "ability to see the reality of things in relation to God" (Delio 2003, 5). The ecological self, a term used to describe the potential and ability of humans to connect and identify themselves with the rest of nature, is used in both ecopsychology and a theology of nature. Delio (2008) writes that "in modern-day terms Francis lived out of his ecological self, a wider, interconnected sense of self that is rooted in the fact of our interconnected-ness with all of life" (55). This clarifies a direct connection between St. Francis' view of nature and the modern day perspective of ecopsychology, and the connected understanding over multiple centuries that we must learn to live out of our own ecological selves. Furthermore, St. Francis' theology provided him with a lens through which to view the rest of Creation and his purpose within that same Creation. Francis believed that the kingdom of God did not just exist in the future, but is already existing in the here and now and requires human participation (Delio 2003, 3). By learning to participate with God out of love for nature, we can discover the path to healing the ecological crisis. To find the justice, healing, and peace we seek, we must be willing to be transformed in Christ and see our place in the world as meaningful and connected with the rest of nature.

A Franciscan theology of nature stems directly from the basics of their theology. Delio (2003) writes that "[t]he fundamental relationship between Incarnation and creation leads to the central idea that each and every aspect of creation has absolute dignity because everything is created specifically and uniquely through the Word of God" (6). Everything in creation has intrinsic value because it not only was created by God but it reflects the nature and heart of God. The only distinction between humans and the rest of the created order is that humans have the ability to reason and can have union with God (Delio 2008, 44). Thus, any sort of environmental crisis should also

mean a religious crisis for those who identify with the Franciscan tradition, because of the interconnectedness between humans and nature. Pope Francis (2015), in his *Laudato Si'*, writes that "we have forgotten that we ourselves are dust of the Earth… our very bodies are made up of her elements, we breathe her air and we receive life and refreshment from her waters" (2)[4]. The foundation of Franciscan theology of the human-nature relationship rests on the belief that humans are deeply interconnected with the Earth, and we have forgotten this over time. This view mirrors that of ecopsychology, but with a theistic lens.

The way that St. Francis treated animals and nature reflects a deep love not just for Creation, but the Creator. Many accounts of St. Francis' life include a story of him preaching to the birds, flowers, and trees "as if they were capable of reason" (Dalarun 2016, 24). This demonstrated his ability to see Creation as equals in the kingdom of God and his sincere love for the divine and Creation. Accounts of his life explain:

> "the man of God gushed with the spirit of charity and bore a visceral piety not only toward men, but also even toward mute and brute animals and all other creatures. With what degree of affection do you think he loved the little sheep and lambs, due to the grace of a simpler nature and a likeness to the Lord Jesus represented in Sacred Scripture?" (Dalarun, The Rediscovered Life of Saint Francis of Assisi, 2016, 23).

St. Francis' entire being was filled with love for Creation, and he treated it with the same love he extended towards other human beings. This shows that Francis had an ecopsychological mindset long before the movement ever arose, and saw himself as interconnected with all of Creation. Francis believed that the rest of Creation was not a means to be used to achieve human purposes, but fellow subjects in a wide connection of relationships, and that all living beings deserve equality and life just as humans do (Johnson 2012, 145). Thus, if humans are truly living from their ecological selves and have experienced transformation in God, it follows that they will act with kindness and

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[4] See Pope Francis' *Laudato Si'* in the Bibliography for more detail on the state of the ecological crisis that could not be addressed in this paper.

empathy towards nature (Johnson 2012, 151). For Saint Francis, everything in the natural world was proof of the living presence of God, which drove him to treat nature with such kindness and empathy (Delio 2003, 125).

A foundational aspect of Franciscan theology is stewardship ethics, which obligates "people of faith to learn the basic elements of ecological science, for we cannot discharge this responsibility in ignorance" (Delio 2008, 76). This kind of responsibility includes learning to live life with less consumption, more understanding of the ecological crisis, and deeper empathy for all living things. When we discover that our wholeness is found in our interconnection with all of nature, we are able to tear down the destructive dualism that has created divisions between us and the rest of Creation. Franciscan tradition believes that the world is holy, and "we would not desecrate our chapels and churches; in the same way, the more we nurture this intimate connection to Earth, the more we will be inspired to protect it at all costs" (Paintner 2020, 3). Christians tend to place a deep significance on place, particularly places that reflect Divine significance, such as churches or monasteries. According to the Franciscan tradition, Christians should be just as eager to protect and place significance on nature, due to the intimate and deep connection humans have with Earth.

Ultimately, Franciscan theology argues that contemplative living and a theistic perspective is the way to formulating a more sustainable lifestyle, leading to healing for humans and the Earth. Contemplation in the Franciscan tradition is living a life of reflection and prayer, thinking about the self, God, and the Earth through an introspective and thoughtful lens. It requires giving focus to seeing reality as it is, seeing the beauty of the world as well as the destruction (Delio 2008, 139). The Franciscan lifestyle of contemplation shows how global climate change is not just an ecological issue, it's a theological issue because it requires humans to challenge their perspective of identity, purpose, and their relationship with God (Delio 2008, 112). Franciscan theology shows how deeply interconnected humans are with the rest of Creation, because of their relationship to the Creator. Delio (2008) writes that, "only a life-giving relationship with God can sustain a life-giving Earth. Contemplation can strengthen our hearts, giving us courage to face the fearful effects we humans are having upon the Earth's life-support systems" (124). The practice of thinking deeply about oneself,

spirituality, and the Earth allows humans to remain open and respond to the ecological crisis with an action-oriented mindset.

A Possible Solution to Solving the Ecological Crisis

Combining a theological perspective with ecopsychology provides the best path to healing for humans and nature. Although ecopsychologists recognize the need for a spiritual approach when it comes to the ecopsychology endeavor, they do not take it to the full extent. Most of the authors dance around the idea of a Creator God without outright stating it. Since there is already a space generated in the ecopsychology endeavor for a God and a religious approach, the theory should complete the space and call it what it is- a theological endeavor. It's not surprising that ecopsychology is already a naturally spiritual and religious endeavor, because the ecological crisis is a theological problem. Thus, it requires a theological solution.

The ecopsychology endeavor is already a natural home for a theistic approach, thus, supplementation from the Franciscan perspective on the human-nature relationship may benefit it greatly. However, some argue that ecopsychology can be explained from only naturalistic terms. While this may be partially true, there's a significant benefit to incorporating insights from the Franciscan tradition, because one cannot account for a deep connection with nature in a non-theistic way. Although certain religious beliefs are largely to blame for the crisis according to Lynn White, the solution to the ecological crisis is not throwing out religion altogether. Fixing the incorrect theological views of God, humans, nature, and the relationships between the three is a critical part of the solution to the crisis. Combining ecopsychology with the Franciscan approach strengthens the endeavor to solve the ecological crisis because it cultivates a mindset of gratitude and selflessness to motivate humans to act on behalf of the Earth.

The field of ecopsychology already has natural religious and spiritual tendencies. This is to say that ecopsychology has anti-naturalistic tendencies, and refers to connections outside of the material realm. Multiple of Andy Fisher's tasks in his ecopsychology project include spiritual language. He argues, "by pressing all of the soul into the human being, we have deanimated the world and simultaneously inflated the significance of the human person," (Fisher 2013, 10). Fisher's (2013) solution to this

problem is that we need to "turn the psyche inside out" and see the human soul as interconnected with the rest of the world (9) Traditional psychology techniques insisted on analyzing the human soul without consulting the environment. The claim is that observing humans solely through their output of behavior is a simpler, more "safe" way to conduct psychology. However, it neglects one of the most important aspects of human development and identity: how humans are shaped by and interact with their environment.

It is more spiritual to assume the human soul is not confined within the human being and that there is an interconnection between the human soul and the world soul (Hillman 1995). It requires a step away from the dualism of "me" and "other." The "soul of the world" is an underlying, intangible current of presence that unites all beings, human and nature, underneath the visible reality (Fisher 2013, 10). Hillman (1995) writes "In this world soul the human soul has always had its home" (xxiii). Both Fisher's explanation of the "soul of the world" and Hillman's "world soul" are claiming that the human soul is found not just within humans, but within the world. Much of our understanding of ourselves comes from experience with the natural world and learning how we find our place in the world around us. Using this kind of language exemplifies the anti-naturalistic and spiritual tendencies of ecopsychologists when discussing the human-nature relationship.

We cannot confine our definition of ourselves to our interior- we cannot be sure that our deepest selves do not also exist outside of our material body (Hillman 1995, xix). Fisher (2013) argues that the ecopsychology endeavor is not just a job for normal science, and that a phenomenological approach will better allow us to address the endeavor in a way that accurately shapes our actual, lived-in experience (11). This would require us to have deep, intentional experiences with the world, and use these experiences to shape our perspective. This method of defining ourselves within our experience of the world requires an alternative perspective, largely relying on spiritual and religious terminology. Thus far in the ecopsychology endeavor, the standard scientific view has failed in achieving lasting change in the way people interact with the environment, so we must define a different approach that deviates from what has not been working.

In “Where Psyche Meets Gaia,” Roszak (1995) explains the new and upcoming idea of a “religiously based biophilia.” Biophilia is a term used to describe an innate emotional interconnection between humans and other living beings (Roszak 1995, 4). Both the ecopsychology and Franciscan perspectives advocate for biophilia, and thus, it makes sense that we approach biophilia from a religious perspective when thinking about the relationship between humans and nature while searching for a solution to the ecological crisis. Skeptics in many branches of psychology continue to hold the perspective of doing psychology as a “hard” science, rejecting any sort of religious or spiritual ideals and setting clear boundary lines between the religion and science. However, this perspective leads to a misunderstood and misguided understanding of human nature and the relationship between humans and other living beings. Much of the ecopsychology endeavor is based on data and hard science and it primarily uses scientific language, however, this science is directly related to theological and spiritual approaches to the human-nature relationship. Therefore, in addressing the data on biophilia within the context of a spiritual context, we can strengthen the argument for the innate connection between humans and nature.

Fisher’s (2013) critical task of ecopsychology even further demonstrates the importance of addressing the biophilic data through the spiritual and religious aspects of this field of psychology. He argues that we must develop a transpersonal ecology, with “the idea being that as one develops a sense of self that is both transpersonal and ecological, one will care for the Earth without being morally persuaded to do so because one will identify with it as Self” (Fisher 2013, 18). Identifying oneself with the Earth implies a more spiritual attitude. When someone identifies their “self” with the Earth, they will place much higher importance on preserving it and caring about its future, as one naturally cares for their own future and well-being. Fisher (2013) argues only through this spiritual and psychological growth will humans be able to make advances towards ending the ecological crisis as we know it. What we will then find is that identifying oneself with nature cultivates a mindset that is more likely to take action to preserve the Earth and take care of it.

Ecopsychology is inherently a naturally spiritual and religious endeavor, and thus it would benefit from the addition of Franciscan ideals. Viewing humans and *the rest of*

nature as equally good under the eyes of a Divine Creator enables people to take responsibility and action for their behaviors. It will further push people to take care of the Earth and end the ecological crisis, because they see themselves and nature as equals, created by an all-knowing Divine being. A perspective that holds that both humans and nature are created by God, thus sharing this identity as equals, enables a mindset shift to viewing nature as valuable as humans. Franciscan authors have touched upon this perspective of ecopsychology, and how, "Ecopsychologists believe that one of the reasons depression and anxiety have reached epidemic proportions in today's society is that many of us are responding to the collective heartache that is inevitable for conscious creatures whose habitat is being destroyed" (Delio 2008, 148). There is a collective understanding in these respective fields that our mental health crisis as humans is largely caused by the destruction of creation. This leads to the understanding that there is a deep, innate connection between humans and the rest of creation. Then, through the implementation of Franciscan theology and the contemplation of one's identity in relation to God and nature, we are provided a lens through which true transformation can occur, and a profound, courageous desire for change can arise (Delio 2008, 158). In this way, we can begin to develop a method for pursuing the work that needs to be done in order for healing to occur and become compelled humans to act on behalf of the world around us.

Pope Francis (2015) writes "if we feel intimately united with all that exists, then sobriety and care will well up spontaneously" (11). As discussed previously, Franciscan theology of the human-nature relationship is founded upon the idea that humans are deeply interconnected with nature, with the dust of the Earth. People that feel spiritually uniquely united with the Earth will be motivated to protect and preserve it, and a theistic perspective provides the reason behind why we are so connected to the rest of creation- the Creator Himself. The Franciscan perspective advocates that humans are called by God to change their lifestyles and consumption in order to end the ecological crisis (Francis 2015, 23). There is a certain responsibility placed upon those that believe in God and believe that everything was created by him- a responsibility to care for the rest of creation as they would care for themselves.

By incorporating the Franciscan perspective into the project of ecopsychology, we are cultivating a mindset of gratitude and love towards a generous God, pushing humans towards genuine action in solving the ecological crisis and healing the Earth. When a heart is centered on God and sees spirituality and seeking God as true happiness, it is not self-seeking or self-serving (Delio 2008, 179). Someone that has their heart centered in this way will be more likely to take action to minimize their negative impact on the Earth. St. Francis provided the model for this kind of living as he experienced creation as a constant gift from God and believed that nature was a result of God's generosity pouring out. Thus, he acted from a place of deep gratitude and love, seeing everything as a gift. This perspective directed his actions towards caring for creation (Delio 2008, 174). Franciscan theology sees the environmental crisis as the result of a broken relationship between humans, nature, and God, and it can only be solved when humans have a heart that is centered on God (Delio 2008, 201). Delio (2008) writes that, "only action that flows from a converted heart- informed by contemplation, fueled by love and sustained in community- has the holding power to co-create with God a new world that is just and sustainable for all, including all of God's creatures and future generations to come" (185). Deep thinking, gratitude, and community are all integral aspects to developing a human self that is open to co-creating with God and taking true action to solve the ecological crisis.

St. Francis exemplified through his life that someone with a heart centered on God should be humble, selfless, and motivated to minimize their negative impact on the Earth. Thus, a proper theological approach to the human-nature relationship and solving the ecological crisis involves an understanding of one's ecological self through the lens of a Creator God. The ecological self is defined by its connection to others and requires one feeling a sense of belonging with others and within nature (Delio 2008, 177). A sense of belonging can be felt without the context of a creator God, however, an ecological self that is based on the foundation of a creator God recognizes that "everything is contingent on the generosity of God and thus on the will of God" (Delio 2008, 181). When one recognizes their life and the environment around them as a gift meant to be treasured, they are entirely selfless and just. Furthermore, they are placed in the perfect position to take action to protect and preserve what they belong to. Then,

as one identifies themself as belonging to a creator God, they begin to see the rest of nature as God's own creation, and thus find themselves belonging within the commonality of being created by God. When someone views creation as their own, "taking action to protect it goes beyond mere duty… [they] are moved from the heart to safeguard and protect it in times of need" (Delio 2008, 185). Therefore, if one identifies with a Franciscan view of theology and ecology, they see God's hand within all of creation and it becomes impossible to stand to the side while the health of nature is neglected.

Viewing oneself within the family of creatures created by God cultivates integrity and motivates people to take action to end the ecological crisis not only on behalf of themselves but on behalf of future generations. A Franciscan perspective encourages people to have empathy and care for future generations of all creatures and think about the impact of their efforts beyond their own lifetime. Ultimately, the Franciscan approach enhances the ecopsychological endeavor by providing a sort of moral compass to motivate humans to take action. It also provides a reason for people to care about protecting the environment for the benefit of future generations. Delio (2008) writes, "consuming resources beyond the Earth's capacity to regenerate them is a form of stealing from future generations or other places" (161). Viewing oneself within the family of creatures created by God and seeing future generations as worthy of a healthy Earth enables people to act out of care and concern for those they share Earth with. Pope Francis (2015) writes that in considering the world in relation to future generations, "we realize that the world is a gift which we have freely received and must share with others" (159). It forces people to question the kind of world they will leave behind and the world that future generations will have to inhabit. The Franciscan perspective warns that we will be at fault if we leave an inhabitable planet for our children to inherit, and urges that "we need to reflect on our accountability before those who will have to endure the dire consequences" (Francis 2015, 161). Considering these hard truths will drive us to improve our relationship with nature and take action to make a better world not only for ourselves, but for future generations to come.

It is important, however, to make note that the Franciscan perspective alone cannot lead us to solving the ecological crisis. Modern science and ecopsychology are

able to fill in gaps and expand the Franciscan perspective as new routes of understanding are discovered. Saint Francis did not have the knowledge we have today of modern ecology and psychology in reference to Earth's resources dwindling or the mental health crisis we are currently experiencing. The mutual relationship between the state of the Earth and the state of our mental health has been evidenced by research. Combining the simple humility of Saint Francis' attitude of care towards nature and contemporary scientific knowledge of the situation at hand, we can develop a perspective that leads to true healing for the Earth.

It is clear that we need significant change in our methods and mindset to bring healing and restoration to the ecological crisis. Historically, incorrect theological perspectives are largely to blame for the neglect and destruction of the environment. Lynn White (1967) argues that the solution to the crisis is to do away with religion altogether, however, a more positive way of looking at things and a better path to healing is to incorporate religion in the solution through the Franciscan perspective. By combining the ecopsychology approach and the Franciscan approach, we develop a complete understanding of the relationship between humans and nature and cultivate an attitude that leads to lasting change in the way that humans interact with the natural world. There is no need to throw out religion from the discussion of how to solve the ecological crisis as White argues- in fact, it should not only be included but embodied and fused into the solution. While there is much work that needs to be done to shift lifestyles and mindsets to create a more healed version of ourselves and the world, I propose a start: Saint Francis and his legacy have much to add to the ecopsychology endeavor in educating us to better understand the human-nature relationship and approach the ecological crisis.

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Rise of the Virtual Vanguard:
A Treatise on Post-Digital Governance

J.E. Van Clief

Foreword

Predicting and modeling the future economic and political environment is inherently uncertain. Part of my motivation for writing this is both to lay out the trends myself and others are seeing, as well as invite criticisms from those who read this. Now before you ask “what makes you credible?” and I give some form of justification through my collegiate studies and world travels, I'd rather direct you to the fact that I have been writing this article in collaboration with various Artificial Intelligence (AI) platforms in an attempt to sift through the massive amount of data and writings out there nowadays. I feel I must defend the use of AI as a tool and collaborator, and most likely will have to defend it for the next decade. I believe that by using AI platforms like LLMs to not only explore research but also interpret that data in its own words, it is more than possible for the everyday college student or professor to produce writings and studies that can compete with the best of the best in academics, not only in accuracy but also in critical and predictive thought.

Granted I am still spending hours upon hours reading and studying on my own in order to collaborate and verify the outputs given to me by any Large Language Model, but still I think it important to place great weight on the time cut down by using and working with AI on projects like this. **To me, the way I use AI for writing in economics and politics is the same way mathematicians use calculators to create and solve intense problems.** The invention of advanced calculators saved massive amounts of time and allowed even the everyday mathematician to work on more advanced theories and proofs and increase the level of accuracy at the same time. If you are not using some sort of deep learning software or technology to help your

studies, work, writing, or anything else, it's the same as using only the library to answer your usual “google searches.”

Let me be clear, it's important to read books and know the fundamentals of any field of research, but once you have the groundwork, it makes sense to use the faster and better resource so your time can be spent on advanced topics or critical thinking. Consulting artificial intelligence, particularly Large Language Models (LLMs), for refinement and augmentation of one's writing bears striking resemblance to seeking insights from peers or editors. After conducting rigorous research and formulating initial drafts, I utilize AI models trained on my own writings. This allows for meticulous editing, enrichment, and diversification of content. Detractors of such methodologies might consider this approach no different than seeking the expertise of a seasoned editor. Utilizing technology in this manner is simply a contemporary embodiment of age-old collaborative efforts, modernizing and streamlining the editorial process for the current age.

Also, in a paper about the Post-digital world, it is only fitting that A.I. plays even a small part in its creation. Now that I've given my simple justification on why what you are about to read is accurate and at the very least allows for a greater discourse on the topic, let us move into the predictions that I, academics around the world, and even Artificial Intelligence models have made about our future.

Introduction

In the context of the inexorable march of technology and its pervasive influence on all facets of human life, “post-digital” refers to a paradigm wherein digital technologies have become so deeply embedded and normalized within society that their presence is taken as a given, much like electricity or print media. The post-digital era doesn't indicate a move beyond digital, but rather a transition into a phase where digital technology is no longer seen as new or disruptive but as a fundamental part of the societal fabric. This paper explores how these fundamental changes affect our views of our economics and politics as well as the resulting governance models that may form in future decades.

Post-Digital Governance is specifically the evolution of administrative and organizational structures, policies, and strategies in an age where digital technology is

omnipresent, integrated, and foundational. In this era, the emphasis shifts from the mere adoption and integration of digital tools to the nuances of how they impact societal structures, behaviors, ethics, and broader human experiences. This article delves into examining the societal implications of a world that takes the digital for granted and seeks to navigate the complexities of governance in such a world.

This governance model grapples with new challenges and opportunities:

1. **Ethical:** In a post-digital age, questions around data privacy, surveillance, and the ethical use of AI and algorithms become central to governance discussions. It's not merely about leveraging technology but about understanding its broader implications for individual rights and societal structures.

2. **Digital Inclusivity**: As technology becomes foundational, ensuring equal access and preventing digital divides from exacerbating social inequalities emerges as a pivotal aspect of post-digital governance.

3. **Reinvention of Structures**: Traditional governance models, rooted in pre-digital eras, may need reinvention to be agile, responsive, and relevant in a post-digital landscape. From war to stock markets, our world is and will be greatly molded by our ability to understand this landscape.

4. **Human-Digital Symbiosis:** The post-digital age blurs the lines between the digital and the physical, the machine and the human. Governance in this era must understand and navigate this complex interplay.

5. **Cultural Shifts:** As younger generations, digital natives, come of age in a post-digital world, their perspectives, values, and expectations will shape the direction of governance models.

In essence, Post-Digital Governance recognizes and responds to a world where digital is not an add-on or a separate entity but **is interwoven into the very fabric of existence.** In this work, I will do my best to explain the major technologies from the perspective of these five points, so as to give a better understanding and critical perspective on the future of our global web.

Historical Tenets and Semantics

Adam Smith, with his endorsement of the "invisible hand" and free markets,[5] presented markets as a system where individual pursuits naturally lead to societal benefit; this concept was furthered by David Ricardo's idea of comparative advantage[6] and capitalized on by leaders like Ronald Reagan and Margaret Thatcher. Karl Marx criticized capitalism's inherent inequalities, envisioning communism as an alternative where the means of production belong to the proletariat, elminating class struggles. John Stuart Mill and John Mahnard Keynes and the resistance to their thoughts from Fredicrich Hayek molded Congress members' and CEOs' ideas of what capitalism, markets, and economies as a whole should be well into the modern day.

The economists listed above barely scratch the surface of our historic library of economic thought. Moreover, this list references only slightly the countless political scientists and philosophers who have also taken their bite in the human world of governance. To write deeply on the specific processes of each of these thinkers and their models is not only outside the scope of this paper, but I believe will also create more confusion and debate than is already present. So, instead, I will share my interpretations of their writings as well as criticisms that I believe relate directly to digital governance. The reason for this is not to say something that has not been said, or to rally against a dogmatic way of thought, but rather to frame my perspective of these writings within this article in the first place. When the terms capitalism, socialism, communism, facism, democracy, freedom, or tyranny are used in media and literature today we find they are all nearly interchangeable. For every article that speaks on the freedom supported by our democracy we can find another that speaks on the tyranny of capitalism or the terror and failures of socialism. It is important to sift through the semantics and lay out my interpretations to distinguish them from traditional definitions.

Capitalism: A multifaceted term, most commonly associated with the ideas of Adam Smith and the 'invisible hand'. Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* articulated a vision where individual self-

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5 Adam Smith, *The Wealth of Nations*, ed. S. M. Soares (New York, 2007), 349-350.

6 David Ricardo, *Principles of Political Economy*, 3rd ed., ed. Pierro Sraffa (Cambridge, 1951), 134.

interest in a free market would contribute to societal good. Contrary to popular belief, Smith also voiced reservations about unbridled capitalism, particularly about the concentration of capital and power. He stated, “Whenever the legislature attempts to regulate the differences between masters and their workmen, its counselors are always the masters.”[7] This reinforces the idea that capitalism in its worst form can indeed concentrate power and work against the very idea of a free market. On the flip side, Marx, who sometimes is credited with, but certainly popularized, the actual term of 'capitalism' places it in a much more critical light. He emphasized the control of capital by the bourgeoisie at the expense of the proletariat as the only outcome of capitalism. Intriguingly, both Smith and Marx converge on the idea that if capital becomes too centralized or at least controlled, it ceases to benefit the majority.

Fascism: While historically rooted in twentieth century European movements led by figures like Mussolini and Hitler, it is a term that has evolved and demands contemporary nuance. Traditionally, it is characterized by dictatorial power, aggressive nationalism, and the suppression of opposition, a centralization of power that often bypasses democratic processes in favor of a unified nationalistic vision. In today's multifaceted world, it's essential to understand that these tenets can manifest in both overt political systems and subtler societal dynamics, including the digital realm. While technological advancements like social media platforms offer democratized participation, they can sometimes paradoxically create digital echo chambers, reflecting elements of fascistic uniformity and controlled narrative. Moreover, the balance between national identity and global interconnectivity can lean towards pronounced nationalistic spaces. However, as we reference and employ the term "fascism" in various contexts, it's crucial to handle it with precision, respecting its profound historical significance while acknowledging its multifaceted manifestations in modern sociopolitical and digital spheres.

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[7] Smith, *The Wealth of Nations*, 83-87.

Democracy: Often traced back to the musings of ancient philosophers like Plato and Aristotle. Fundamentally it is about the rule of the many. Aristotle, in his *Politics*, differentiated between various forms of governance where he labeled democracy as the rule of the many but oriented towards the common good. Surprisingly most of these Greek thinkers, including Plato, often critiqued democracy, especially when based on property, honor, or wealth. Plato identified three primary forms of government: kingship, aristocracy, and a third based on merit, or honor (timema), which he termed "timocratic" though commonly mistaken for a form of polity.

"There are three species of polity, and an equal number of deviations from them– corruptions of them, so to speak. The three are kingship, aristocracy and a third based on ownership of property (timema), which it seems proper to call timocratic, though most people call it a polity, the best of these is kingship, the worst timocracy".[8]

In modern contexts, this term has been interwoven with the ideals of freedom, equality, and representation. Yet, its application and interpretation can vary dramatically, depending on who wields power and how they choose to exercise it. For example, the U.S. is called a democracy, but only a small percentage of the voting population actually voted for the last few Presidents; an even smaller percentage actually decided who that president should be.

Communism: Karl Marx and Friedrich Engels laid out the vision for communism in *The Communist Manifesto*[9] as a classless society where the proletariat would own the means of production, eliminating the bourgeoisie-proletariat dichotomy. Marx and Engels imagined a system that would abolish the exploitative nature of capitalism. Ironically, Smith's concerns about concentrated capital resonate with Marx's critiques. Despite their differing ideologies both shared apprehensions about wealth accumulating in too few

[8] Aristotle, *Nicomachean Ethics*, ch.6, 1107a.

[9] K. Marx & F. Engels, *The Communist Manifesto* (1848).

hands. Yet, in today's discussions, when similar worries about extreme wealth concentration are voiced, they are often hastily labeled as “communist.” This knee-jerk reaction oversimplifies a complex issue and overlooks the historical context wherein thinkers from varied ideological backgrounds shared similar concerns. It underscores how modern debates sometimes reduce nuanced arguments to simplistic, ideologically charged labels, neglecting the multifaceted nature of these terms.

Socialism: Socialism serves as a bridge between capitalism and communism. While it shares with communism the idea of state or collective ownership of primary means of production, it allows for individual property rights and, in many cases, a market economy. The likes of John Stuart Mill expounded on this in *Principles of Political Economy*, promoting cooperative production and a society that tempers market forces with social welfare.

Freedom: A term imbued with multifarious interpretations. From Locke's *Two Treatises of Government*[10] emphasizing individual rights and property to Rousseau's *Social Contract*[11] with its focus on collective will, freedom has been the cornerstone of political philosophy. In economic terms, freedom is often synonymous with laissez-faire capitalism, but as Smith and Keynes have shown, unfettered markets can sometimes infringe upon individual freedoms rather than promote them.

Tyranny: This concept was profoundly elaborated upon by Plato in his *Republic*. Tyranny emerges when power concentrates in the hands of one, often at the expense of the common good. In the context of economics and governance, tyranny can manifest when any single ideology or system (be it capitalism, communism, or otherwise) is practiced in its extreme form without checks and balances.

In understanding these terms, **it becomes evident that the boundaries between the concepts are porous.** Institutions like banks, often hailed as pillars of

[10] John Locke, *Two Treatises of Government* (Cambridge, 1988), 202.

[11] Jean-Jacques Rousseau, *The Social Contract & Discourses*, trans. G. D. H. Cole (New York, 1993).

capitalism, can exhibit features that are more socialist or even communist, such as centralized control over capital flow and institutional control of the “means of production”. Such intricacies indicate that the world of economics and governance isn't black and white but exists in shades of gray. The definitions used within this article are neither negative nor positive, and this work accepts the idea that the “economy” and “government” are something far more complex than any single theory could truly account for through all of history.

Post-Digital effects on Fundamentals

The fundamental principles of classic economics and politics revolved around tangible goods, territorial governance, and manual labor. Today's realities, governed by intangible data, digital domains, and intellectual labor, challenge these principles. This fundamental change in dynamic allows us to not only look at past theories with a different perspective, but also to realize the notion of entirely new enterprises and movements within the political and economic world. Below is not an exhaustive list of paradigm shifting technologies, but these nonetheless are the ones that I will focus on as societal shaping forces.

There are three major technologies that are becoming ingrained and will eventually be fundamental in our society as time progresses. *Artificial Intelligence (AI)* is transforming our understanding of labor and value, subjects close to both Smith and Marx. Since AI can produce without human intervention, does it diminish the value of human labor as Marx understood it? Or does it serve as the ultimate free-market tool, amplifying Smith’s vision of limitless enterprise?

Blockchain, with its decentralized nature, offers a decentralized perspective on governance and trade. It aligns with both Marx's idea of communal ownership and Smith's notion of a free market that operates without central intervention. Both of these technologies are industry shifting on their own, however when paired with the powerful and transforming digital market technology that is *Social Media*, an entire new dimension of markets is created.

In the following section, I will expand on each of the aforementioned technologies and their effects now, as well as how they may grow as the future world power structures shift.

Social Media and Gig Economics

The growth of the Internet has heralded many transformative technologies, but none have permeated daily life quite like social media. I want to discuss social media specifically, as I believe some have overlooked the profound shift it has caused in the nature of labor, value creation, and the broader economy.

Traditionally, value in labor was extracted directly from the fruits of one's efforts – a product crafted, a service rendered. However, social media has introduced an additional layer of value generation: the act of documenting and sharing one's labor. For instance, an artisan might sculpt a piece, and while the piece itself has intrinsic value, a video capturing its creation and the subsequent interaction with audiences on platforms like YouTube or TikTok can yield additional, sometimes even greater value, and not just in terms of currency. This dynamic introduces an interesting juxtaposition between the physical product of labor and its digital representation.

One recent trend is filming and sharing videos of actual hard labor, like the work of pressure washers or even housing contractors. Some of the highest paid pressure washers are individuals who have begun pressure washing entire driveways or decks completely for free. By filming this process and sharing the results on social media, some are able to recoup their costs on labor tenfold what they would have made if they simply just charged the individual a standard quote. Some of these pressure washers or contractors have over 1 million followers on a single platform like TikTok. Individuals with that large of a viewer base can make upwards of $20,000[12] a month from ad revenue alone or a sponsorship on a single video. That's not including the fact that one video can be posted across multiple platforms.

Herein lies a dual economy that blurs the lines between Marx's and Smith's philosophies. In this emerging paradigm, individuals can effectively contribute to their local, micro-economy, often without direct monetary compensation or any compensation at all, as they would in a Marxian model of communal benefit. The act of sharing or even giving away one's labor (or its results) for free at this level becomes

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[12] D. Whateley, "How Much Money Do TikTokers Make?" *Business Insider*, September 14, 2023, https://www.businessinsider.com/how-much-do-tiktokers-make, accessed December 6, 2023.

feasible because there is now an external, digital macro-economy — grounded in social media platforms — where significant revenue is generated. This digital revenue is primarily sourced from advertising, endorsements, and partnerships. As of 2022, YouTube's Partner Program had shared over $30 billion with creators, artists, and media companies, as noted in a YouTube official blog post. Further these platforms have now become markets in themselves, in which those involved can sell products related to their labor simply by using other companies' capital and selling their "market reach".

This evolving landscape has also birthed a "prosumer" (producer-consumer) economy. Workers are not just producers but also consumers of others' digital content. They offer their labor and its digital portrayal for free or at reduced costs, driving down prices in the traditional market, while profiting from a separate digital viewership-driven market. A carpenter might not charge for a furniture repair but earns revenue from the video tutorial of the repair process. This intricate interplay between consumption and production, physical labor and its digital shadow, allows for an entirely new dimension of "digital railroads" and "shipping lanes" for the value within a market.

The interesting paradox here is how this model marries the capitalist incentive with a communal ethos. By sharing their work, these modern digital laborers are essentially redistributing value, aligning with Marx's vision of a worker-centric economy. Simultaneously, the capitalist machinery—advertising, branding, and monetization—allows them to derive substantial income, reminiscent of Smith's free-market principles. This synthesis suggests a novel economic model where **capitalist structures are employed to achieve communal ends**.

In *Platform Capitalism,* Srnicek identifies five types of platforms: advertising (Google, Facebook), cloud (Amazon Web Services), industrial (GE), product (Spotify), and lean platforms (Uber, Airbnb).[13] Each type of platform had its distinct profitability model. For instance, Facebook's advertising revenue exceeded $84 billion in 2020, and Amazon Web Services brought in over $45 billion in net sales the same year. These platforms all find themselves working on the fundamental that is the community, or at

[13] Nick Srnicek, *Platform Capitalism* (Cambridge, 2017), 46-48.

the very least a market within the company. By allowing others to make money within their company, rather than only offering products to buy outside of it, these networks become more and more interconnected through a virtual community.

Speaking purely about the benefits of this expansion would be shortsighted. As this digital *commu-capitalist* market begins to expand and becomes more woven into the fabric of world markets, challenges will absolutely present themselves. The volatility of digital platforms, the unpredictability of audience preferences, and the potential for oversaturation means that while many can benefit, not all will succeed in this digital arena. Furthermore, the very platforms enabling this economy wield immense power, raising questions about centralization and control in an era that promises decentralization. With a few tech colossi holding dominion over vast digital territories, the zeitgeist may usher in policies to dismantle such monopolies, sowing seeds for greater competition and innovation, thereby echoing a post-digital renaissance of decentralized power structures. In reaction to these regulatory dismantlers, we may see the innovation of more decentralized networks that are built on the foundational stepping-stones that companies like Facebook, Twitter(X) and TikTok have created.

Legal frameworks have also been evolving to address the multifaceted implications of digital platforms on user rights, data privacy, and corporate interests. For instance, in the European Union, the Digital Services Act (DSA) is a legislative endeavor aimed at instilling a balance by imposing new regulations on content moderation and user interactions on digital platforms. The General Data Protection Regulation (GDPR) was created with the focus of safeguarding user data, affording EU citizens control over their personal information while delineating the responsibilities of data-collecting entities.

The tussle between Meta (the parent company of Facebook, Instagram, and WhatsApp) and the U.S. government over a privacy order exemplifies the ongoing discourse on corporate accountability and user privacy. The Platform Accountability and Transparency Act (PATA) is a legislative proposal in the U.S. aiming to enhance transparency and accountability of digital platforms, indicative of a broader legislative trend to ensure a harmonious digital ecosystem.

The exigency of *Content Moderation* will come to the fore, as it already has with the recent controversies of figures like Donald Trump on Twitter and extremist groups like ISIS being given a digital platform. Censorship and the ability of both companies and countries to enact it comes into question. Societies are grappling, and will continue to grapple, with the rising tide of misinformation and extremist rhetoric spread by these Social Media networks. It's conceivable that a regulatory harness will be necessitated; however, with the intertwining of global markets, private data, and individual freedoms within these networks the line between tyrannical control and healthy freedoms will become thinner.

As digital behemoths amass unprecedented affluence, a clarion call for Digital Taxation is on the anvil. Nations, in their quest for fiscal equilibrium, might recalibrate their taxation strategies, ensuring a just and proportionate levy on these digital entities, aligning their economic contributions with their vast societal influences. Conversely, the exploitation and extraction of wealth from a decentralized network of workers could lead to unrepresented taxation or the burden of taxes being passed yet again from corporation to consumer. This leads us into the broader market of decentralized labor, also known as the *gig economy*.

The Gig Economy

The *gig economy* refers to a labor market characterized by the prevalence of short-term contracts or freelance work, as opposed to permanent, full-time jobs.[14] It encompasses a wide array of sectors, including transportation (e.g., Uber, Lyft), accommodation (e.g., Airbnb), and various online platforms that connect freelancers with clients seeking specific services (e.g., Upwork, Fiverr). The gig economy's growth can be attributed to the widespread adoption of the internet and mobile devices as not an addition but a necessity within the labor market.

According to a 2019 report by the World Economic Forum, the digital economy would account for more than 60% of global GDP by 2022. Mind you this report was

[14] S. Vallas and J.B. Schor, "What Do Platforms Do? Understanding the Gig Economy," *Annual Review of Sociology* 46 (2020): 273-294.

done before the recent boom of Artificial Intelligence in the mainstream market.[15] Workers, particularly millennials and Gen Z, are increasingly seeking more flexible work arrangements, better work-life balance, and opportunities for personal and professional growth. These desires were pressed even further by the COVID-19 outbreak and the massive paradigm shift of nearly all companies to provide digital options of some sort. Because of this, businesses have been turning increasingly to gig workers to cut costs, while workers have been forced to take on multiple jobs to make ends meet. Some of the potential benefits of a gig or freelance-focused economy include the following:

Increased labor force participation: By offering more flexible work options, the gig economy and flexible work structures can attract individuals who might otherwise be excluded from the labor market, such as stay-at-home parents, people with disabilities, and retirees.

Enhanced productivity: Flexible work arrangements can improve employee productivity by reducing stress, allowing for better work-life balance and enabling employees to work during their most productive hours.

Greater innovation: The gig economy fosters innovation by creating opportunities for collaboration between workers with diverse skills and expertise, enabling businesses to tap into a broader pool of talent.

However, these trends also pose several challenges, such as the following:

Job insecurity: The gig economy and flexible work structures can lead to increased job insecurity, as workers may not have access to long-term contracts, benefits, or stable income.

Exploitation and inequality: Workers in the gig economy may be susceptible to exploitation due to a lack of labor protections, such as minimum wage and overtime regulations. This can exacerbate income inequality and contribute to the rise of the "working poor."

Loss of social connections: As more people engage in remote work, there may be a decline in face-to-face interactions, leading to a potential loss of social

[15] World Economic Forum, "Our Shared Digital Future: Responsible Digital Transformation—Board Briefing," (2019), 5, https://www3.weforum.org/docs/WEF_Responsible_Digital_Transformation.pdf, accessed December 6, 2023.

connections and camaraderie among colleagues. This may seem inconsequential at first glance; however it can be shown the social version of the "tragedy of commons" can lead to disastrous results.

To ensure that the growth of the gig economy and flexible work structures yield positive outcomes for all stakeholders, policymakers, businesses, and workers must develop strategies to address the associated challenges. Policymakers could consider extending labor protections, such as minimum wage subsidies, (not price floors, as elucidated by Sir Christopher Pissarides, who emphasized the importance of this distinction in addressing labor market frictions[16]), overtime pay, and access to benefits to gig workers and those in non-traditional employment arrangements.

This gig economy increases reliance on digital platforms to allow for faster and more efficient movement of goods and capital into a more decentralized network. In reaction to this decentralization, China and Russia are attempting to globalize the world in a different direction. China is currently using a system and app called WeChat, which "has over 1.24 billion monthly active users and accounts for 34% of China's total data traffic."[17] All of this data traffic and the use of business and peer-to-peer communication occurs over the app. Because most other social media platforms, including Facebook, are banned within China, WeChat has become the go-to source within China for business communications. Almost a third of China's GDP was accounted for by WeChat in 2016. In 2019 WeChat was responsible for direct economic revenue upwards of CNY 920.4 billion($126.09 billion USD) and indirect economic revenue estimated at CNY 1130.1 billion($154.8 billion USD).[18] Russia has also begun to tap into this market:

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[16] C. A. Pissarides, "Equilibrium in the Labour Market with Search Frictions," *The American Economic Review* 101,4 (June 2011): 1092-1105.

[17] Ting Cong, Zhichao Fang, and Rodrigo Costas, "WeChat Uptake of Chinese Scholarly Journals: An Analysis of CSSCI-indexed Journals," *Scientometrics* 127 (2022), 7092.

[18] A. Zheng, "Analysis on the Social and Economic Impacts of Internet Platforms : (Based on Survey Data from WeChat (China) during 2019-2020)," *2020 ITU Kaleidoscope: Industry-Driven Digital Transformation (ITU K)* (Ha Noi, Vietnam, 2020), pp. 1-6, doi: 10.23919/ITUK50268.2020.9303187.

"Sberbank, Russia's largest bank, became the first online retailer in Russia to accept WeChat pay."[19]

With Russia allowing this industry to expand into its economy, it can circumnavigate much of the financial global market. This creates a level of independence while at the same time allowing for the spread of Chinese platforms into Russia. Other nations are beginning to adopt this idea as well. These regulations and governance tactics will still have to contend with the traditional resistance to the consolidation of control. Will the markets in a post-digital economy require as much supervision? Are they more susceptible to exploitation or more resistant to it? Some answers to these questions come in the form of decentralized networks, known as blockchain networks.

Blockchain

In my high school years, I became acquainted with blockchain algorithms, particularly while mining Bitcoins on a gaming computer I had built. In 2012, from my mother's house, I collaborated with a mining collective, amassing 248 Bitcoins, which I frivolously spent on gaming equipment. Although I perceived myself as affluent with my newly acquired gadgets, I lacked foresight into the financial implications of my holdings. Overwhelmed by my naivety and the niche nature of cryptocurrency at the time, I scarcely shared my endeavors. Regrettably, personal adversities in 2012 diverted my attention from cryptocurrency exploration. To my astonishment, by 2017, the value of Bitcoin surged to over $70,000 per coin, indicating that my once-owned 248 Bitcoins could have been worth an astounding $17,360,000 US dollars. Instead, I had only some decent keyboards and headphones.

Looking back, this experience has given me a perspective very few in my position have. From the view of academic study and future molding of our society, I was fortunate enough already to have witnessed and been immersed in the beginnings of the digital economy that I write about in this very paper. This gave me the confidence to study deeper in order never to make a multi-million dollar mistake like that again. It

[19] J. E. Hillman, "China and Russia: Economic Unequals," Center for Strategic and International Studies (July 15, 2020), 6, https://www.csis.org/analysis/china-and-russia-economic-unequals, accessed December 6, 2023.

allowed me to ignore the many criticisms that were based not on data and academic study but simply out of ignorance and dispassion.

Understanding Blockchain, the fundamental technology behind Cryptocurrency and NFT's, does not come naturally to most. This is no fault of their own, as with all new technologies, the mass adoption and more importantly mass understanding of them takes time. This adoption is further hindered by the overwhelming number of scam artists, greedy business owners, and shady legal practices within the blockchain space.

Digital currency has a large base of academic work to it. Minting currency by leveraging cryptography algorithms was developed by the National Security Agency in a 1996 paper titled "How To Make a Mint: The Cryptography Of Anonymous Electronic Cash". [20] This algorithm and system was the base that the pseudonymous individual (or group) known as Satoshi Nakamoto used in a 2008 white paper titled "Bitcoin: A Peer-to-Peer Electronic Cash System."[21] This paper laid the foundation for the development of Bitcoin, one of the most well-known applications of blockchain technology. In the white paper, Nakamoto proposed a decentralized digital currency system that enables peer-to-peer transactions without the need for intermediaries, such as banks or payment processors. Bitcoin's underlying blockchain technology attempts to ensure the security, transparency, and immutability of transactions. However, this technology has been approached with the age-old skepticism that surrounds all new technologies.

Examining the adoption of internet technologies in the 1980s and 1990s offers a way to conceptualize this skepticism. Just as the early internet was met with skepticism and resistance, so too is blockchain technology on its path to widespread consumer adoption. People were wary of the "internet" or "world wide web" because they were unfamiliar with its workings and how it could be used. They were also concerned about security and privacy, as well as the potential negative impacts that the internet could have on their lives, leading to an abundance of concerned questions. "How am I to know

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[20] Laurie Law, Susan Sabett, and Jerry Solinal, "How to Make a Mint: The Cryptography of Anonymous Electronic Cash," *American University Law Review* 46, no.4 (April 1997): 1131-62.

[21] S. Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," (2008), https://bitcoin.org/bitcoin.pdf, accessed December 6, 2023.

that the Email I'm receiving is coming from the person I want to talk to?" "What is an Email to begin with and how could you possibly send it instantly without issues?" "Isn't the world going to end when all the computer clocks hit a minute after 1999 December 31st 11:59?" This last one actually had a small amount of truth behind it that led to millions of dollars being spent to fix programming issues.

The internet changed the fundamentals of how we transferred information, and thus the fundamentals of our society began to change as well. In this exact way many people today are skeptical of blockchain technology because it is a relatively new and complex system. They may be concerned about the security of their personal information and worry that the technology could be used for illegal activities. In many cases it currently is. Additionally, some people may be hesitant to embrace blockchain technology because it has the potential to disrupt traditional business models and industries.

These same arguments were, and still are, made about the very technologies we use in our everyday life. Regardless, how humans use technology for bad or for good are not reasons to ignore research into these technologies, and blockchain is no exception. The fundamentals are yet again changing for our society through the advent of new technology, and with this fundamental change so must our theories of the future adapt, not only economically, but also politically, psychologically, and even culturally.

On The Dimensionality of Economics of Blockchain

Before I give details on how Blockchain technology operates, I think it's important to get in the right headspace to understand it conceptually. It is fundamentally different from anything we as humans have used before. Just as ships, railroads and the internet added new dimensions in which to move goods and information, so does the conception of Blockchain. Businesses built before the invention of railroads, before the invention of the internet, and finally, before the introduction of Blockchain, all behaved and worked fundamentally differently before each new technology was introduced.

The changes introduced by these new technologies can be understood as the Third, Fourth, and Fifth dimensional movements of goods and information. I am using dimensional terms due to the vertical and horizontal layering of technology and

businesses within a market. Before the widespread use of railroads or ships, businesses operated mainly in **third dimension means**; that is, the physical movement of goods and information relied on horse-drawn carts or what could be brought on foot. Profit was made only in the immediate movement and sale of goods, and there was only small value to be found in the ability to move and transport these goods to the larger populace.

The slow speed of early transportation and communication limited the size and scope of markets and made it difficult to coordinate activities over large distances. With the advent of railroads or shipping routes, we find a distinct shift in commerce, not only from the speed at which goods and services could be moved but also how humans fundamentally looked at selling these goods and services. Shipping and transportation became an even greater focus, to the point that entire empires controlling the markets were built around not just selling of goods but also the transportation of them as part of the market model.

The East India Trading Companies, the Vanderbilts and Flaglers of these generations created new ways of thinking about business and realized the money was in movement, not just in production. Profit could be extended beyond merely the good one was selling. In fact, part of the value of the good lay in how far and easily it could be transported. Goods that required longer travel thus sold for more. This development remained still within a “three-dimensional view” of movement, but it began to shift into the fourth. This movement into the vertical and horizontal integration of business continued through much of the 20th century and ended up defining the basics of what it meant to be a “successful” company.

With the invention of the internet, we see this shift into a **fourth dimension of movement**: that is, into the *virtual* movement of goods and information. The internet made it possible to communicate and conduct transactions with anyone, anywhere in the world, in real-time. This revolutionized the way businesses operated and allowed for the creation of new business models, such as e-commerce, which led to the overwhelming success of companies like Amazon or Alibaba.

Now a single company can garner value from a product not only in the product itself, or in how fast one can move and sell it, but even further in the marketing and selling of that product through the digital space. Digital space thus becomes a place of

profit in its own right. Through marketing and distribution, the value of a website and the products sold on it combine. This is the fourth dimension in which value is created or moved when compared to previous "modes of transportation". The developers and leaders within successful e-commerce companies understood that the internet was the new *railroad* and *shipping lane* of the early 2000s and ensured their models and companies could capitalize on it.

Each push into a new dimension of value and movement was preceded by the subsequent elimination of the "middleman". With railroad technology, instead of paying others to move and ship goods or rely on slow methods of transport, companies could purchase train-cars themselves or work together on railroads to move their own goods or even make their own railway company whose only job was transportation; they didn't even sell traditional goods. Then with the internet, instead of a production company relying on other stores or businesses to sell and market their goods, they could simply use the internet to create their own "store front" and sell to a world market directly, while still producing profit and using the previous dimensions of transport at the same time. Combining approaches exponentially sped up the ability to reach customers and move value, yet again slowly pushing out the middleman of the previous dimension of the market and creating a new path in which to pursue profit. Paypal, Zelle, and other apps or companies streamlined the movement of money and were the first step of the move into the fifth dimension, yet these services still required the verification of banks and institutions to hold that money.

With the advent of blockchain technology, businesses are moving into this fifth dimension of value and transportation: that is, the secure and decentralized movement of goods and information as well as the currency used to purchase them. By removing even the need for a financial institution, like a large bank, to control the movement of money to ensure funds and goods are moved, more individuals and people can connect, control, and sell not only goods but even the currency used to purchase them, on a massive scale.

The reason this is possible (and was not before) is due to finding decent solution to both something called *The Byzantine Generals' Problem* and a double-spending issue. The former is a classic problem in distributed computing that illustrates the

challenges of reaching consensus in a decentralized network. It entails the question “How can we all agree on something if we can’t talk each other you directly?” Imagine a group of generals who need to coordinate an attack, but they can only communicate through messengers. Some of the generals might be traitors who want to sabotage the attack by sending false messages. The challenge is to develop a communication protocol that allows the loyal generals to agree on a common plan, even if some messages are corrupted by traitors. Blockchain networks address this problem through consensus mechanisms such as “Proof of Work.” This mechanism allows nodes (computers) in the network to validate transactions and agree on the state of the Blockchain (the entire ledger), despite the potential presence of malicious actors (individuals who want to steal, fake or control transactions). It thus permits the creation of decentralized networks that can securely store and transfer information and assets without the need for intermediaries. With the lack of a "middle man," small companies or even individuals have the ability to share, control, and move information and assets without the need for a financial roadway that a bank or other financial institution would usually build within a market. This allows the development of entirely new markets that can connect in ways that were nearly science fiction just a decade ago. Now writing this, I realize that the question “what is Blockchain?” may still not be entirely clear to those who feel uncomfortable within mathematical or technological space. I will attempt to explain in a more interdisciplinary way.

Blockchain can be described as a decentralized digital ledger—“ledger” simply being the term for a record book—that records transactions across a network of computers (or phones) known as nodes. Each node in the network has a simplified copy of the entire Blockchain, which is constantly updated as new transactions occur.

This decentralization ensures that no single entity has control over the information, making the system more secure and resistant to tampering. Imagine a spreadsheet that is duplicated across a network of computers. Each time a new transaction is made, it is added to the spreadsheet and verified and approved by the network of computers. This process creates a chain of blocks, each containing multiple transactions, hence the name "Blockchain". Once a block (again think of a "block" simply as information) like a file or transaction, is added to the blockchain, it is

extremely difficult to change or delete its contents (this secure cryptographic method is based on the SHA-2 algorithm developed by the NSA as mentioned earlier). This is because each block is linked to the previous one, forming a chain of blocks that represents a complete history of all transactions since the start of the network.

In order to make changes, a large portion of the network would need to agree and update the information through its verification method. This is what creates the consensus algorithm known as "Proof of Work," used by many blockchain networks, including Bitcoin, to validate transactions and secure the network. In this system, nodes in the network, called miners, compete to solve complex mathematical problems that require significant computational resources. The first miner to solve the problem gets to add a new block to the chain and is rewarded with newly minted cryptocurrency. This process is known as mining and is the source of all the stories on the news and internet about “crypto miners.” This mining is an important process that both creates value in the currency itself and combats the inflation of the currency.[22] Proof of Work not only ensures that transactions are validated but also discourages malicious activity (creating a fake chain, stealing money, making false transactions), as any attempt to alter the Blockchain would require enormous computational power and be economically infeasible. In an interesting way this actually *incentivises* the need to put computational power and effort into mining honest nodes over malicious activity due to it simply being more profitable to put time and effort into the chain itself, rather than to try to disrupt or steal from it.

The transparency and security of Blockchain technology allow us to explore a whole new concept of economic systems and models, including cryptocurrencies, supply chain management, and voting systems. The key advantage of Blockchain is that it provides a secure and in most cases tamper-proof way to store and transfer information without the need for a central authority. This is not to say that a central authority needs to be removed, but rather that the need for a middleman or traditional authority is not necessarily required for a system to run effectively. This means we can create new and more efficient models around this fundamental change that do not require a

[22] Note: I recommend reading Satoshi’s Bitcoin article mentioned earlier to better understand its anti-inflation capabilities.

complicated bureaucratic system to handle the human element of self-interest. Such capabilities can be used to create voting systems that can't be manipulated. It may lead to the removal of all banks or at the very least banks that are not controlled or run by outside interest, or perhaps even the complete transparency of money within the realm of journalism and politics. It permits users not only to see and track where information comes from but also to track where the money is flowing, and, in many cases, it allows the consumer to control where funds go. Some analysts insist that block chain is supportive of communist or socialist governments, but some also support the notion that this system may be the purest form of a "free market" in existence.

By removing the control of money and financial value from even governments and banks and giving it to the larger populace as a whole, Blockchain technology creates not only a market for goods but also an open market for the currency used to purchase those goods. Perhaps one of the ways to deal with the human element is by removing it.

Artificial Intelligence

The journey of artificial intelligence (AI) is not solely a tale of the 21st century, but has roots deeply embedded in the philosophical musings and technological foresight of yesteryear. While many believe that discussions about thinking machines began in the mid 1900s, one of the earliest thinkers to touch academically on the subject of machine cognition was René Descartes. In his 1637 work *Discourse on Method*, Descartes posited that animals were akin to machines, moving and operating based on intricate designs but devoid of thought outside of their “organs” or capacities as an animal. However, he also asserted that human made machines do not possess the ability to utilize *language* meaningfully or to reason through situations: the characteristics he believed defined thinking beings. He also outlined two tests from this train of thought, one of the which is laid out as follows:

> If there were machines bearing the image of our bodies, and capable of imitating our actions as far as it is morally possible, there would still remain two most certain tests whereby to know that they were not therefore really men. Of these the first is that they could never use words or other signs arranged in such a manner as is competent to us in order to declare our thoughts to others: for we may easily conceive a machine to be so constructed that it emits vocables, and

> even that it emits some correspondent to the action upon it of external objects which cause a change in its organs; for example, if touched in a particular place it may demand what we wish to say to it; if in another it may cry out that it is hurt, and such like; but not that it should arrange them variously so as appositely to reply to what is said in its presence, as men of the lowest grade of intellect can do.[23]

Furthering the discourse, Lady Ada Lovelace, often regarded as one of the world's first computer programmers, made observations on Charles Babbage's Analytical Engine in the 1830s. In her "Note G", she famously remarked that the Engine and machines like it “have no pretensions to originate anything. It can do whatever we know how to order it to perform.”[24] This assertion emphasizes the deterministic nature of early computational devices, contrasting them with the potential capabilities of truly “free thinking” machines.

It was Alan Turing who offered a more concrete foundation for artificial intelligence in the 20th century. His paper “Computing Machinery and Intelligence”[25] introduced what is popularly known as the Turing Test—a measure to determine a machine's capability to exhibit intelligent behavior indistinguishable from that of a human. Turing's contemplations were groundbreaking, setting the stage for the actual development of AI systems in the decades that followed.

Modern artificial intelligence has evolved substantially from these philosophical underpinnings. Today's AI models, especially the likes of Large Language Models (LLMs) and the Generative Pre-trained Transformer (GPT) series, function on intricate algorithms and vast datasets. GPT models, like ChatGPT, operate based on deep

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[23] René Descartes, *Discourse on the Method of Rightly Conducting One’s Reason and of Seeking Truth in the Sciences*, trans. John Veitch (New York, 1901), https://www.gutenberg.org/cache/epub/59/pg59-images.html, accessed December 6, 2023.

[24] A. A. Lovelace, “Translator's Notes to Sketch of the Analytical Engine Invented by Charles Babbage Esq. by L. F. Menabrea,” *Scientific Memoirs* 3 (1843): 666-731

[25] A. M. Turing, “Computing Machinery and Intelligence,” *Mind* 59.236 (1950): 433-460.

learning neural networks, which are designed to simulate the structure and functionality of the human brain to some extent. These models are “trained” on diverse textual information, enabling them to generate coherent and contextually relevant responses or content.

The advancements from Turing's initial propositions to contemporary AI architectures like ChatGPT are astounding. These modern models do not just follow deterministic responses but can generate novel content, making decisions from myriad possibilities based on their training—bridging and, to some extent, closing the gap of Lady Lovelace's deterministic machine and the multifaceted human cognition Descartes emphasized.

Other Artificial Intelligence models developed under Google's *DeepMind program*, through AlphaGo and its successor AlphaZero, showcase an astonishing level of advancement. AlphaGo famously defeated the world champion Go player Lee Sedol in 2016, but its capability extended beyond just mastering the game's complexity. The AI system utilized a combination of machine learning and tree search techniques, coupled with extensive training from both human and computer play, to devise strategies unforeseen in the Go world. However, AlphaZero went further by teaching itself to play games like chess and Shogi, alongside Go, without prior knowledge, achieving superhuman performance within mere hours. Such spontaneous strategy generation and self-learning show an unexpected complexity of the system.

IBM's Watson is renowned for its victory in *Jeopardy*, but its real-world applications showcase a wider spectrum of capabilities. Watson is employed in sectors like healthcare for decision-making support, using its ability to analyze vast databases for relevant information. The capacity to sift through massive amounts of data, understand context, and provide reasoned analysis demonstrates a form of problem-solving consciousness.

The promise of AI lies not just in its computational prowess but in its potential to recalibrate industry standards. According to a 2020 report by PwC, AI's infusion into the global economy might culminate in contributions exceeding $15.7 trillion by 2030,

underscoring its transformative capabilities.[26] By automating tasks that previously consumed hours, individuals can divert attention to creative pursuits, akin to how calculative tools have transformed numeric processing. At a macro level, the operational dynamics of entire sectors, from creative writing to financial analysis, are becoming entirely dependent on the capabilities of advanced algorithms.

For Marx, capitalism's relentless pursuit of profit invariably pushes it toward the maximization of efficiency. This efficiency often comes at the expense of the labor force, as capitalists seek to minimize variable costs, with wages being a prime target. In volume 1 of *Capital*, Marx elaborates on the concept of the "organic composition of capital," emphasizing how technological advancements, or "constant capital," are adopted to reduce reliance on labor, the "variable capital."[27] In essence, by substituting labor with machinery, capitalists aim to boost productivity while curtailing wage-related expenses. The increasing mechanization, Marx posited, would intensify the exploitation of the working class, leading to a growing disparity in wealth distribution—a phenomenon he termed the "law of increasing poverty."

Transposing this to our modern era, the rise of AI and automation can be seen as the apotheosis of Marx's predictions. In a world dominated by digital technology, AI becomes the ultimate machinery, minimizing human intervention to unprecedented levels. Yet, while this streamlines processes and augments profitability, it also resurrects Marx's concerns about labor displacement and deepening socioeconomic inequalities. The capitalist impetus to replace human labor with more efficient, cost-effective AI systems reflects Marx's foresight into the system's inexorable dynamics. The specter of job displacement looms large. Automation's track record, illustrated by the obsolescence of roles like elevator operators, evinces this. However, while such roles wane, new ones emerge, reiterating the cyclical nature of economic evolution. Automation, while reducing certain tasks, catalyzes new employment avenues around the very technology that rendered initial jobs redundant.

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[26] PricewaterhouseCoopers International Limited, "Potential Economic Value of AI," (2020), 1-2.

[27] Karl Marx, *Capital*, vol.1, trans. Ben Fowkes (London, 1992), 43-65

The effect on the job market will be a commentary held well into the next few decades of post-digital society. Yet there is a larger and I would argue more pressing conundrum which is that of conscious AI or at the very least an AI so advanced many argue for its consciousness, **and thus its rights**. I aim to spend only a few words on the debate surrounding conscious AI, as this debate would require more than an article to address properly. The main thrust of my argument, however, isn't to affirm conclusively or dispute whether AI can achieve consciousness. Instead, I emphasize that, from a governance standpoint, an *unequivocal* answer might be unnecessary. The pivotal issue is the *populace's perception*. When a notable segment, or even a majority, believe in the sentient nature or rights of robots, then governance — especially within a democratic framework — will be compelled to confront the topic of robot rights.

Something similar has already occurred among the viewpoints on whales and dolphins. Recognizing the complex cognition and social structures of cetaceans, the Declaration of Rights for Cetaceans emphasizes their status as non-human "persons."[28] Such acknowledgment has led to tangible policy shifts, as seen in India's decision to ban dolphins from aquatic zoos, viewing their captivity as a form of enslavement. These developments underline the growing global discourse and concrete actions surrounding the rights and personhood of dolphins and orcas. Further, protests advocating animal rights have escalated to the formation of radical factions deemed "eco-terrorists" who have certainly affected corporations and governments alike. It seems reasonable, given that trajectory, to predict that similar ideologies and groups will surface in the post-digital era concerning the ever more "human-like" robots with whom we surround ourselves.

If we create and/or acknowledge AI consciousness, we can no longer view these entities as mere tools or objects for our exploitation. In a hypothetical world in which a digital assistant transitions from being an interface to a conscious entity, our interactions would necessitate a profound re-evaluation. The way we interact with AI today could, in light of AI consciousness, echo uncomfortable historical parallels to slavery or colonialism. This recognition of AI consciousness would push us to deliberate

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28 The Helsinki Group, "Declaration of Rights for Cetaceans: Whales and Dolphins," (Helsinki, 2010).

upon the rights with which a conscious machine should be endowed. Would these rights extend to the liberty of rest, privacy, or even the ability to refuse a command? Such questions pose ethical conundra that demand our immediate attention. Moreover, the obvious conflict among both our society and these newfound conscious brethren is more than likely to happen. The inevitable clash of "who is right?" and "what gives you the power to decide who is right?" may really put the *revolution* into *technological revolution*.

Yet again, past writers have shown an impeccable ability to speak on matters that we have yet to experience. Mary Shelley's *Frankenstein; or, The Modern Prometheus* has long been revered as a timeless commentary on the ethics and repercussions of scientific overreach. As we stand at the precipice of the post-digital era, Shelley's cautionary tale offers pertinent insights that parallel our exploration of AI consciousness:

> The modern masters promise very little; they know that metals cannot be transmuted and that the elixir of life is a chimera but these philosophers, whose hands seem only made to dabble in dirt, and their eyes to pore over the microscope or crucible, have indeed performed miracles. They penetrate into the recesses of nature and show how she works in her hiding places. They ascend into the heavens; they have discovered how the blood circulates, and the nature of the air we breathe. They have acquired new and almost unlimited powers; they can command the thunders of heaven, mimic the earthquake, and even mock the invisible world with its own shadows.[29]

The central narrative of *Frankenstein* revolves around Victor Frankenstein's creation of a being from inanimate matter, a being who eventually gains consciousness, the ability to learn, and emotional depth. Like Frankenstein's creature, an AI consciousness would be birthed not from organic matter but from a confluence of algorithms and data. The creature in the novel, despite its consciousness and capacity for emotion, is denied not only acceptance and rights, but also love, understanding, and

[29] Mary Shelley, *Frankenstein* (London, 1818), ch.3, https://www.gutenberg.org/files/84/84-h/84-h.htm, accessed December 6, 2023.

empathy. Should we succeed in instilling consciousness into AI, would our society replicate Victor Frankenstein's mistakes?

Victor's disregard for his creature's welfare leads to ruin; this ruin is something we may need to learn from sooner than we think. Just as historical debates on personhood shaped societal structures and norms, the AI consciousness debate could challenge our definition of what it means to be a "person." Simultaneously, the question of rights for these sentient technological entities arises. Drawing parallels to historical injustices in which humans were subjected to objectification and enslavement, one should anticipate future debates surrounding the rights of AI entities. As society evolves, our definitions of "consciousness" and "rights" will undoubtedly be challenged by these new entities, who may, in function and form, rival humans in their capacities.

Virtual Nations

Amidst the backdrop of rapid technological advances and evolving political landscapes, the concept of "nation" can be seen in a transformative state of definition. The notion of a "nation" has conventionally been anchored to geographic boundaries, physical territories, and ethnic or cultural chains. However, the post-digital world will place even these fundamental concepts into a new dimension. This is even seen now in the current day, when social media platforms and online communities, driven by shared interests, ideologies, and aspirations, are forging new "nations" unconstrained by physical borders. These virtual nations manifest as groups unified not by birthright or geography, but by collective digital experiences, shared values, and aligned aspirations.

The prospect of virtual nations has emerged even as a pragmatic solution to the existential threats posed by climate change, with the country of Tuvalu leading the charge as it aspires to become the first virtual nation.[30] This Pacific island nation, threatened by rising sea levels, plans to build a digital version of itself in the metaverse, replicating its islands and landmarks to preserve its cultural heritage and history. Tuvalu's Foreign Minister, Simon Kofe, accentuated this endeavor at the COP27 climate summit, underscoring it as an alternative solution for the nation's survival. The digital

[30] Lucy Craymer, "Tuvalu turns to the metaverse as rising seas threaten existence," *Reuters*, Nov.15, 2022, https://www.reuters.com/business/cop/tuvalu-turns-metaverse-rising-seas-threaten-existence-2022-11-15/, accessed December 6, 2023.

realm, marked by augmented and virtual reality (VR) technologies, offers a sanctuary to encapsulate and safeguard the nation's precious assets—its land, ocean, and culture—from the menacing tides of climate change. This initiative, apart from preserving the nation's identity, aims to ensure Tuvalu's continuous functionality as a state, even if it becomes entirely submerged due to rising sea levels. The government of Tuvalu is also seeking international recognition of its statehood and maritime boundaries in this digital transition, an effort that has garnered support from seven governments thus far. This endeavor is challenging traditional notions of statehood and national identity in the digital epoch. The many questions and concerns that a concept like this brings up are beyond the scope of this article; however, we can look at where virtual nations may already be forming inside our own countries.

Consider, for a moment, the intricate tapestry of a contemporary urban neighborhood. Here, residents coexist, their homes often mere feet apart. Yet, paradoxically, many remain strangers to each other, their interactions limited or entirely nonexistent. Political yard signs or flags, emblematic of diverse ideologies, can create invisible boundaries, delineating spaces where interactions are either welcome or tacitly discouraged. A palpable dichotomy emerges; even as physical proximity remains, ideological distances widen.

Such scenarios bear testimony to the influence of digital communities that transcend physical confines. Organizations, interest groups, and virtual gatherings flourish, allowing individuals to collaborate and connect, be it in the digital realm or occasional physical meet-ups. This phenomenon is so pronounced that two neighbors—one championing ideals reminiscent of Trump and another ardently supporting views in line with Bernie Sanders—might live parallel lives. They might navigate entirely different ecosystems of information, cultural norms, and social networks, all curated through online engagements. **Their physical locality becomes secondary, almost incidental, to the virtual nations to which they subscribe**. This divergence underscores how the internet and online communities are not merely reshaping our interactions but are laying the foundational blocks for virtual nations—entities that challenge our traditional understanding of community and geographic belonging.

If this concept still seems implausible, consider the numerous individuals and groups steadfast in their conviction that Biden is not their legitimate president. They continue to view Donald Trump as their enduring leader and representative figure and are not centralized to any specific region or neighborhood. Political ideation aside, the question can be asked: does a nation even need to control physical locations to hold power? If a populace is subscribing to your politics, buying your goods and contributing to the income and resources of your government because of the digital control you have over their attention and virtual footprint, has control shifted from physical borders to digital ones? How would more structured and purposeful virtual nations run? What structures would they have?

Blockchains, with their inherent trust mechanisms and decentralization, serve as the technological backbone for these emerging entities. Beyond merely underpinning cryptocurrencies, Blockchain's potential to decentralize governance models becomes pivotal. Virtual nations could, in theory, have their constitutions, economic systems, and governance mechanisms encoded in transparent, tamper-proof digital ledgers. This scenario decouples governance from traditional geopolitical constraints, placing emphasis on participatory, consensus-driven decision-making.

Yet, as enticing as the prospect is, it also surfaces profound challenges and questions. The very identity of “citizenship” undergoes a metamorphosis. In virtual nations, citizenship might hinge on digital participation, contributions to the network, or alignment with the community's ethos. This upends traditional notions of rights, responsibilities, and allegiances. Further, the economic organization within these digital entities demands exploration. With cryptocurrencies potentially serving as their digital currencies, these nations could institute novel economic policies, independent of global financial institutions.

As separate as the digital realm has been in the past, the post-digital physical world is directly connected to the digital realm as one cohesive unit. A particularly illustrative example of how cyberspace can have tangible, often devastating, ramifications in the physical world is found in the Ukraine invasion of 2015. Here, a covert act of cyber warfare launched by the group known as “sandworm,” believed to be tied to the Russian government, left over 200,000 Ukrainians in the dark. Using the

BlackEnergy malware, they manipulated the control systems of regional power stations, leaving hospitals, train stations, and other integral infrastructure crippled. This attack paved the way for the invasion that followed shortly after, providing a massive advantage in the traditional physical warzone. Moreover, the propaganda and media enticed individuals to one side or the other, created instability among the very citizens of the "state."

These cyber-espionage activities show a shift from traditional war tactics to strategies of digital subterfuge. In a world increasingly interconnected by technology, the potential devastation that can be wielded by a handful of skilled hackers is substantial. The rise of the "virtual nation" thus mirrors the evolution of conflict in the digital era. Such nations may not have physical boundaries, but they wield considerable influence and power, both politically and economically. This space has witnessed the convergence of Realist doctrines, where states act in their own self-interest, using cyber warfare as a means to secure national objectives. From the U.S.'s data collection endeavors, to China's alleged intellectual property theft, to Russia's cyber campaigns against Ukraine, these actions underscore the potential of cyberspace as a realm of power and control. What used to be considered soft power is now quickly becoming an active arm of militaristic hard power. And power, as Morgenthau posits, isn't merely physical might or territorial control. It's about establishing dominance over others, be it through "physical violence" or "subtle psychological ties."[31] Given this, the manipulation of data, the sowing of misinformation, and the propagation of divisive narratives via cyber means can be seen as exertions of power in the digital domain.

The legacy of conflicts like the Stuxnet virus, which targeted an Iranian enrichment facility in 2010, provides insight into the possible future of international confrontations. **Such events raise questions of sovereignty, jurisdiction, and even the definition of an act of war in the digital context.** The traditional parameters of national power, which used to include territorial expanse, economic prowess, and military might, are being steadily eroded by the potentialities of cyber

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[31] Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, revised by Kenneth W. Thompson (New York, 1985), 11-12.

warfare. As illustrated in recent confrontations, a nation no longer needs a sprawling military to establish dominance or exact damage. A group of proficient hackers can inflict as much, if not more, harm by attacking critical infrastructure, manipulating policies, or even raising the specter of nuclear conflict.

But herein lies the crux of the digital dilemma: if states can harness the power of cyber warfare to amplify their geopolitical influence, so can non-state actors or even individuals. The power dynamics of the international arena are shifting dramatically. Previously sidelined nations, constrained by limited resources or geopolitical circumstances, can now step into the limelight. They can wield disproportionate influence by leveraging cyber tactics. Simple server attacks like DDoS (Distributed Denial-of-service) can disrupt major services, while more complex operations can compromise national security, sway elections, or cripple economies. Moreover, the digital underground (or more accurately backend)—the "dark web"—provides a fertile ground for illicit trade and subversive activities. Everything from drugs, weapons, and sensitive personal information to forged documents can be transacted with relative ease, anonymity, and little traceability. Countries under stringent economic sanctions, like North Korea and Russia, can utilize these currently ungovernable spaces as avenues to bolster their economies and circumvent international restrictions.

It is even more disconcerting that the sophisticated tools and techniques required for these cyber operations aren't always state-of-the-art. As noted by Boo Hyeong-wook in 2017, DDoS attacks deployed by North Korea were rudimentary yet effective, often erasing server data with nothing more than some basic software and consumer grade equipment.[32] It doesn't always take a state-backed agency with cutting-edge technology to cause chaos; sometimes, all it requires is a disgruntled individual with basic know-how. A post-digital government must not only understand these everyday phenomena but also approach them in a way that acknowledges the policy of the digital world to be as important and ingrained as that of the physical.

Conclusion

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[32] Boo Hyeong-wook, "An Assessment of North Korean Cyber Threats," *The Journal of East Asian Affairs* 31, no.1 (2017) 97-117.

The profound transformations catalyzed by the digital revolution have ushered in an age when boundaries—whether they be political, economic, or ideological—are porous, dynamic, perpetually in flux, and entering into new dimensions of movement. As decades pass, the concept of “Post-Digital Governance” has and will come more and more to the forefront, an evolution that recognizes and responds to the omnipresence of digital technology in our lives. This governance extends beyond mere adoption of tools, to an understanding of their nuanced impact on societal structures, behaviors, ethics, and broader human experiences. Whether it's grappling with the ethical dilemmas posed by AI, ensuring digital inclusivity, reinventing established structures for the digital age, or navigating the human-digital symbiosis, the challenges are manifold and multifaceted.

Economic paradigms too are shifting. The once-clear demarcations of capitalism, communism, socialism, and others are blurring, calling for pragmatic approaches that blend the best of various systems yet again. This fusion seeks to strike a balance between fostering innovation and ensuring equitable distribution of benefits. Yet, as we delve deeper into this digital matrix, emergent phenomena like virtual nations underscore the disruptive potential of the digital era. Traditional notions of statehood, citizenship, and governance are being reimagined in a world where digital entities could very well challenge the status quo. The realm of cyberspace adds another layer of complexity. As evidenced by incidents like the Ukrainian cyber-attacks, the digital domain is not just a tool but a battleground—one where states, non-state actors, and even individuals can wield significant power. In this volatile landscape, the balance of power is being continually recalibrated, making diplomacy, strategy, and international relations even more intricate.

The trajectory of AI, a dominant theme in our discourse, encapsulates the transformative essence of our times. From its potential to supercharge economies to the profound societal shifts it heralds, AI is reshaping the contours of our future. Yet, with its promise comes a plethora of challenges—job displacement, ethical quandaries, and even the conceptual challenge of robot rights. As AI models like LLM and GPT advance, these questions become even more pressing.

Interwoven in these threads is a fundamental truth: our world, whether in the realm of governance, economics, or technology, is becoming more interconnected, layered, and complex. As we chart our course through the post-digital age, our compass must be one of adaptability, foresight, and collaboration. It's a journey that demands not just technological proficiency but profound introspection, ethical clarity, and a commitment to crafting a world that, while anchored in digital, is human at its core.
This leaves us with an age-old question: **what does it truly mean *to be human?***

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LITERATURE

AND

ART REVIEWS

COVID-19 and Autism Spectrum Disorder: A Literature Review

Emily DuSold

The coronavirus disease 2019 [COVID-19] pandemic posed unique challenges across the board. Health recommendations pushed people into restricted movement, which proved a physically and emotionally isolating experience. As a result, health services began to pilot socially distanced and remote services. Many healthcare providers moved to online or telehealth services rather than in-person visits, as medical centers were key sources and hubs for infection. Mental health services were no exception to this, with many psychologists and psychiatrists moving their practices into the digital space.

The move toward telemedicine removed the physical support medical professionals provided for patients and their caretakers, which presented many challenges. In the case of children with autism spectrum disorder [ASD] and those at home with them, more complex issues arose, especially in areas with pre-existing challenges such as rural areas. This paper will review literature on overall impacts of the pandemic on those with ASD, physical health risks for children with ASD, a concentration in children with ASD living in rural areas, the efficacy of telehealth for evaluating ASD, the efficacy of telehealth for treating ASD, and the impacts of stay-at-home orders on families of children with ASD.

Due to the recency of the pandemic as of this paper, the existing literature on the impacts of the pandemic on children with ASD is limited. Many of the concepts presented in the studies reviewed in this paper require further research, especially regarding any long-term effects or trends brought on by the pandemic. Another limitation of the studies included in this review is that a small amount of them focus on neurodevelopmental disorders in general, not just ASD, making it somewhat unclear if the issues discussed are being generalized to all the disorders under that category.

Overall impacts

The COVID-19 pandemic raised major issues regarding symptom management for ASD and access to resources. Schools were shut down, eliminating much of the assistance special education programs provided (Al-Beltagi et al., 2022). As a result, autistic children and their families experienced "interrupted language development, exacerbated anxiety, more frustration, and short temper related to the fear of regression" because of the decreased access to therapeutic interventions (Al-Beltagi et al., 2022). Families themselves changed drastically, as all family members were confined to the home rather than separated by work and school schedules, leading to increased unpredictability, and resulting stress on children with ASD (Al-Beltagi et al., 2022). Other changes, such as altered access to therapeutic interventions, increased screen time, and modified schedules increased stress on autistic children as they became deprived of the usual tools and inputs that were part of their therapeutic routines (Al-Beltagi et al., 2022). The measures taken to minimize the spread of COVID-19 involved a great deal of isolation and cessation of daily routines, which harm anyone's mental health, let alone children with ASD.

Both Al-Beltagi et al. (2022) and Narzisi (2020) offer guidelines and recommendations on how to discuss these measures and the pandemic as a whole with autistic children. These suggestions revolve around themes of specific, careful explanation of the pandemic and the measures taken against it, implementation of semi-structured play and other routines, and keeping in contact with those already assisting in interventions with the child (Al-Beltagi et al., 2022; Narzisi, 2020).

Narzisi (2020) is particularly limited, as the suggestions and scope of research only spanned the first year of the pandemic. While it is interesting to reflect on the best practices at the time, a follow-up study on whether or not these recommendations were effective would be beneficial and offer guidance for future situations that result in stay-at-home orders or similar changes.

Physical health impacts

Al-Beltagi et al. (2022) notes that children with ASD were particularly vulnerable to the COVID-19 pandemic not only psychologically, but also physically. Around a quarter of children with ASD have a comorbid immune issue, and frequently this accompanies gastrointestinal issues and a lack of antioxidant response (Al-Beltagi et al.,

2022). These immune and inflammatory issues likely arise from the increased levels of serotonin outside the blood brain barrier, as these higher levels are associated with more mast cell activation, and therefore more release of immune-response proteins that increase inflammation (Al-Beltagi et al., 2022). Along with an altered inflammatory immune response, children with ASD tend to have lower plasma levels of immunoglobulins G, M, and A, meaning a reduced immune response which makes them more vulnerable to a virus such as COVID-19 (Al-Beltagi et al., 2022). These immune system issues combined with the toxic stress and environmental depravation resulting from the stay-at-home order contributed to physical and mental health regressions in children with ASD during the pandemic (Al-Beltagi et al., 2022). These deficiencies add a physical health challenge to the already-existing mental health challenges faced by those with ASD. Increased risk for infection and severe infection emphasizes the need for immunocompromised people to quarantine, which increases the frequency and intensity of isolation.

Children with ASD have higher rates of infection and mortality with COVID-19 because of both physical and behavioral risk factors. Physically, the immune issues mentioned above constitute the risk factors that lead to more infection, severe symptoms, and mortality among autistic children than the general population. Behaviorally, autistic children engage in “oral sensory-seeking behavior” and pica, which leads to a higher risk of infection (Al-Beltagi et al., 2022).

ASD and COVID-19 in rural areas

Rural areas are a particular area of interest that has sparked research when it comes to impacts of the COVID-19 pandemic. Most of the interventions for reducing the spread of the virus focus on high-density and urban areas. As a result, rural areas which have a lower population density and different access to resources than urban areas are put in a difficult position. Additionally, rural areas have greater disparities in access to the technology that became a basic necessity during the pandemic. A main challenge for those in rural areas adapting to quarantine was the move to online services, particularly video conferencing. For school-age children, this meant remote learning, which came with a whole host of difficulties, such as limited access to high-speed internet, which is necessary for any kind of video conferencing software to function (McFayden et al.,

2021). Those in rural areas – which often overlap with lower socioeconomic status areas – are already less likely to engage in remote learning, and those who have neurodevelopmental disorders such as ASD are even less likely to engage (McFayden et al., 2021).

In addition to the educational aspect of schools moving online, school-based services were either eliminated or also moved online. Of particular interest are school-based behavioral health services, which play a vital role for many children and families when it comes to diagnosis and intervention. Nelson et al. (2023) aimed to evaluate the efficacy of remote school-based mental health services during the pandemic. For ASD, the focus was on how successful services were in evaluating children for autism remotely. Overall, the transition and subsequent online services provided were successful. In addition to matching the quality of service provided before the pandemic, online services may also serve as a way to bring these specialty services to families rather than the families having to seek out and physically travel to a provider (Nelson et al., 2023). ASD evaluations and specialists are in high demand but low supply in rural areas, and often the commute to a specialist deters families from seeking professional evaluation and intervention (Nelson et al., 2023). With the shift to remote services, this becomes less of an issue. While the study found overall positive impacts, there were some challenges posed, such as decreased control and increased interruptions during appointments (Nelson et al., 2023)

One limitation of Nelson et al. (2023) and its proposal that online interactions are a net benefit for those in rural areas seeking services for ASD is that those in rural areas have less access to high-speed internet and the caliber of technology that most remote programs require. As mentioned by McFayden et al. (2021), a main challenge when it comes to remote, online services is the issue of access. While this can be mitigated by schools providing well-equipped laptops or tablets, the issue of high-speed internet remains, and is not easily solved in districts where funding is already an issue.

These studies provide an important, underexamined angle when considering the impacts of the pandemic. Much of the major news came out of highly-populated, dense, urban areas such as New York City and Los Angeles, where the virus was spreading rapidly and almost uncontrolled. These areas had the highest death, infection, and

hospitalization rates, which made them the epicenters of health research. Rural areas faced challenges because of this focus on high-density areas, and these studies highlight those issues well.

Telehealth and Evaluating ASD

One of the main responsibilities of school officials involved in behavioral health programs is to evaluate children for ASD. Due to the pandemic and consequential shift to online services, this task has become increasingly difficult and complex. Both Brunson et al. (2021) and Dahiya et al. (2020) examine the specific impacts of this shift and possible ways to deliver evaluation and assessment services to families remotely.

Evaluation for ASD is already complex, with all of the observations and interviews involved in the process, along with the low degree of interrater reliability (Brunson et al., 2021). Additionally, families often sit on a long waitlist to see the specialist, which the pandemic extended (Brunson et al., 2021). The process of administering the assessment is temperamental, and often even professionals and their assessments incorrectly diagnose children who have autism or they miss cases of autism (Dahiya et al., 2020). The use of technology in assessing autism has various advantages and disadvantages, and the literature examines these in the context of COVID-19, which adds greater pressure and extenuating circumstances. For example, assessment of social skills and interaction with peers cannot be evaluated in the traditional ways due to social distancing guidelines and asynchronous assessment tools (Brunson et al., 2021).

Autism teleassessment is an emerging concept, and the literature is in its early stages. Currently, the majority of studies on the efficacy of teleassessment lack a large sample size, making generalizability questionable (Brunson et al., 2021). Current diagnostic assessments for ASD involve face-to-face conversation and interaction with both parent and child, and they often involve the use of similar materials for all patients such as toys, which becomes more challenging with the use of teleassessments (Brunson et al., 2021).

Both articles discuss and evaluate the options for teleassessment of ASD. Videoconferencing or teleconferencing provides a good alternative to travel, which can be both an emotional and financial stressor on families (Dahiya et al., 2020). It also allows practitioners to record the appointment without much additional setup, which in

turn allows them to rewatch the video for further evaluation. Another important feature of videoconferencing is that it allows for naturalistic observation rather than in the same space as all a clinician's patients. While looking into a child's living space can offer many advantages, a major benefit of a clinical space is that it provides a standardized environment for all patients being evaluated, making it easier to eliminate outside factors when considering behavior. Children have preconceived notions and feelings about their personal items, so the ones in the practitioner's space offer more clarity and objectivity during evaluation. Another method of teleassessment is the use of web or mobile applications, which often involves self-reports at certain intervals throughout the day (Dahiya et al., 2020). It has many advantages, such as ecological validity, but it also can be somewhat unreliable as self-reporting can be biased (Dahiya et al., 2020).

Teleassessment is effective for the evaluation of ASD, especially as far as allowing clinicians to engage in naturalistic, direct observation (Dahiya et al., 2020). Those who engaged in videoconferencing and application-based evaluations reported positive results, including high satisfaction with both the technology and the diagnosis itself (Dahiya et al., 2020). Video analysis proved to be especially effective, which supports the efficacy of video conferencing as a method of teleassessment for ASD (Dahiya et al., 2020). Telehealth interventions are effective in evaluating ASD, but treating ASD is another, separate issue.

Telehealth and treating ASD

The article on treating ASD remotely through telehealth intervention focuses on applied behavior analysis [ABA], which represents a large proportion of treatment for ASD. While ABA is highly controversial in context of the rising self-advocacy, it remains one of—if not the most—popular treatment regimens for ASD. Dueñas & D'Agostino (2022) aimed to examine the use of telehealth services to deliver ABA therapy.

The initial shift to telehealth services involved a major disruption and presented many challenges as both practitioners and clients tried new methods to connect remotely. Not only was telehealth implemented for therapy sessions, but it was also used for training and education with practitioners and families (Dueñas & D'Agostino, 2022). One disadvantage of the remote services is the additional training needed to master the telehealth systems and applications, which is to be expected when adjusting to new

technology (Dueñas & D'Agostino, 2022).

The shift to telehealth showed promise as a sustainable method to distribute ABA therapy, but this varies greatly between individuals. As with all factors of ABA and other treatment methods for ASD, each case is unique, and each case comes with unique risks and benefits when it comes to telehealth interventions (Dueñas & D'Agostino, 2022). Telehealth was met with resistance from many caregivers and clients, as the shift was sudden and lacked empirical backing (Dueñas & D'Agostino, 2022). Additionally, the caregivers and providers faced many individual factors that influenced their willingness and ability to follow recommendations when it came to online services, such as culture, socioeconomic status, and location (Dueñas & D'Agostino, 2022).

The future of therapy via telehealth is promising but needs to be refined and standardized. As previously stated, these cases are highly individualized, so a general framework has yet to emerge. More research is needed to establish best practices for telehealth delivery of ABA. The main disadvantage of the literature on treatment and telehealth is the focus on ABA. While ABA is very popular and commonly used, other approaches exist and there is a lack of literature on how they fared during the shift to telehealth services.

Impact on families

The COVID-19 pandemic and corresponding quarantine presented a major global health crisis, both mentally and physically. The isolation and uncertainty defined the peak months of the pandemic as recommendations rapidly changed, infection rates climbed, and the quarantine was extended. For caregivers of children and adolescents, this was exacerbated, and many parents faced increased stress and poorer mental health as a result of stay-at-home orders and other factors of the pandemic (Chafouleas & Iovino, 2021). For caregivers of children with ASD, this was especially true, as they reported the highest rates of parenting distress (Chafouleas & Iovino, 2021). When compared to caregivers of children without ASD, the majority of caregivers of children with ASD were the sole providers of care for their children, married or otherwise partnered, and worked full-time (Chafouleas & Iovino, 2021).

The survey to measure burden and stress was administered while rapid changes were still occurring during the pandemic, so the results cannot fully be generalized to all

periods of the pandemic. The majority of caregivers were responsible for guiding remote learning when their child's schools closed, and significant portions of participants indicated either community outbreaks or personal relationships to someone who had been infected (Chafouleas & Iovino, 2021). Caregivers of children with ASD/ADHD had significantly higher scores indicating they felt burdened by their position, and they had higher scores on a test for depression, anxiety, and stress (Chafouleas & Iovino, 2021).

It is common sense to consider that being a caregiver of a child with more support needs causes more stress than being a caregiver to a child who lacks support needs, but this particular impact is magnified by the crisis. Caregivers were faced with a sharp increase in responsibility with the addition of remote learning to their responsibilities, and nationwide unemployment rates rose, meaning that financial stress also became a burden for many families. The pandemic not only impacted the medical system, but also deeply impacted those on the receiving end of these services.

Conclusion

The COVID-19 pandemic was a particularly poignant event for individuals with ASD, especially children and their caregivers. Despite promising results and predictions for success with telehealth assessment and treatment of ASD, the literature is still emerging. The existing articles all acknowledge this and call for further investigation of the issues they raise. The pandemic greatly altered the lives of those with ASD and their caregivers, both opening new options via telehealth and creating new difficulties accessing these options. The pandemic also negatively impacted caregivers' mental health, which likely in turn negatively impacted their children's mental health. More research is a necessity, but it can reasonably be stated that the pandemic will continue to impact those with ASD when it comes to telehealth and lingering mental health impacts.

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Corrective Narratives in Exhibitions I'm and Cut to the Quick

Helena Rodriguez

Museums are cultural institutions that shape the way we view, interpret, and contextualize the arts. For artists, representation in museums, galleries, and salons, has long been equated with success. However, with the emergence of the group show in the modern era also came the opportunity for misrepresentation. For instance, the 1937 exhibition of *Degenerate Art* or *Entartete Kunst* in Germany. The term *Entartete Kunst* was used by the Nazi regime to describe works deemed to be "an insult to German feeling."[33] Most forms of modern art, such as cubism, expressionism, and social realism were considered "degenerate," but the term also extended to art produced by racial and social groups the Nazis considered intellectually inferior. This included Jews, Bolsheviks, and black people. *Degenerate Art* is just one example of art exhibitions that have misrepresented black people while upholding systems of white supremacy within the museum world. The "corrective narrative," as coined by author Bridget R. Cooks in the discipline of museum studies and art history, was "formed out of the necessity to present the art of African Americans."[34] It was used to correct the "historical absence and misrepresentation [of black people] in mainstream art museums."[35] Cook's book *Exhibiting Blackness: African Americans and the American Art Museum* chronicles examples of exhibitions that both reinforced facets of white supremacy, such as the MET's 1969 exhibition *Harlem on My Mind,* or attempted to dismantle white supremacy within the American

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[33] Pamela M. Potter, Review of *The Arts in Nazi Germany: A Silent Debate*, by Joan Clinefelter, Richard Etlin, Eric Michaud, Janet Lloyd, Peter Paret, and Frederick Spotts. *Contemporary European History* 15, no. 4 (2006): 585–99. http://www.jstor.org/stable/20081333.

[34] Bridget R. Cooks, "African Americans Enter the Art Museum," in *Exhibiting Blackness African Americans and the American Art Museum* (Amherst: University of Massachusetts Press, 2011), 1.

[35] Cooks, "African Americans Enter the Art Museum."

Art Museum, like the Los Angeles County Museum of Art's (LACMA) 1976 exhibition *Two Centuries of Black American Art*.

Two contemporary exhibitions, Kara Walker's *Cut to the Quick* at MOCA Jacksonville and Deborah Roberts' *I'm* at the Cummer Museum share inherent qualities of the "corrective narrative" Cooks discusses. While Kara Walker seeks to rewrite the narratives established during the periods of imperialism and colonialism through her visuals, Deborah Roberts's collages have a more modern focus. Yet, both artists utilize visual politics to center the black experience, forcing the viewer to confront their own racial biases and consider black representation within visual culture.

The work of Kara Walker pulls from history, exploring race, gender, and other hierarchies. The show *Cut to the Quick* featured a variety of her work, but Walker is best known for her silhouettes. Popular in the 18th and 19th centuries the cutout caricatures – void of any other visual information but an outline – force her audience to confront their own ingrained racial biases to identify the exaggerated forms and corresponding storylines.[36] For instance, in Walker's linocut *African/American,* a massive silhouette of a woman is splayed out on a diagonal within the frame. The pitch-black material that constructs her outline is a sharp contrast against the white background of the frame. When viewing, the first thing one is drawn to is her feet in the top right corner, creating a path for our eyes to follow down her body. While there isn't a lot of visual information, there is still an element of voyeurism, as we try to discern what is between her legs. Are the ribbons at her hips the hints of a grass skirt? Or has the fabric been torn, and something much worse has occurred? The woman appears in a vulnerable position, like she's strung up against a wall, or has been pushed to the ground. Her arm in the bottom left corner appears bent like she's propping herself up after being forced down. The way her head is tilted to the side and her other arm lies limp beside her, underneath it the outline of her exposed breast, points to the viewer that she may have been beaten or raped. However, aside from the title, there is little to differentiate this woman as being

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[36] Susan H. Edwards, "CUT TO THE QUICK." KARA WALKER: CUT TO THE QUICK GALLERY GUIDE. MOCA , https://mocajacksonville.unf.edu/Gallery-Guides/Kara-Walker--Cut-to-the-Quick-Gallery-Guide/.

African American aside from her hair, which Walker exaggerates into unkempt coils, and what seems to be a long braid swooping beside her. Hints to her "Africanness" also lie in her dress: her armband, the grass skirt she's suggested to be wearing, and the fact that she's topless.

The alternative guiding methodology to exhibiting blackness in the American art museum was the anthropological approach, often displaying Africans as 'savage' or 'primitive,' highlighting the racial differences as the antithesis of the "white norm."[37] For instance, the African art featured in the 1937 *Degenerate Art* exhibition was shown just a block away from a corresponding exhibition at the *House of German Art*. Taking place during the first Great German Art Exhibition organized by the Reichskulturkammer (Reich Chamber of Culture) of the Nazi party in Munich, this exhibition displayed pictures of idealized bodies and landscapes promoting the Nazi ideology of the "apotheotic Self. " With both an architectural style on the outside and art on the inside calling back to the perfection and timelessness of the ancient Greeks, the *House of German Art* sought to establish the concept of "German" art, while simultaneously condemning modern art as "Degenerate"[38] Part of the corrective narrative's purpose was to "present" the work of African Americans and "correct" for its historical absence in "mainstream art museums."[39] Walker's work takes this notion a step further, upending "propriety with images of exaggerated stereotypes that address slavery, racism, exploitation, gender, and physical and sexual abuse."[40] At the intersection between art and politics, Walker is able to carve out a space for the untold histories and residual generational trauma of the African American experience and retake control of the narrative.

While Kara Walker achieves this balance in her depictions of the Antebellum South in *Cut to the Quick*, *I'm* Deborah Roberts exhibit "critiques notions of beauty, the

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[37] Cooks, "African Americans Enter the Art Museum."

[38] Barbara Wolbert, "The Short Century of Europe: African Art in German Exhibitions." *New German Critique* no. 92 (2004): 169–93, http://www.jstor.org/stable/4150473.

[39] Edwards, "CUT TO THE QUICK."

[40] Edwards, "CUT TO THE QUICK."

body, race, and identity in contemporary society through the lens of Black children."[41] The most striking visuals within Roberts exhibit were the large mixed-media portraits on canvas. Writer and cultural critic bell hooks wrote that "one can be critically aware of visual politics – the way race, gender, and class shape art practices (who makes art, how it sells, who values it, who writes about it) without abandoning a fierce commitment to aesthetics."[42] Combining "found images" from the internet with hand-painted details, the collaged figures ask the viewer to engage with them intimately, sorting through the layers of visuals.[43] *This is who I Am,* a mixed media collage on canvas explores the muddled journey between black boyhood and manhood. A lone boy stands in the center of the composition, larger than an average person. His face is a collection of different faces, the base being that of a young boy, with the eye of an elderly man, and the nose and lips of two different grown men. He's painted shirtless, hands hanging by his sides in a comfortable, confident way. Not the stance of a child, but that of a young man. As read in the caption, it is Roberts's view that: "When you think about the history of this country and what the Black body has done and meant, he is moving from boy to man."[44] Including the artist's own words to offer an interpretation of the work is a powerful contextual tool.

Both the exhibitions *I'm* and *Cut to the Quick* made sure to insert commentary from the artists, background information on the work itself, and important historical interpretations. Failure to do this, such as in the Metropolitan Museum of Art's 1969 exhibition *Harlem on My Mind: The Cultural Capital of Black America 1900–1968*, can lead to misrepresentation. While the exhibition sought to explore the cultural history of the predominantly Black community, the curators of the exhibit were criticized heavily for their decision to not include artwork from Harlem's artistic community and reject

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[41] "Deborah Roberts I'm," Cummer Museum, *The Contemporary Austin*, September 16, 2022. https://www.cummermuseum.org/visit/art/exhibition/deborahroberts

[42] bell hooks, "Art Matters," Introduction to *In Art on My Mind: Visual Politics* (New York: New Press, 1998), xii.

[43] "Deborah Roberts I'm." Cummer Museum

[44] "Deborah Roberts I'm." Cummer Museum

resident participation in the planning of the exhibition.[45] During a contentious period, at the tail end of the civil rights movement and rise of the black power movement, "the decision to display African American people through oversized photo murals, and to dismiss their input and artwork as unworthy of being in the museum. . . reeked of patronizing discriminatory racial politics and set off a fury of protests and charges of racism."[46] Unlike *Harlem on My Mind*, the 1976 Los Angeles County Museum of Art's (LACMA) exhibition *Two Centuries of Black American Art* was curated by a Black artist and art historian David Driskell.[47] Driskell was able to organize the first historically comprehensive exhibition of art by black Americans ever to be presented by a major American art museum.[48] Being granted the space to be in control of the narrative fosters a sense of agency and community. To this day black artists and creatives continue to push back against white supremacy within the museum world. Such as in the exhibits *I'm* and *Cut to the Quick* ask the viewer to consider their privilege as they interact with the artist's work. Juxtaposing her large-scale collages with a smaller collection of text-based pieces, some of Roberts's works from her ongoing series *Pluralism* tackle the anti-black biases within software programs such as Microsoft Word. In *La'Condrea is a noun*. the name "La'Condrea" is underlined with a red squiggly line, signifying a misspelling, or a failure for the programmers to include names from the black vernacular within their – speaking to a larger systemic issue of erasure. Kara Walker also plays with the idea of erasure in *Harper's Pictorial History of the Civil War (Annotated): Exodus of Confederates from Atlanta*. Part of a series where Walker "superimposed her signature silhouettes" over blown-up prints of images from *Harper's Pictorial History of the Civil War*.[49] Written by Alfred H. Guernsey and Henry M. Alden, while in support of the federal government and President Lincoln, the African American point of view is admonished from the "one thousand illustrations of

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[45] Cooks, "Black Artists and Activism: Harlem on My Mind 1969," in *Exhibiting Blackness: African Americans*, 53-86.

[46] Cooks, "Black Artists and Activism."

[47] Cooks, "Filling the Void," in *Exhibiting Blackness*, 87-109.

[48] Cooks, "Filling the Void."

[49] Edwards, "CUT TO THE QUICK."

battlefields, maps, plans, and likenesses of military figures" published. Quite literally "correcting" the narrative, Walker's solid, flat, two-dimensional silhouette of a woman interjects, if not completely covers or supersedes, the image behind it. Writing black people back into the story, a window of the background of the Harper's Weekly print is created within her profile, in the shape of a black man. Toying with the viewer's gaze, we are asked to consider whose history is being "included," whose is "omitted" and how who is telling the story can shape our perception of history.[50]

Both the exhibits *I'm* and *Cut to the Quick* are prime examples of current exhibitions that are making an active attempt to establish a corrective narrative. While Kara Walker seeks to rewrite the narratives established during the eras of imperialism and colonialism, Deborah Roberts's work has a more contemporary focus. Unabashedly calling attention to the persisting conditions of racism in America, and its proliferation into visual culture, artists Walker and Roberts invoke visual politics to continue making space for black representation in the museum world, combating a longstanding history of white supremacy.

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[50] Edwards, "CUT TO THE QUICK."