VOTING TECHNOLOGY, DEMOCRACY, AND PROPAGANDA: ONTOLOGICAL

CONSIDERATIONS FOR THE 2020 PRESIDENTIAL ELECTION

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ABSTRACT

The 2020 United States Presidential election was considered one of the most tumultuous political contests in the 21st century. During an international pandemic, travel restrictions and social distancing requirements created uncertainty about whether to vote in person or via absentee-mail-in ballot. The present study sought to investigate how voters experience different technologies in the 2020 United States Presidential election. Selected concepts in media ecology supplemented Fox and Alldred's (2013) framework for new materialist inquiry to explore the technical material characteristics of voting technology and the discursive elements of voter fraud propaganda. By tracing the history of voting technologies and voter fraud propaganda, the analysis argued that the vast array of technologies and experiences of voting in the 2020 election rendered the idea of an archetypal or monolithic voting method insufficient. Therefore, the present study suggests an ontological revision for the ways we conceptualize the relationship between voters, voting technologies, and democracy writ large.

ACKNOWLEDGMENTS

DEDICATION

To my parents, John and Kathy, whose infinite love and support still baffles me to this day

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LIST OF ABBREVIATIONS

US ....United States.

HAVA...Helping America Vote Act.

EAC..Election Assistance Committee.

PPC ....Pre-scored Punch Card.

CDC ....Center for Disease Control.

DRE..Direct Record Electronic.

CHAPTER 1: INTRODUCTION

The 2020 United States presidential election was a pivotal moment in American politics. After the election of Donald Trump in 2016, the next four years were characterized in the popular press as politically, socially, and economically tumultuous. With increased political polarization, racial tensions, and unclear foreign relations, the 2020 presidential election cycle was a moment in which the future of the United States of America was under deliberation by legislators and the public.

The 2020 presidential election provided an interesting case study concerning voting technology. Not only did the 2020 presidential election report the highest voter turnout since the 1900 presidential election (72.7% registered; 66.8% voted), but there was also a significant shift in how citizens cast their votes, with 69% of voters choosing to use nontraditional methods (Cassidy, 2021; Fabina, 2021; Scherer, 2021). Due to COVID-19 Pandemic considerations and restrictions, the use of nontraditional voting methods, such as mail-in voting, coupled with logistical issues, complicated an already intricate system of casting and counting votes. It is important to note here that mail-in voting dates back to Civil war times yet has never been a primary mode of conducting a popular election in the history of the United States (Rontondi, 2020; Strochlic, 2020). Thus, the popularization and mass adoption of mail-in voting, also known as absentee ballots, was a phenomenon unfamiliar to the American populace.

Perhaps this complication opened the door for widespread criticism of voting technologies and methods during the 2020 election cycle. Despite extensive research concluding that voter fraud – illegal voting, improper counting, etc. – is infrequent today, the 2020 U.S. presidential election was marred by repeated claims in the popular press of non-citizens voting, tampering by outside entities, and discarding/intentional miscounting of mail-in votes (Bump,

2021; Cox, 2020; "Myth of Voter Fraud," 2021). Though failed, many of these claims took the form of formal lawsuits that attempted to block the certification of ballot counts ("Courts have dismissed multiple lawsuits," 2021; "Tracking election disputes," 2021). However, 70% of voters on the losing side believed that illegal voter fraud contributed to their candidate's loss ("Voter's Reflections," 2021). This large percentage illuminated the extent to which claims were perceived as efficacious by certain portions of the population.

Here, it is essential to note that scholarly research on voting efficacy and trust has provided explanations for why levels of agreement in fraud were so high despite courts repeated dismissals and refutations. The causal role of political trust in elections is hotly debated, and scholarly inquiry has yet to yield a conclusive or firm resolution (Hooghe, 2018). For instance, while some studies argue that perceptions of increased voter turnout make voters less inclined to vote, others have not found significant causal evidence that decreased voter trust has a direct relationship to voter turnout (Wang, 2016). Thus, high levels of distrust of the voting process may not necessarily have a causal relationship between an individual's decision to cast or not cast a ballot. Instead, misinformation surrounding the electoral process can function to provide voters with varying criteria and differentiation factors for what information is "true" or representative of "reality" (Hameleers, 2020). Based upon these constructions, voters may have more or less trust in the voting process and, consequently, more or less belief in claims of voter fraud.

To date, scholarly communication research regarding the 2020 presidential election has explored fake news, debate structure, identity, populism, trust, linguistic usage, and much more (Chen, 2019; Kelly, 2020; McKinney, 2021; Rossini et al., 2021; Wright, 2021). However, the following case study focused on the unique interactions between the technical, material, and

propagandic/discursive components of voting technologies that mediate the voter's experiences and participation in the democratic process. While there have previously been notable instances of research in political science and computer science addressing voting technologies, particularly ballot designs, the projects are now somewhat dated and subject to revision following the 2020 election (Jones & Simons, 2012; Saltman, 2006). The following project incorporated and built upon existing research to provide a novel intervention into voting technologies' technical, political, and social impact during the 2020 U.S. presidential election.

A Brief History of Propaganda

Historically, the term propaganda has vacillated in denotative and connotative meanings. Before the sixteenth century, propaganda was rooted in Latin and referred to the biological processes of plants and animals. Religious leaders, such as Pope Gregory XIII, Pope Gregory XV, and Pope Urban VIII, created commissions and groups to spread the ideas of the Catholic church via missionaries which might be viewed as one of the earliest attempts at an organized propaganda effort or campaign. Non-religious uses of the word appeared in English in the eighteenth century. Although appearances are infrequent, they generally occur within a political or military context (Fellows, 1959). Thus, during the 18th and 19th centuries, the term began to acquire its contemporary connotation and consequent impact.

While propaganda can be traced back to the Church of Rome's response to the wave of reformationism in the 16th century, it was not until the 20th century that the term was commonly used. Primarily, the word surfaced surrounding military discourse. As argued by Kittler (1998/2002), "war is the mother of all things" (Winthrop-Young & Gane, 2006). Though certainly not the first instance of military propaganda, WWI marked the acknowledgment and incorporation of propaganda into war efforts on all fronts (Reeves, 1986). Bernays (1942), a

pioneer in the field of propaganda and public relations, commented on how "during the Great War, the nations realized the necessity of selling their national aims and policies" (p. 6). In particular, WWI marked new developments in warfare coupled with static methods which diverged from esoteric notions of war (Mosely, 2022). As put by Taylor (2002),

> "War could no longer be regarded as a sport fought between gentlemen playing by the correct rules. Instead it became a bloody relentless struggle in which sustaining morale became just as essential for both sides as sustaining the military effort. It was not just a battle of troops, guns, submarines, ships, and aeroplanes but a battle between entire peoples" (p. 177).

With the advent of "total war," propaganda became an integral component of the international conflicts that would define the early and mid-twentieth centuries (Finch, 2000).

The advent of total war coincided with the first mass communications revolution. While the industrial revolution preceded the war and led to the reorganization of class, community, and work structure, the communications revolution reordered the basis upon which information was valued (Carey, 1965; John, 1994). Nearly simultaneously, the infrastructure necessary for telegraph, radio, and print reached full maturity, and the public policy exigencies created by WWI found a use for such infrastructure. For instance, the telegraph enabled information to be transmitted nearly instantaneously across thousands of miles. The importance of the telegraph was reflected in the "code-breaker" surveillance and physical demolition efforts of British underwater telegraph cables by German forces (Bruton, 2017).

Furthermore, developments in print technology allowed for written documents and images to be reproduced quickly and efficiently (Rudnick, 2017). As will be discussed shortly, the proliferation of pamphlets and posters used to galvanize one side and demonize the other

became common in streets all over Europe (Rudnick, 2017). Moreover, improved modes of transportation, for both people and humans, including the (newly invented) plane, train, the automobile, and more, allowed for information to be disseminated quicker than ever. Altogether, these technologies allowed the movement of information and people at rates not previously experienced.

The realization of the utility of propaganda, coupled with the invention and proliferation of mass communication machinery necessary to distribute materials quickly and efficiently, was not reserved for a single country. Each nation pioneered its propaganda department, albeit they went by many different names. In the United States, the "Creel Commission" was designed to garner support on the Homefront and promote American messaging abroad (Zaharna, 2004). In Great Britain, books and leaflets were distributed by the British War Propaganda Board to both the enemy (via "drops") and citizens (Scriver, 2015). In Germany, popular press articles prior to the declaration of war galvanized public support for violent incursion and framed the interpretation of the conflict as unreconcilable through peaceful diplomacy (Ther, 2017). Early on, while the United States was sticking to isolationist policies, some men were volunteering to fight for France, and propaganda films constructed an image of soldiers and the cause they were fighting for, which laid the groundwork for intervention in the War (Collins, 1992). Following the destruction of the Great War, including a significant loss of life and decimation of Europe's infrastructure in general, propaganda was a force to be wielded.

Notably, the first world war signaled a convergence of print and electronic media. Acreneaux (2019) argued that the Wireless Press was an "interim link in the evolution of a media technology, as wireless telegraphy transitioned to radio broadcasting" (p. 318). Carey (1988) stressed the importance of the telegraph in shaping communications of the early 20th century.

Specifically, Carey (1988) conceptualized the telegraph as a medium that removed the linkage between information and physical transportation and was presented within the narrative of the technological sublime. The telegraph, which was integrated into society before WWI, paved the way for the quick and easily reproducible transmission of ideologically skewed propaganda.

With the acknowledgment of the importance of propaganda, which had yet to carry a negative connotation at the time, we can see its formal and thorough integration into the war efforts in which the United States of America was involved during the 20th century. In WWII, propaganda posters were used to depict Hitler as a threat and to galvanize the homefront in support of soldiers (Aguirre, 2018; Vallee, 2012). Additionally, the maturity of radio networks, with over 80% of households containing at least one radio by 1940, led to the integration of governmental/militaristic messages integrated into commercial programming without explicit reference (Cunningham, 2014; Horten, 2002; Socolow, 2007). That is, films, radio, and print publications in the United States and Europe that were branded as entertainment as opposed to political functioned as propaganda messages in such a manner that Americans saw, heard, and internalized messages with unacknowledged ideological consequences (Horten, 1996; Jason, 2013; Pertocelli, 2020).   In later years, the popularization of television allowed citizens to become viewers of the horrors of the Korean (1950-52) and Vietnam Wars (1955-1972). Propaganda muddled the lines between observers and participants in politics and war.

Technological, Institutional, and Cultural Approaches to Propaganda

As illuminated by previous points, a significant portion of propaganda scholarship has dealt with matters of warfare and the politics surrounding such issues. In many ways, warfare, politics, and propaganda are inextricable (Packer & Reeves, 2020). As offered by Mao Zedong (1938), "politics is warfare without bloodshed" (p. 153). However, there is another intertwined

element that has been implied in previous research: media technologies. Lippman (1922) argued that "as a result of psychological research, coupled with the modern means of communication, the practice of democracy has turned a corner" (p. 162). Ellul (1973) echoed such concerns arguing that the form of propaganda was

> based on scientific analyses of psychology and sociology…[and] is scientific in that it tends to establish a set of rules, rigorous, precise, and tested, that are not merely recipes but impose themselves on every propagandist...No longer does the man of talent determine the method, the approach, or the subject: all that is now being calculated (p. 4)

The scientific nature of 20th-century propaganda lent itself to what Ellul called la technique, in which the medium of communication limited the potential modes of thought. In other words, the form of thinking made dominant by electronic technologies allowed individuals to only think in terms of efficiency and progress. Building upon this notion, Ellul (1973) defined propaganda as "a set of methods" (p. 61). Slightly preceding, Ellul, Sapir and Whorf (1956) argued that language was both a human artifact and a powerful medium of its own that significantly impacted how humans perceive an act within their environments (Alexander, 2000; Cipolla, 1977). Although indeed not the first theorists to hint at linguistic reflexivity, the Sapir Whorf hypothesis foregrounded the public recognition of the notion that the linguistic choices and media forms carrying messages – such as propaganda engendering support for war – can drastically alter how the world is seen (Hussein, 2012). Thus, the form of the medium – from written language to radio – through which propagandic content is disseminated becomes integral in understanding the range of opportunities for the formation of opinions and eventual active or passive political participation.

Ellul's work on propaganda in the 1970s marked both a returned interest in the study of propaganda and the push for an explanation more nuanced than the archetypal trope of "bad guys telling big lies" (Black, 1991). As stated above, theorists began conceptualizing propaganda in terms of interlocking forces. Perhaps some of the most notable theorists, Herman and Chomsky (1985), created a propaganda model highlighting institutional ownership and power. Per Klaehn (2003), the propaganda model

> contends that elite media interlock with other institutional sectors in ownership,
>
> management, and social circles, effectively circumventing their ability to remain
>
> analytically detached from other dominant institutional sectors (p. 359)

While the propaganda model has been condemned for being conspiratorial and intent-driven, it illuminated the intertwined nature of political, economic, and material elements constituting propaganda. Additionally, the propaganda model provided a structural and institutional explanation for propaganda that supplemented psychological explanations (Mullen, 2009). It also highlighted the manipulation of elite media institutions and individuals while not privileging one over the other but viewing them in combination (Pedro, 2011). Overall, the propaganda model marked a vital contribution to propaganda scholarship by focusing on propaganda content and the structures that empower propaganda.

Both structural and linguistic manipulations of public opinion garnered significant scholarly attention, particularly in the 21st century and primary digital cultures. Sunstein (2009) argued that the internet fundamentally alters the mode through which democracy is conceptualized and conducted. In recent times, it has become fashionable to describe the U.S. as a post-truth society in which individuals are doomed to manipulation and misinformation in which universal epistemic foundations and formations of truth are shattered (Farkas & Schou,

2020). Benkler et al. (2018) have argued that the 2016 presidential election was an exemplar of the epistemic crisis in the U.S. media ecosystem that highlighted

> there is no single effect that the internet has on democracy, or on news media, or on people's ability to tell truth from fiction. In America, "the internet" is really two very different media ecosystems. One conforms to the very worst fears of those critical of the effects of the internet on democracy…the other is closer to the model of the networked public sphere (p. 383)

In other words, Benkler et al. (2018) argued that scholarship must attend to both novel and technological factors and the dynamic structural relations between political institutions, culture, and technology. While we will address the zeitgeist of the post-truth moment in later sections, it is sufficient here to note that digital technologies and political discourse have brought an epistemic – at least in appearance – question to the forefront of public thought.

Therefore, the following dissertation investigated the technological and human elements of propaganda. Specifically, the claims of voter fraud and surrounding propaganda from the 2020 United States presidential election were included in the case study. Methodologically, the present study utilized a new materialist framework coupled with select concepts from media ecology to highlight previously undiscussed or underemphasized elements of propaganda in an ostensibly precarious 21st-century democracy.

Theoretical Framework

The following study employed new materialism as a primary vehicle of understanding and analysis with concepts from media ecology incorporated to supplement analysis of the 2020 US presidential election. Both traditions represent disparate intellectual strands of thought encompassing and enveloping many disciplines. Central to their intellectual endeavor, new

materialists seek to renew a discussion about human nature and the nature of matter (Frost & Coole, 2010). Through a reconceptualization of dichotomous relationships between self/other, mind/body, nature/society, etc., new materialists seek to reaffirm the agency of both human and non-human bodies. In a similar vein, media ecology, according to Strate (1999), "is the study of media environments, the idea that technology and techniques, modes of information and codes of communication play a leading role in human affairs" ("An Overview," 2021). Put another way, media ecologists seek to understand how we shape our media and media environments, as well as how media shape us. Both fields of thought have something novel and compelling to say about technology and human experience.

New Materialism

New materialism sprouted up in the late 1980s and early 1990s in feminist studies as a response to the perceived over-emphasis on language and rhetorical choices in humanistic inquiry. After the linguistic turn in sociology, many scholars felt that individuals were becoming detached from their physical corporeality (Lemert, 2004). In an attempt to combat this linguistic turn in sociology, new materialism suggested a "renewed" materialism in which emphasis was redirected from linguistic and rhetorical choices back to material bodies (Frost & Coole, 2010). This approach also doubled back from structural sociology in the sense that it included the materiality of both human and non-human actors. While theorists within this broad discipline pull from a variety of academic disciplines and schools of thought, they are united by their challenging of the classical ontologies, rejection of matter as a secondary form, adoption of a contestable metaphysic and cosmology, and their acceptance of the human subject as a real formation, but not necessarily the ground of all experience (Connolly, 2013). From this perspective, new materialism, or "renewed materialism," as some theorists have contended, is an

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attempted answer to the absolute relativism borne out of the linguistic/postmodern turn and an abdication of objectivity as conceptualized in social scientific approaches.

One of the more prolific scholars within new materialism is a physicist turned theorist Karen Barad. Beginning with the experiments and correspondence of Neil Bohr and Werner Heisenberg in the 1930s, Barad (2007) argued that the physical principles of uncertainty and indeterminacy illuminated the ontological inseparability of the characteristics of a particle and a wave. Specifically, the uncertainty, or interdeterminacy, principle argues that the position and velocity of an object cannot be accurately measured simultaneously (Heinsenberg, 1927). To be clear, the articulation of the uncertainty principle is not universally agreed upon amongst physicists to this day, which will be discussed later in the present work (Li & Qiao, 2021; Uffink, 2016). However, based on the work of Bohr and Heisenberg, the ontological inseparability of particles then is philosophically extrapolated by Barad (2011) because "uncertainty principles represent an absolute in principle limit of the possibilities for knowledge-making, not a practical limit that might be overcome (p. 443). In other words, the limits of human knowledge are not merely practical or functional inabilities to capture the world "as is" but highlight the degree to which components are dependent and transient.

Consequently, Barad (2007) concluded that ontological inseparability necessitated a shift from classical mechanical thought to quantum logic. Such a shift hinged on the acknowledgment of agential cuts made by the researcher through the research apparatus to the extent that basic notions of agency and objectivity must be reworked. Traced back to Bohn (1927), this account, often known as the Copenhagen interpretation of quantum physics, is in direct opposition to the cartesian dualism of the subject-object perspective (Barad, 2014). Pushing toward performativity of matter, Barad (2007) then reconceptualizes interventions in the sciences not as simple

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observations but instead as "agential cuts" which, as stated by Barad (2010), "do not mark some absolute separate but a cutting together/apart" (p. 265). Put another way, agential cuts do not mark the absolute separation between phenomena and researchers. Instead, they illuminate the interconnectedness and intra-acting agents present within each phenomenon. The effect is a reworked notion of relations between object and subject that neither fully separate nor fully homogenizes either phenomenon.

In this move away from Newtonian mechanics toward Quantum logic, Barad showed the manner and modes in which we study phenomena were inherently ingrained with the phenomenon themselves and, therefore, must be studied as such. While Barad is a central figure in the philosophical tradition of new materialism, later sections will illuminate how the scholarship of other theorists bolsters Barad's ultimate conclusion. Essentially, by reconfiguring phenomena and their components as ongoing, heterogeneous interactions, once crystallized concepts and their implications on the physical and social world become subject to reconsideration.

Media Ecology

New materialism, particularly the concepts of Barad, serves as the central analytic framework for studying the phenomena. However, in dealing with material elements of media, select concepts from media ecology can bolster the analysis to provide a unique and illustrative account of the 2020 US presidential election. With media ecology, we find neither a field nor a discipline. Instead, media ecology can be conceptualized as an intellectual tradition, a theory group, or an invisible college (Lum, 2006; Strate, 2018). Media ecology is an approach or perspective on media environments united by a set of questions and a shared sensibility. Primarily, scholars under the banner of media ecology, whether they associate with the group or

not, look at how the form of media changes forms of knowledge, action, and praxis. The roots of media ecology can be traced to the works of Lewis Mumford and Harold Innis in the early to mid-twentieth century. Specifically, Mumford connected epochs to the dominant media of the time, while Innis (1951) showed how civilizations rise and fall through the monopolies of knowledge created by the biases of the dominant media of the times. These two seminal works would pave the way for media ecologists to come.

For this study, several concepts from media ecology will be incorporated into the new materialist framework for analysis. Similar to new materialism, the field can often be located by prominent scholars writing on relevant matters. Thus, the ideas of Marshall McLuhan can serve as a starting point. Generally regarded as one of, if not the most, important voices in and advocating for media ecology, McLuhan popularized a form of media studies that focused not on media content but on the form (Cali, 2017). McLuhan (1964) provided perhaps the first axiom of media ecology: "the medium is the message." Later adjusted to "the medium is the massage" (McLuhan, 1967), this axiom paved the way for diverting thinking away from the content of a message toward its structure. In doing so, McLuhan sought to alert audiences to the non-neutrality of media technologies. In opposition to the notion that humans were always using technologies for their purposes, McLuhan argued that our media also has the propensity to use humans.

To further this argument, McLuhan developed several theoretical and methodological tools for analyzing media and avoiding the rampant somnambulism engendered by the perceptual and behavioral routines of automaticity that he perceived as a threat to the health of society. Namely, McLuhan's concepts of the human sensorium and figure/ground offered the analytic language not provided by new materialism.

In dealing with the senses, McLuhan calls upon a notion he terms the human sensorium. The idea of the sensorium, as argued by McLuhan, intimated that there is a homeostatic sensory position for individuals granted by the perceptual tools of self and environment (Harvey, 2006; Miroschnichenko, 2016). But, when individuals extend themselves through media forms, their perceptual tools – and consequently how they interact with their natural and artificial environments – are altered. As stated by Gow (201),

> over time the user becomes numb to the structuring effect of technology much like one
> quickly becomes oblivious to the constant humming of an air conditioner in a closed
> room. McLuhan refers to this as the stage of autoamputation, and it is at this point where
> a crucial reconfiguration of the body and the mind takes place (p. 22)

From this line of thinking, the inability to recognize the effects of media forms on messaging and message processing leads to a propensity to misinterpret the overall effect of socio-cultural phenomena.

Second, figure/ground analysis is an important term in understanding the work of McLuhan. To McLuhan, the figure is the content of a message, such as the spoken word, the written/typed word, the image, and the moving image. Conversely, the ground is considered the environment or the context from which the content arises. In an often obtuse and confusing manner, McLuhan's work starts with the ground and works towards the figure. This approach radically reworks social scientific conceptualizations of cause and effect (Logan, 2016). Specifically, McLuhan relies on notions of formal causality during a period in which efficient causality was considered the dominant logical mode (Anton, 2012). As opposed to effects following from direct causal factors – i.e., efficient cause –McLuhan and Zhang (2012) clarified that "the formal cause of something is the ground that gives rise to it" (p. 441). For example,

television is the ground of the program/show (McLuhan & Zhang, 2012). The television as the ground does not necessarily cause the program itself. Otherwise, there would be no variation in program type. Rather, the program – i.e., figure – emerges from the ground and a multitude of other factors simultaneously. Yet, television – i.e., ground – plays a substantial role in the production and reception of the resultant program. Under this interpretation of causation, figure and ground are in constant, non-linear contact with each other.

Altogether, the above concepts provide the basis of what might be considered a media ecology sensibility. Throughout the history of media ecology, those practicing under its banner – knowingly or merely claimed by others under the banner of media ecology – it is diverse, open-ended theoretically and methodologically, and explorative (Lum, 2006). The above concepts and figures help to give some shape to the amoeba-like nature of media ecology and ultimately bolster the new materialist analysis. McLuhan, as the father of and occasional paragon (and martyr) of media ecology, and the concepts of autoamputation/human sensorium, and figure/ground emphasize the significant importance and role of media technologies in human interactions. Moreover, Postman and Strate – the former responsible for institutionalizing the field in the 20th century and the latter responsible for periodically maintaining its integrity and organization into the 21st century – introduce contextual analysis as a systemic way of thinking about an intellectual field that is anything but systemic. In concert, the above concepts in media ecology help provide some of the rigging and scaffolding that will eventually be incorporated into the analysis.

Theoretical Model: Materialism, Media, Environment

Thus, the research project to follow adhered to a model of new materialist inquiry with selected concepts in media ecology supplementing the analysis: both fields study environments

and the human's place and purpose within the environment. However, as the above writings in new materialism and media ecology suggest, both approaches are complex, novel, and often maligned by both linguistic and social scientific paradigms of thought. The present study was not intended to antagonize nor criticize either approach or paradigm of thought. Instead, the fields of new materialism and media ecology are united here to offer another way of thinking about and understanding phenomena. For clarity, the methodological structure melded the ideas of a few key researchers within each field. Primarily, the concepts pushed forth by Marshall McLuhan, Karen Barad, Nick J. Fox, and Pam Alldred will be utilized.

First, new materialist inquiry will serve as a platform to analyze the affects and interactions of components on each other and the overarching phenomena of interest. Fox and Alldred (2013) provided a formulaic expression of new materialist inquiry that accounted for the phenomena assemblage and interacting elements and the research assemblage and interacting elements. This framework will exist as the base for which the concepts and language of Barad will shed light on the relations between, within, and across the phenomena at hand.

Second, the theoretical model was informed by what will be called a "sensibility" derived from the intellectual tradition of media ecology. The primary driving notion of which is that the "medium is the message" and the "medium is the massage" (McLuhan, 1964; McLuhan, 1967). This sensibility requires approaching a subject with explicit attention paid to the substantial role that media can play in human affairs. Building from there, select concepts such as autoamputation, figure/ground, human sensorium, and formal causality aided in conceptualizing the technological and mediated components present within the phenomenon. These elements will be integrated into the format of the new materialist inquiry outlined above.

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In practice, media ecology served as the undergirding presuppositions guiding the new materialist inquiry framework. The former afforded the researcher a focus on the technical components and machinery present, whereas the latter invokes an increased awareness of the interactions between parts and wholes of all material and discursive components. Overall, the framework illuminated how voting conceptions and processes are produced and affected by and through varying components designed to carry them out.

Chapter Outline

The following dissertation was split into four main sections. The first section describes the problem at hand and reviews relevant literature. The second section dealt with the development of the methodological apparatus being implemented to study the phenomena. The third section used the 2020 U.S. presidential election as a case study for new materialist inquiry into voting technology. The fourth and final section outlined conclusions, discussed implications, and suggested future directions for research. The study's primary contributions were to the development of new materialism and media ecology, as well as an ontological intervention in voting technologies and how voters experienced voting in the 2020 US presidential election. Further descriptions of each section are provided below.

The first section introduced problems that arose due to the relationship between propaganda, media, voting technologies, and democracy writ large. Pulling on academic scholarship from communication, sociology, history, political science, law, psychology, economics, philosophy, and statistics, this literature review outlined the role of certain media technologies in the minds and hearts of individuals and society at large. The literature on presidential politics, voter fraud, and democratic functions was also surveyed, and relevant

studies were included. The first section established the linkages between propaganda, media technologies, and politics.

The second section developed the theoretical framework underpinning the methodological contribution to new materialism, media ecology, and communication research in general. To accomplish the above task, the primary analytical tool – the new materialist framework for analysis – will be broken down into its parts. Following elucidation of the primary model, the key and relevant fields of new materialism and media ecology were sketched independently. Here, we will become primarily interested in the works of Karen Barad and Marshall McLuhan. This approach carved out an area between what might be conceived as the subjective desperation of postmodern thought and the total objective conviction of positivist scientific methodology.

The third section conducted a new materialist analysis of voter experience and voting technology in the 2020 US presidential election. The analysis investigated the technical components of in-person and absentee/mail-in voting, the material infrastructure and environment in which these technologies are emplaced, and the discursive and voter fraud propaganda that swirled through public discussion during the election. Moreover, in identifying different technological components mediating the 2020 presidential election, it was shown that the devices mediating the election have agency in determining how results are portrayed, perceived, and ultimately acted upon.

The conclusion, implications, and future research directions were discussed in the final section. Ultimately, the case study can be seen as an illumination of the unique ontological moment that the digital age presents voters. The case study, dealing primarily with the 2020 U.S. presidential election, highlighted how different media technologies (ranging from paper/mail

voting to electronic voting, etc.) make "cuts" on the voting process that spatially and temporally restructured voter's experiences of voting technology and the functions of democracy. Overall, the present study provided a new interpretation and understanding of one of the most impactful socio-political moments of the 21st century.

<center>**CHAPTER 2: HISTORY OF VOTING IN THE UNITED STATES**</center>

Voting in the United States

      Voting is often lauded as the cornerstone of democracy in the United States. Held up as a paragon of freedom and ethical governance, voting has been continuously purported throughout United States history to be an unmediated experience between citizen and democracy, in which the stated political views of the citizen are recorded in some manner to directly affect the outcome of political elections. For instance, the archetypal experience Americans assume is that an individual travels to the polls, casts their vote, and their political opinion has been voiced and heard without any intervention. However, a historical review of voting theories and material practices showed that the process is not, and has never been, quite so simple. The following section reviewed the history of voting practices in the U.S. and contemporary controversies surrounding voting in the 21st century, creating a better understanding of the past and present state of voting in the United States.

History of Voting in the United States

      Voting in Provincial America. Often taken for granted, the philosophical and practical underpinnings of the United States voting system have scarcely remained static throughout history. Importantly, voting has been at the forefront of Americans' minds since Colonial English Rule. Upon landing in Jamestown in 1607, a formal election was held to decide on council members that would help make decisions for the newly landed colonizers (Crews, 2007). In line with English and European customs of the time, a small number of individuals were considered eligible to participate in elections. In colonial times, an individual was not eligible to vote if they were a woman, an enslaved person, under 21 years of age, Jewish, catholic, or were too poor to own land ("Who voted," 2021). In essence, voting was restricted to white, male landowners

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illuminating the extent to which – since well before the formal and legal establishment of the United States – voting rights and procedures have not been equally accessible to all in the United States.

In the initial Jamestown election, the seven-man council was predetermined by a secret ballot box, and then those men were responsible for selecting a "president." Curiously, the result of the first election on American soil, conducted by the seven council members, was blocked due to ethical concerns about the electee, John Smith, who spent most of the 4-month journey across the Atlantic ocean locked up after being charged with mutiny by the leader of the expedition, Christopher Newport ("John Smith, 2021; "Voting in Colonial Virginia," 2021). When the council found out that Smith was to be on the council, he was released and ultimately became an integral figure in the early survival of Jamestown ("Captain John Smith," 2015). It is important to note that even though scholarship reported the spirit of early colonial America was democratic, ultimately, the colonies were still subject to the aristocracy of England, as evidenced by the first charter, which left all power vested in the King of England (Tyler, 1897). Another point of evidence might be that Smith, an imprisoned man, was released and allowed to lead at the behest of the secret, predetermined ballot box sent with the expedition by the aristocracy. Regardless, this would be a running theme in early American electoral politics, as aristocratic roots clashed with germinating democratic ideals.

Despite early literature focusing on the aristocratic dominance in the colonial elections, Dinkin (1977) showed how colonies experimented with varying democratic theories and practices. Building from European and English ideas, the 13 colonies experimented with different forms of representative governance (Dinkin, 1977). At the center of the discussion was suffrage (the right to vote). Though it is now established as a constitutional right, early

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conceptualizations of voting were that it was something to be granted to people, as opposed to a human right inherent to their being, albeit a right that ultimately is lost (i.e., due to incarceration, incompetence, etc.) (Glenn & Kreider, 2020). In line with aristocratic thinking of the times, the privilege of voting was conferred upon and granted by a small number of individuals already in power. While it is not necessary to delineate between each theory and system implemented in colonial America, it is important to take heed of the English and European influence on the early conceptualizations of voting. Voting systems did not appear out of thin air; they were spawned from meeting old aristocratic traditions with a new democratic spirit not yet comprehensively distilled.

Perhaps uniquely illuminating the "democratic spirit" often referenced by literature on voting in provincial America was how the actual act of voting occurred. Although limited to a very select few individuals (which will be addressed in a later section), elections were convivial events. Typically, voting "parties" were thrown in which men [sic] drank and ate to excess, taking only a brief moment to either verbalize or write down the indication of their vote in front of everyone else present (Blakemore, 2019). Interestingly, these gatherings were often put on by those being voted for and in many ways, might be considered a form of bribery by contemporary standards, yet such practices were commonplace and generally considered publicly acceptable at the time (Mintz, 2018; Schudson, 1998). Moreover, voting fraud was rampant, as opposed to scarce. The primary way fraud occurred was by landowners granting deeds from small tracts of land to men without land so that they may vote in a predetermined direction (Blakemore, 2020; Litt, 2020). Although democratic functions were experimented with during colonial times, ultimately, there was still an elite group of individuals creating and exploiting the policies that

enabled individuals to vote and ultimately have a voice in their communities (Schofield & DeSimone, 2004).

      The Revolutionary War: Voting on a Nation. Voting practices in provincial America represent less of an entirely new system than an extrapolation of aristocratic rule in England. Even though there was a certain change of spirit evident in the early settlers, their forms of governance were still largely constrained by the greater imperial nation to which they ultimately belonged. The revolutionary war marked a turning point in American voting policies and practices in which the colonies began to experiment without the British monarchy's preexisting controls. While numerous interpretations are cited as to why the revolutionary war took place, the war itself can ultimately be seen as the boiling point between democratic theories and aristocratic ruling methods. Many historians distill the variegated causes of the revolutionary way to the idea of "who shall rule at home" or "home rule" (Sarson, 2008). "Home," in this case, was America, which was at the time controlled by a governing body housed thousands of miles away. Rule is inherently intertwined with voting, as the votes themselves carry out the will of the community.

     Following the Revolutionary War, leaders were now tasked with determining exactly what "home rule" would constitute. Initially, the Articles of Confederation served as a stop-gap measure to provide momentary and minimum uniting principles for the newly formed union. However, it was quickly realized that the articles of confederation were largely ineffective as a uniting document and needed substantial revision to sustain the newly formed nation (Feinberg, 2002; Freedman, 1978). In perhaps a moment of over-correction, the articles of confederation gave the federal government no taxing power and no regulatory power over the states leading to

regional squabbles and a national financial crisis. Thus, by the mid-1780s, the young United States attempted to re-work the document at the constitutional convention of 1787.

The format of the convention might be considered a holdover from colonial times. The convention, whose explicit goal was to revise the Articles of Confederation, was kept entirely secret from the public. Thus, the 55 selected members were delegated privately and outside public opinion or scrutiny. Additionally, the delegation process was largely held in a town hall setting where the delegates had intense verbal conversations and votes. Thus, the founding of future America was determined in a setting and mode of governance of a time that was already a part of the past.

Interestingly, voting was initially left out of the Constitution of 1788, and protections and policies were largely left to the states to determine (McBride, 2021). Moreover, McGuire and Ohsfeldt (1989) argued that the particular context of the 1780s, which included slow communication technologies, one-time appointments, and minimal legal institutions limiting action, led to individuals with wealth being more likely to support the ratification highlighting the intertwined nature of voting and economic interests; a seeming confirmation of the preceding governing structures.

In what might be considered one of the most important votes in American history, the newly updated articles of confederation, now called the Constitution, went to the states who each voted independently to adopt or not adopt the document. Each state was given 6 months to decide (Maeir, 2010). That said, it is important to avoid both a states-first and union-first approach in describing how voting occurred on the ratification. As argued by Green (2020),

> States and the United States were created by a revolutionary independence, and they
>
> developed simultaneously in that context as improvised entities that were profoundly

independent and mutually constitutive, rather than separate and

sequential…characteristics of American states and statehood were created and negotiated

in the same historical moments as the United States' central government…States and the

United States repeatedly leaned on one another for support and recognition, operating and

functioning together, of necessity and also by design (p. 8)

In other words, to adequately provide historical context for the vote that created the United States

of America, intellectuals must avoid segmenting and bracketing certain elements of the

phenomena from the equation. To posit one singular theory or conceptualization of the reasons

for and eventual choices made in ratifying the Articles of Confederation obfuscates the

complexity of the phenomena. Voting impetuses and practices are rarely distilled to an A-B

causal relationship, as evidenced by the vote that created the first form of the United States of

America.

  Voting and the Development of the Modern United States. As the young United States

distanced itself from its creation, voting practices changed. While early political decisions and

voting practices were shrouded in mystery and left largely to a group of elites, public sentiment

and ability began to shift in the 19th century. Despite high-minded ideals, voting practices in the

early American – particularly decisions about the nation's creation, preservation, and future –

were largely left to a small group of individuals. As the United States progressed economically,

socially, and technologically, during the first industrial revolution coming to maturity around the

1820s, more individual citizens than ever not only had access to information about candidates

but also could understand and craft opinions on such matters (Crafts, 1996). Thus, the

contemporary notion of the importance of voting was created and intensified. In paraphrasing

Thomas Jefferson, Beinhart (1989) argued that

This idea…is central to the American political tradition: the greatness of a democratic

nations rests not with its leaders but with its people…[and] voting is the instrument by

which most Americans communicate with their leaders. Citizens give support to certain

issues, candidates, or parties, but most importantly they give their support to a system (p.

144)

While it might be concluded that the importance of political participation was imbued in the

nation's founding, the stark hypocrisies of voting access in the 19th and early 20th centuries

contradicted the realities of voting for many individuals across certain populations. During the

1830s, citizens questioned the methods used to cast their votes seriously. Such contradiction not

necessarily increased the seriousness with which voting was revered but – at the very least –

illuminated the value and power of public opinion (DeFleur, 1998).

A driving factor of this shift was the proliferation of the printing press in the United

States. While pamphlets and local papers were lauded as fueling the revolution, the print industry

was only beginning to exit its infancy in the United States during this period (Parkinson, 2020).

To be clear, this was when literacy was the primary medium. However, typography had yet to

reach its full potential as would be realized in the century to come (Einstein, 1979). Even though

it can be said that during revolutionary times such pamphlets and papers were loaded with dense

information on politics, business, and other serious matters – the conversations that burned in

taverns and town halls across the United States were largely inconsequential in the actual voting

process, as the decision still came down to a group of elites (Howard, 2017). The printing press,

though it did not change the legal restrictions placed on voting for certain populations (i.e.,

women and people of color), made the potential power of public opinion apparent. However, it

must be remembered that early works in public opinion were often based on racialist and elitist

ideals. For instance, James Bryce, whose work substantially informed the methods developed by Gallup in the 1930s, advocated against egalitarianism, instead favoring a system of governance in which a few elites combatted the ignorance of the masses (Bradshaw, 2002). Thus, it is important not to equate engagement with elections/politics with participation in elections. Still, the former led to political battles about the former during the 18th century due to the printing press making such information more widely available outside of elite circles ("Turnout Results 1789-present", 2021).

The technology used to cast, collect, and count votes changed during this period. Notably, voice votes were slowly phased out. In the 19th century, most votes for elections were cast and counted using paper ballots. Seemingly simple, there were few regulations nationally mandated ballots. With the exception of paper type and size, the political parties, party operatives, and candidates were largely responsible for choosing the ballot format, which led to frequent confusion and intentional and unintentional voter fraud (Electioneering," 2022). Thus, even though the technology (i.e., paper) remained all but constant during the 19th century, the actual format of the ballot took a multitude of forms. During the 19th century, a common ballot format would have been implemented in different ways by local party officials. These ballots often looked more like advertisements than ballots as we see them today. They might have included information about the candidate, policy positions, and perhaps even visual images meant to portray candidates in a certain light. Altogether, the format of such ballots would appear unfamiliar to the contemporary voter.

Additionally, the 19th century was a time of great change for the United States overall. A primary contributor to the changes was the massive increase in population spurred by increased immigration. Between 1790 and 1920, the population of the United States increased from 4

million persons to 107 million persons (Haines, 1994). Particularly, immigration moved a massive number of individuals into cities as the industrial revolution went into full effect. With labor laws lagging behind the times, corporations could gain massive amounts of wealth and influence in a short period. This paved the way for corruption on a large scale. Nicknamed "rings," there were elite groups that made concerted efforts to control the election of favored individuals to offices of interest to the business (Saltman, 2006). These "rings," though varied in interest, were united by several tactics in suppressing votes. First, they would often form "gangs" that would receive papers from party officials that specified a name and residential address to cast votes. They would repeat this process for multiple names and multiple addresses. Second, "rings" would make sure that the individuals tasked with counting the vote were either established party members or that fringe members were bribed adequately so that, in the words of prominent election fixer William Marcy Tweed of the time, "the ballots made no result; the counters made the result" (Saltman, 2006, p. 73).

Though such blatant flouting of voting processes may seem substantially nefarious to the contemporary reader, it is important to consider the context of the 19th century. During this period, "rewards for the party faithful" was still fairly commonplace" without any negative connotation attached (Baumgardner, 1984, p. 417). These rewards could be given and received publicly without fear of public backlash. Patronage politics were particularly strong in the northeastern states, where cities and institutions were older and more deeply engrained (Shefter, 1983). Corruption of this time may completely fly in the face of contemporary conceptions of voting. Still, at the time, prominent public figures can espouse and serve as exemplars of such ideologies and actions without fielding the scrutiny that one might expect in the 21st century.

However, the election of 1888 served as a turning point in which acceptance and encouragement of fraud reached a boiling point in which the problem became too apparent to ignore. In 1888, Grover Cleveland obtained the majority of the popular vote yet lost the electoral vote to Benjamin Harrison (Pallardy, 2021). The "electoral paradox" of 1888, which refers to a result in which the electoral winner is not the same under the direct citizen vote, brought to light how a voting system may or may not directly represent the will of the people (Barthelemy, Martin, Piggins, 2019). Moreover, it has also been argued that 1888, perhaps more than any other United States Presidential election in history, is a more prominent example of rampant and blatant voter fraud. In an increasingly tight race, Cleveland's loss was generally attributed to the widespread vote-buying and stuffing ballot boxes in key battleground states (McKinley, 1970).

The election is also an exemplar of antiquated voting technology. Ballots during the 1888 election utilized a standard 19th-century ballot. Ballots themselves resembled advertising materials more than unbiased markers. Most ballots contained typographical and visual elements with a combination of slogans, typefaces, and pictures depicting party positions that may or may not make one candidate look more attractive than the other (Ackerman, 1998). Moreover, these old-style ballots were often cast illegally in the manner described above. Continued research into Gilded age voting practices finds evidence of rampant voter fraud, even in areas previously thought to be innocent of such acts (Argersinger, 1985).

Additionally, the technology used to campaign and cover elections had evolved during this same time. With the invention of wired telegraphy in 1848, information was dislodged from transportation for the first time in human history (Carey, 1988). Regarding elections, candidates and news organizations could now spread information quicker and over longer distances than ever before. The rise of the telegraph gave rise to modern notions and norms of news gathering

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and reporting that focused on impartiality. Because wire services arose independent of the government and the news organizations, as well as the pay-by-character rates generally established, they wrote "wire news stories" with an eye toward impartiality to be able to sell the stories to more than a single news outlet (Shaw, 1967). This led to a rapid and substantial decrease in the number and type of news stories produced (Shaw, 1967). In addition, the standardization of news stories via the telegraphic wire pushed journalistic coverage towards a universally amenable centrist coverage format (Shaw, 1967). These norms directly contradicted the intentionally slanted and often corrupt political practices of the time. In this model, flamboyant ballots and hubristic patronage politics appeared to be out of place or misaligned in an era in which reporting norms were moving towards non-partisan tendencies. The telegraph offered a new language for politics that privileged individuals who understood and could leverage the potential of communicative elements of the platform. This would be seen in the progressive push of the progressive era to follow.

Moreover, wire services foreshadowed the entire political economy of the electronic era to come for several reasons. First, wire services became the first monopolized industry in the United States and helped form the national character of markets and labor relations as a whole (Craypo, 1978). Specifically, in thinking of news organizations, the telegraph privileged business over public purposes, which inverted previous relations between news and the public and, as argued by Sussman (2016), led to

> enduring effects were its integrative functions in the development of a large-scale, urban-centered, largely private system of mass production, mass media, mass culture, and mass consumption (p. 40)

Second, as the first monopolized communication service, the telegraph (both wired and unwired) illuminated how difficult it can often be to regulate new technologies, especially rapidly developing technologies, at their time of invention and in their early and middle periods of adoption (Acreneaux, 2013). Third, and finally, as the telegraph became a regulated entity and a universally adopted medium, scholars and the public alike began to see the symbiotic and parasitic nature of media communications in which political structures and processes are shaped by media in ways that both threaten and empower certain forms of political authority (Starr, 2004). Kickstarting the electronic era, telegraphy marked the first major dislocation of transportation and information.

The 1888 election was an excellent example of technological norms preceding and foregrounding political change. The widespread and blatant corruption of the 1888 election catalyzed the Progressive movement of the early 20th century. Indeed, the loser of the 1888 election, incumbent Grover Cleveland, spearheaded the efforts to change voting practices because he saw his loss as a direct reflection of such machinations. At the turn of the century, the progressives sought to combat the party machines and rings that they believed tainted true, direct democratic participation (Shaffner et al., 2001). To progressives, the ways that political parties were held together, particularly through their patronage, bred inefficiency and corruption (Wright, 2008). Despite varied historical and sociological analyses debating the efficacy of the progressive movement, they successfully instituted two major reforms to voting practices (Allen & Clubb, 1974). First, the progressives pushed hard and successfully universalized the secret ballot. A secret ballot ensures that the choice cannot be linked to the individual. Early on, this was accomplished by private booths or partitions. Gone were the raucous election parties and voice votes, replaced by ballots that were not disclosed to others to minimize the external

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influence on voting by citizens (Schott, 1979). Second, the progressives implemented a direct primary to further eliminate areas for intervention (Wright, 2008). These two practices changed the landscape of voting in the United States and paved the way for current expectations of voting.

However, there was a third measure that was not adopted wholesale and, in some areas, written off completely: nonpartisan elections and ballots. The idea of a nonpartisan election is for candidates to run for office without direct political affiliation or loyalty, much like a business person would go up for a promotion (Aiden, 1952). The 1920s mostly abandoned the concept of non-partisan elections in part due to the inherent hypocrisy of claiming that there would be no parties interested in influencing public policies. But, a component of this spirit of nonpartisanship, namely the nonpartisan ballot, would be implemented in some measure across the United States (Aiden, 1959). In contrast to the old-style ballot that served more as an advert than a vote indicator, the progressives pushed for ballots that simply indicated the candidate and let voters seek out more information for themselves (Wright, 2008). The purpose of the nonpartisan ballot was to limit political bias that might be communicated on and through different ballot types. As discussed in later sections, the non-partisan ballot would gain significant but not comprehensive traction in later elections.

The Right to Vote in the Modern United States. Even with pushes attempting to further nonpartisan voting practices, voting in the United States continued to have innumerable intricacies, complexities, and contradictions across local, regional, state, and national voting practices. One of the guiding principles of the United States constitution is that of a nation that is governed by the will of the people. However, as noted by Fisch (2006),

The United States of America, as a federation of now 50 states each with its own

constitution and legal system still enjoying a large degree of governmental autonomy

within the national legal framework, presents a strikingly mixed picture regarding the use

of direct democracy – the submission of proposed governmental action to a popular vote

– in law and constitution-making processes (p. 485)

This strikingly mixed picture of the practical materiality of direct democracy was put on display

in the early to mid-twentieth century specifically, as it pertains to *who* has the right to vote.

The conversation surrounding voting rights might be considered to have been ongoing

since colonial times. As previously mentioned, the majority of voters were white male

landowners. This excluded women and racial minorities that were also present and active within

the founding communities. Most African Americans in colonial times were slaves and thus could

not vote. Property and wealth requirements were widespread not only among whites but also

among the scarce number of freed slaves. Similarly, women were not always explicitly forbidden

from legally voting. For instance, the language included in New Jersey's first constitution

allowed both men and women to vote in elections, although only single women were allowed to

vote because married women could not own property ("Women and African Americans," 2018).

As the two above cases demonstrate, the amount and manner in which women and racial

minorities were allowed to vote were extremely limited in scope. Over the next two centuries,

voting rights for women and racial minorities would go through many different formulations.

Two wars bookmarked touchstone moments in voting right history: the civil war and the first

world war.

Following the civil war, it became apparent that States' rights had perhaps received too

much privilege over individual rights, especially for African Americans (W.J.F., 1948). The 14th

and 15th amendments represented an attempt to rectify this situation in which newly freed African Americans were granted the right to not be discriminated against based on the color of their skin and the right to vote in elections, respectively ("Landmark Legislation," 2021). However, this legislation proved to be largely ornamental in practice, as States continued to show hostility and attempt, often very successfully, to circumvent the national mandates (Jordan, 1985). Particularly in Southern states, the loss of the civil war destabilized preexisting categories of power and influence that ignited increased vitriolic relations between whites and African Americans as space and meaning were renegotiated (Hoelscher, 2003). To be clear, the vitriol was felt by whites, who controlled and wielded institutional resources to pass Jim Crow era legislation that legalized racial discrimination and violence against people of color.

Reconstruction and post-reconstruction America – i.e., "Jim Crow" era – marked another time period in which the espoused values of the nation did not align with the lived experiences and material realities of all Americans. Between the years 1865 and 1967, more than 400 state laws, constitutional amendments, and city ordinances essentially legalized segregation and discrimination ("Jim Crow Laws," 2021). While the constitution stated that all had equal rights and access to public resources, Supreme court cases, such as *Plessy v. Ferguson (1896),* defended deeply entrenched racist ideas and policies. The contention that all men [sic] were created equal was continually chipped away through de jure rulings and de facto policies.

As it pertains to voting in specific, there were a number of both theoretical and physical barriers to voting as an African American after the passing of the fifteenth amendment in 1870. While there were initial gains in election and appointment of African Americans to legislative positions, progress would stagnate as white southern democrats established disproportionate structural power. The goal was not necessarily to abolish the African American right to vote but

instead to suppress it (Marby, 1938). In other words, legislators used a communicative sleight of hand in which they attempted to espouse values of unity while simultaneously enacting legislation that made voting difficult or impossible for African Americans. This occurred at both a structural and individual level that involved strategic structural moves, intimidation, and violence. For instance, in Mississippi, primarily white counties were allowed to appoint more delegates to the state legislature than primarily black counties. Additionally, and somewhat consequently, black counties were often governed by a small oligarchical class of white males (Kirwin, 1948). As such, laws establishing literacy tests and poll taxes functioned as barriers to participation for African American voters (Evans, 2021). There were also property tests (only property owners could vote), grandfather clauses (allowed non-literate, non-landowning whites to still vote), and voter roll purges (unregistered previously registered voters) which functioned to suppress the vote of African Americans while simultaneously blocking the enfranchisement of African Americans (Brooker, 2021). Moreover, decentralized violence and intimidation continued to occur within communities. Physical violence against African Americans, while illegal, was often justified, legally and socially, with relative ease. However, it is important to note that the reconstruction and Jim Crow eras are now understood as periods in which the institutionalization of racist values through structural leadership and legislation became far more powerful and sustainable than acts of violence alone (Epperly et al., 2019; "What is Jim Crow," 1998).

The twentieth century marked a time in which the nation more substantially reassessed the issue of who could legally vote. While reconstruction and Jim Crow era policies illuminated the discrepancies between voting rights by race, women also began to vocally call for the redefinition of their place in civic society, particularly following the first world war. Though

women have been involved in combat, health, and support positions in every major American conflict since its inception, the first world war marked a time in which women were actively and explicitly recruited into the armed forces (Murdoch et al., 2006). Moreover, the women who did not serve as support or health professionals for the armed forces were left with the responsibilities formerly reserved for men. With this, wartime experiences of women led to raised expectations in civic life (Braybon, 1981). But, the portrayal of women's roles in war is often aligned in a certain way, excluding them from masculine "laws," which functioned to create ambivalence regarding their citizenship identity and status and, consequently, their voting rights (Ouditt, 1994).

Coming on the heels of the newfound independence of women necessitated by the first world war, the 19th amendment represented landmark legislation in women's rights by granting the national ability to vote for women. It is important to note that much scholarship dealing with the early women's suffrage movement has been criticized for several reasons (Hewitt, 2010; McCammon & Banaszak, 2018). As stated by Montoya (2018),

"Seneca falls to suffrage" narrative remains prominent…this narrative focuses predominantly on the experiences of white, middle-class educated women in the northeast; prioritizes the importance of de jure voting rights over de facto; and obscures the experiences of millions of women that remain excluded from the franchise even after the nineteenth amendment was ratified" (p. 4).

Thus, even though the 19th amendment granted women the right to vote by law, we still see, as we have through previous literature in other instances, that actual voting practices and material realities of voting for women were not necessarily as advertised. For instance, Native Americans and first-generation Asian Americans weren't allowed to be citizens in the United States, so they

were declined the right to vote ("Not all women," 2020). Guilleux (2018) argued that the symbolic nature of the amendment itself, coupled with the victory narrative tied to the event should be carefully examined in order to show the complex history leading up to and following the event. While the explicit right to vote was gained by all in the years to come, particularly with the culmination point during the civil rights movement of the 1950s and 1960s, the implicit realities continued to be only tangentially related to the material realities of voting.

Television and Voting Environments

At the same time, as more people gained the right to vote, the amount and type of information available to voters were also changing. The early to mid-twentieth century marks the electronic era in its mature phase that, as mentioned previously, began with the telegraph (wired and wireless) in the 19th century (Logan, 2002). However, the advent of the television marked a new media epoch (Postman, 1985). Oddly enough, the advent of the television grew alongside communication studies as it became institutionalized in colleges across the country (McAnany, 2014). The development of the television and the development of the field of communication studies are unique insofar as they both bring together disparate methods and functions that are not distinct themselves (Stalker, 2014). Television combines elements of speech, print, and moving images`. Communication studies borrow from psychology, sociology, and other social sciences (Hardt, 1992; Rogers, 1994). In the early days of communication research on television, it was regarded as a medium that, as summarized by Gurevitch et al. (2009), had the "potential to contribute to a more informed, inclusive, and nonpartisan democracy" (p. 164). Moreover, it was believed that the television would be able to make information available to more people who would otherwise not be able to learn about or engage with political matters (Dahlgren, 1995). But, even in the beginning, there were serious doubts about television. For instance, Lang and

Lang (1953) were some of the earliest researchers looking at the effects of television, conducted

several studies, and argued that the notion that the television could bring the "truth directly into

the home" was far from the actual effect of the television. Lang and Lang (1956) found that

when viewers approach what is in actuality a hyper-specialized political event or phenomena –

such as political debate – they approach it without a "common nexus of experience," resulting in

a "short circuiting of the social network" in which the "situation of contact" is "solitary" and,

thus, they misunderstand key elements of the event (p. 115). Moreover, the contact with reality is

mediated in a new manner. Television reverses the nonpartisan standards of print journalism of

the first half of the 20th century by allowing for, and in some cases necessitating, some sort of

performance from the reporter (Boorstin, 1962). As stated by Boorstin (1971),

> The live television broadcasting of the president's regular news conferences, which
>
> President Kennedy began in 1961, immediately after taking office, has somewhat
>
> changed their character. Newsmen are no longer so important as intermediaries who relay
>
> the president's statements. But the new occasion acquires a new interest as a dramatic
>
> performance. Citizens who from homes or offices have seen the president at his news
>
> conference are then even more interested to hear competing interpretations by skilled
>
> commentators. News commentators can add a new appeal as dramatic critics to their
>
> traditional role as interpreters of current history (p. 258)

The affordances of the television not only altered how people view events happening in the

world but also how those events are portrayed and interpreted.

Regardless of praise and/or concern, television became the dominant medium of

communication in the second half of the 20th century. As stated by Scolari (2013), "for half a

century, television was the top predator of the media ecology, the big T. rex that frightened the

rest of the media species" (p. 1426). The reasons for this are varied. First, television combines visual and auditory (or acoustic) components. This is received as more captivating than radio or print and led to the widespread adoption and consequent domination of television. Second, the television, though termed a cool medium by McLuhan (1964) insofar as it created a media product with less sensory data, engaged multiple senses, and required completion by the audience, is more emblematic of a hot medium insofar as the product of the television is a completely finished and packaged product to enjoy with only basic physiological functions (Gozzi, 1992; Mielo, 2004). The consequences, articulated by Postman (1982), were that there was no longer a barrier (i.e., the ability to read or write) to certain experiences and knowledge that was previously guarded by literacy. While Postman's (1982) overarching argument was that the elimination of this barrier functioned to eliminate the literate notion of childhood, television also led to an increased emphasis on visual images as opposed to written statements and arguments (Postman, 1985). Remarking on the television era, Edgerton (2000) noted that television was the primary means by which people learned about history. Thus, television and its unique characteristics and manner in which it carries information is a primary vehicle through which individuals learn about the societies in which they are a participant within.

The impact of television on politics is multiplicities. Postman (1985) holds up the 1960 Presidential election as a clear example of when television proved its cultural superiority over the radio. Specifically, Postman references how individuals who listened to the debates on the radio thought that candidate Richard Nixon had won based on the reasoning of his arguments, whereas individuals who watched the debate on television thought that candidate John Kennedy had won because Nixon looked sweaty and old in comparison to the youth and vibrancy of JFK (Postman, 1985). Such responses showed how the nature of politics shifted away from a basis in literacy

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and the associated qualities towards a basis in television and its associated qualities. Put succinctly, Mehltretter and Herbeck (2010) remarked, "looks count" (p. 579). Television is inherently presentational, whereas literacy is propositional. By definition, presentational information is non-discursive, symbolic, and conveys feeling (Langer, 1943; Nystrom, 2000). Examples of presentational forms include dance, video/moving images, and photography (Costello, 2002). Conversely, propositional form is discursive, made possible by logic and reasoning, and conveys thought and or/idea (Langer, 1943; Nystrom, 2000). Examples of propositional forms were originally conceptualized as primarily written notes/essays/accounts (Costello, 2002). At the same time, presentational information encourages passive acceptance through a portrayal of reality 'as-is,' whereas propositional information is contingent on interpretation and meant to be interrogated. It is in this time period that the image becomes just as important, if not more important, than the substantive political policy and logical reasoning. In sum, the television, and to some extent, all electric technologies, were engrossing, all-encompassing, organismic, circular, tactile, emotional, and affective (Antecol, 1997; McLuhan, 2010). The public sphere and political proceedings began to take a character altogether different than that of what was established in the 18th and 19th centuries.

The modern era was characterized by seismic social and technological change. As democracy opened its doors to more American citizens and the technologies used in voting sought to be more nonpartisan, the United States as a nation came to be recognized as an international superpower and a domestic industrial nation. The proliferation of media technologies changed the landscape of how individuals learn about and participate in democracy. Yet, the twentieth century characterized by electricity and speed, would prove to be outpaced in the coming 21st century.

Contemporary Voting Practices and the Rise of the Internet

At the turn of the century, the 2000 American election thrust the term "voter confidence" into the forefront of the public conversation. In one of the tightest elections in U.S. presidential history, the 2000 election was marred by controversies surrounding the casting and counting of votes. For instance, in Florida, the voting system mandated that voters punch a hole in the paper to indicate the candidate that they supported and were voting for. This was called a "pre-scored punch card" (PPCs) (Saltman, 2000). In most cases, the hole punch worked properly. However, in some cases, the hole would not be completely or properly punched, resulting in what was termed a "hanging" or "pregnant" Chad. This led to thousands of votes being indiscernible in a race between two candidates that was separated by less than one-half of a percent. The court case, Bush v. Gore (2000), which ended up being settled by the Supreme Court, argued that when assessing the characteristics of the case, "the fact-finder confronts a thing, not a person" (Bush v. Gore, p. 106). The 2000 election represented one of the most prominent contemporary examples of society considering the measurement artifacts as fundamental to the democratic process.

It is important here to note that PPCs, while widely publicized, were not the only technology used in the 2000 election. In Florida, specifically, there were a number of environmental factors that led to the disastrous effects. First, it can be generally accepted that the process of elections and legitimacy of elections rests upon the notion that the proceedings are a nonpartisan process. As stated by Saltman (2006),

> respect for the results that technology is dependent on the credibility of the government running the election. Credibility is maximized if the government does not favor one citizen over another in basic rights, as implied in the concept of equal protection (p. 3)

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In Florida, during the 2000 election, the person responsible for administering state regulations was a partisan official. Moreover, the supervisors of elections and the canvassing boards were also partisan, and, in some cases, these individuals were actually up for reelection themselves (Saltman, 2006). Second, the ballot designs, as would be evidenced by the mass outrage and substantial popular press coverage, were inherently flawed. There was minimal guidance provided in designing the ballots resulting in citizens using different devices to cast their votes across the states. Thus, there was no monolithic or archetypal "voting experience" in Florida during the 2000 presidential election. At the turn of the new millennium, direct democracy in the United States was still not experienced in the same manner by all citizens.

What was particularly compelling about the 2000 election was that it was the first election since 1876 in which the results were up in the air (i.e., unclear) for a substantial amount of time following the election itself. Initially, the race was called in favor of candidate Al Gore, only to be retracted a couple of hours later in favor of candidate George Bush which would be overturned in another few hours with viewers left in a state of limbo (Guterbock & Daves, 2003). But these counts were plagued by the aforementioned technological issues. In fact, the margin of error for the machines far exceeded the margin of victory between the candidates (Warf, 2006). Even surrounding political technologies failed during this election. Voter News Service (VNS), which was an independent polling company, had a failure in its extremely complex system and refused to report polling numbers initially (Beimer et al., 2003). Even so, polling technology, aided by the new world wide web, had increased to the extent that more daily state polls were recorded than national polls resulting in national trends being extrapolated from state data in an often misleading manner (Erikson, 2001). With failures of electoral machinery on multiple fronts, the United States populace was confronting a crisis of civic epistemology in which

national elections lost a discernably large amount of faith in the processes by which elections produce and validate public opinion (Miller, 2004). The consequences of this realization would build in the decades to come.

With the 2000 election as a turning point, we had begun to shift out of the electronic era into the fully digital era. Even though the internet – then called ARPANET was invented and used by universities to move information in 1969, the internet was still in its infancy in the 2000 election and was primarily used for politically arbitrary activities ("ARPANET," 2022; Leiner et al., 2009). Cell phones had limited uses besides phone calls and other rudimentary features and had a status far from the ubiquitous status that they held in the 2020s (Sterling, 2010). The 21st century would prove to be a time of exponential proliferation of media forms and functions. As a result, the modes and manners in which individuals decided on and cast their votes were transformed as well.

Following the electoral catastrophe of the 2000 United States Presidential election, the 2004 election was considered a high-stakes election (Nitz et al., 2009). Equally important to the election itself and its particular issues was the flurry of public interest and scholarly attention paid to the voting technologies that would be responsible for administering the vote (Warf, 2006). The Help America Vote Act of 2002 (HAVA) was the governmental response to the 2000 election mistakes and sought to replace voting machinery, reform voter registration, and create better access to voting ("Help America Vote," 2002). The bill itself was amended a number of times prior to its implementation. Among the most notable provisions, HAVA created the Election Assistance Committee (EAC), which, as summarized by Coleman and Fischer (2011), was

an independent, bipartisan agency to carry out grant programs, provide testing and

certification of voting systems, study election issues, and assist election officials by

issuing guidelines and other guidance for voting systems and implementation of the act's

requirements (p. 1)

The EAC would aid in attempting to establish guidelines for states as it pertained to the

implementation of elections, although the EAC had no rule-making abilities, and methods of

implementation were left to the states (Coleman & Fisher, 2011). In effect, there were mixed

reviews about the success of HAVA. However, the 2000 election served as a catalyst for passing

HAVA, which explicitly addressed many issues that had remained unaddressed since the 1960s

(Cihak, 2006). Ultimately, HAVA represented the first large-scale attempt to rework voting

practices in the 21st century.

One of the larger missions of HAVA was to replace outdated voting technology that had

been discerned as one of the major causes of voting irregularities in the 2000 election (Car &

Moretti, 2007). Local governments, who typically shouldered the cost of electioneering

machinery, were provided funds from the national government to replace PPC or lever-type

voting systems (Shambon, 2004). But, not all states were keen to replace voting systems, and

congressional action on actual implementation was slower than expected following the passing

of the act Progress on the actual implementation of HAVA 2002. If funds were accepted by

states, improved voter systems were required to permit voters to verify their votes before casting

their ballot, provide voters the opportunity to modify or correct their vote before the ballot is

cast, and allow for correction of overvoted ballots ("HAVA," 2002; Shambon, 2004). In essence,

the major change to voting was to make sure that the technology allowed for reviews of votes so

that a mark, if made by accident or error, was able to be subject to revision. Again, this technology would be implemented in differing manners across the United States.

In the elections that were to follow, there was a monumental change in the media environment. Primarily, we see the exponential growth of the world wide web. In the span of 20 years, it became clear that the internet dethroned the television as the dominant mode of communication in the 21st century. It is important here to note that media forms do not fully disappear. Rather they tend to adapt and become integrated into the new media ecosystem (Velasquez et al., 2018). In other words, the content of a medium of communication is always another medium of communication (McLuhan, 1964; McLuhan & McLuhan, 1988). Just as the spoken word was incorporated into the printed word, the printed word was incorporated into sound (i.e., radio), and all were incorporated into the television. The internet had as its content all of the above (Strate, 2012).

The effect of the internet on democracy and political participation has been hotly contested among scholars, the popular press, and the public as a whole. Just as print and television had been the primary modes of communicating democratic processes in the past, the internet in the early 2000s – particularly with the 2004 and 2008 election cycles – became the primary vehicle for deliberative democracy in the United States (Dahlberg, 2007). Similar to print and the television before it, the internet was met with mixed feelings, although the initial sentiment was by in large that the internet would be the ultimate democratizing tool. As summarized by Dalgren (2005), the internet continued the late modern breakdown of traditional systems of political communication that had

> increased sociocultural heterogeneity and the impact that this has on the audiences/actors
> within political communication…the massive growth in media outlets and channels,

along with changes in the formats of media output, the blurring and hybridization of

genres, and the erosion of the distinction between journalism and non-

journalism…today's increased number of political advocates and "political mediators,"

including the massive growth in the professionalization of political communication, with

experts, consultants, spin doctors, and so forth sometimes playing a more decisive role

than journalists…the changing geography of political communication as the significance

of traditional national borders becomes weakened…the cacophony that emerges with this

media abundance and so many political actors and mediators… the growing cynicism and

disengagement among citizens (p. 150)

The above changes to the political and media environment created opportunities and threats to

use the internet as a tool for democracy.

The characteristics of the internet as a technology are inclined to produce certain political

engagements and forms of participation. The internet connects people and ideas across space and

time. As stated by Braman (2011), "The internet is simultaneously a general-use tool,

communication medium, set of material objects, idea, and factor of economic production" (p.

137). The characteristics of the internet, per Curran et al. (2012), are "interactivity, global reach,

cheapness, speed, networking facility, storage, capacity, and alleged uncontrollability" (p. 3).

Unlike print or television, the internet provides instantaneous access to (virtually) all other media

forms, including, but not limited to, books, news articles, films, shows, radio programs, music,

painting, sculpture, etc. Moreover, the internet provides individuals the opportunity to share

information with others and engage with others instantaneously from (virtually) anywhere in the

world. The effect furthered the interlocking nature of previously dichotomous spheres such as

private/public, social/professional, and work/leisure (Ruotsalainen & Heinonen, 2015).

As it pertains to democracy and voting practices, the internet provides many opportunities and threats. In conceiving the web as a relational space, the term Web 2.0 encapsulates the manner in which interpersonal and small group/organizational communication processes have been carried out and altered through networked computers and cellular phones (Lievruow, 2012). 2004, 2008, and 2012 elections showed increased interest and experimentation with the internet as a tool during election campaigns. For instance, in the 2004 campaign, it became common practice for political organizations, both those affiliated with candidates or independent, to include hyperlinks for donations and/or petitions which emphasized increased political participation across another non-traditional platform (Trammell et al., 2006). Additionally, the internet began as an alternative or additional avenue through which they received political information necessary in deciding how to cast their ballot (Howard & Toft, 2005). Yet, the internet has grown into the primary avenue for political information (Sunstein, 2007). Moreover, the landscape of online interactions has led to increased importance of social media and, consequently, political polarization based on the groups and organizations (traditional or non-traditional) an individual chooses to follow or not follow for political information (Brunridge, 2007; Dahlgren, 2021; Hutchens et al., 2019). The overall effect is a political environment that is categorically different than the political environment during the nation's founding. With more opportunities to create, share, and interact with political information and political commentators, there become more opportunities for misinformation, ultimately complicating the voter's experience, and they attempt to choose how to cast their ballots.

The election overhaul beginning after the 2000 U.S. presidential election and the development of the internet created the foundation for political participation in the United States

during the 21ˢᵗ century. The 2000s and 2010s were characterized by increased political polarization and debate as to the role of media in elections and democracy as a whole. Following the maturity of the internet and the digital era that followed, striking differences in the material and ideological implementation of elections will become apparent.

Current Controversies Surrounding Democracy and Voting Practices

As shown above, the legitimacy of elections, voting practices, and democracy as a whole has been continually revisited, contested, and reworked as public opinion and media technologies change throughout history. At present, confidence in the legitimacy of American elections has reached an all-time low, with only 59% of citizens reporting that they believe their votes will be cast and counted accurately (McCarthy, 2020; "2. Voter Evaluations," 2020). Yet, the popular press, on all points on the bias spectrum, accounts repeatedly stressed the importance of the election in deciding the direction of the nation. This led to an election that garnered the highest voter participation since 1900 ("2020 Presidential election," 2021). Therefore, the election of 2020 represented a political moment in which the confidence in elections is at its lowest while the stakes are considered some of the highest since the turn of the 20ᵗʰ century.

The 2020 United States Presidential is an example of another election, similar to the 1888, 1960, and 2000 that garnered an exorbitant amount of scholarly attention. Building on the tumultuous nature of the 2016 United States presidential election, research surrounding the 2020 election investigated some of the same themes, including, but not limited to, the nature of truth, fraud/election tampering, racial violence, divisive campaigning, and public health (Martin, 2021). While it will not be necessary to cover the existing literature in full, there are several areas that bear relevance to the project at hand.

First, a starting point to understanding the 2020 election environment is understanding

the 2016 word of the year: "post-truth" (Wang, 2016; Flood, 2016). Following the virulent

campaigns on both sides of the 2016 presidential election, the term post-truth not only spiked in

common usage but introduced populations to the idea of an environment in which fact became

more tentative and open to interpretation or subject to individual/group feelings as opposed to

reason (Farkas & Schou, 2020; Peters, 2017). While it has been generally conceded since pre-

modern times that politicians and political matters involve a large degree of persuasion bordering

on deception, it is important to differentiate post-truth in the current historical moment as

opposed to the propaganda and fraud of the past. For instance, Lockie (2016) argued that

> "Politicians may long have been among the least trusted members of our societies, but the
>
> idea of post-truth politics suggests there is an important qualitative difference between
>
> the post-truth politician and the spin doctors of yore. The post-truth politician does not
>
> simply pick-and-chose among relevant facts, offer questionable interpretations or avoid
>
> inconvenient questions. The post-truth politician manufactures his or her own facts. The
>
> post-truth politician asserts whatever they believe to be in their own interest and they
>
> continue to press those same claims, regardless of the evidence amassed against them" (p.
>
> 1).

With this shift, the creation or manufacture of information and its connection to reality have

come to the forefront of public conversation. The 2016 election introduced a wholesale

reinvestigation of what we mean when we say something is a fact. In other words, the

conception of fact itself, which has been debated by philosophers since the beginning of time and

continues to be debated, has made its way to the masses, both in the United States and

internationally. Moreover, the discussion of what constitutes a fact (i.e., epistemology) has taken

an ontological turn. That is, the conception of truth necessitates an acknowledgment of whom has the ontological standing to validate such claims (Wright, 2018). As stated by Sismondo (2017),

> The fact as we know it is often a modern fact, arising out of particular configurations of practices, discourses, epistemic politics, and institutions (variously understood and analyzed by, e.g., Dear, 1985; Poovey, 1998; Shapin, 1994). As solid as those configurations now appear, it is not far-fetched to imagine them disrupted (p. 4)

An important caveat here is – and this has been demonstrated continually through the often contradicting material, and theoretical conditions of democracy and voting – post-truth indicates that truth is neither outside of humans nor fully within them (Farkas & Schou, 2020). Thus, it is a condition in which individuals feel their world is defined by others and in ways that lack resonation with past times. However, as argued by Mejia et al. (2018), the insistence that we only just now have arrived at a post-truth moment ignores a racial history in which substantial populations were subject to meanings that were not their own. Thus, the current environmental conditions of the supposed post-truth era illuminate a populace in turmoil, with all concepts, theories, and ideas subject to radical redefinitions from ambiguous or previously unfamiliar institutions.

Despite varying conceptions of the term post-truth, it is undeniable that such debate underlies a serious societal issue. At the heart of this issue is the use of communication technologies in political elections. Many scholars attribute the explosion of the term's usage and investigation to the Russian tampering with the 2016 election via strategic placement of patently false news stories (Ali & Zain-ul-abdin, 2021). While the debate surrounding the Russian investigation ignited vitriolic responses in all circles as to what exactly occurred, it has generally

been concluded that through mediated sources, the Russian government orchestrated the hacking

and releasing of cyber data and used state-run Russian media as a propaganda machine, and

attempted to access state and local electoral boards to influence the 2016 United States

presidential election (Justin & Bricker, 2019). Even though the interference was rhetorically

framed as a "hacking" of U.S. democracy, the sustained disinformation campaign via social

media illuminated the role of the internet as a mediator of political action (Alvarez et al., 2020).

The 2016 United States Presidential Election established social media as a significant influencer

of information that individuals used to craft their political opinions and ultimately cast their

ballot (Buccoliero et al., 2020). The election marked a perceived loss of dominance of traditional

media forms and led to the increasing instability of election confidence.

The controversies that plagued the 2016 presidential election and the Donald J. Trump

presidency set the stage for issues of the 2020 election. With the notable addition of a Global

pandemic, the 2020 election can, to some extent, be seen as an extension and exacerbation of the

issues that plagued the 2016 election. From a historical perspective, the academic scholarship on

the 2020 election is still in its infancy, even two years after the conclusion of the event.

Regardless of this point, communication scholarship up to this point has, in large part, focused

on a myriad of issues including, but not limited to, media's role in elections (fake news,

gatekeeping, etc.), presidential communication/debate discourse, accountability, white

supremacy, and racial division, populism, conspiracy, political polarization, public trust and

more (Kelly, 2020; Martin, 2021; McKinney, 2021; Pascual-Ferra, 2021; Rossini et. al, 2021;

Scacco, 2021; Spence, 2021; Wright, 2021). While it will not be necessary to review all literature

surrounding the 2020 election, it is important to note that scholarship to date has questioned the

efficacy of a number of constitutional functions and the ever-evolving role of the public in shaping conceptions and material practices of each function.

Of particular interest in considering the materialities of casting one's vote in the 2020 election, the COVID-19 pandemic altered the physical voting patterns of the United States populace. At the time of the election, the Center for Disease Control (CDC) had recommended social distancing and mask-wearing guidelines that were not conducive to traditional voting practices. In the 21st century, it was commonplace to go to the polling place, as specified by the county, and cast your vote via some sort of paper or computerized ballot. However, with such guidelines in place, the 2020 election saw the largest amount of people voting by mail in the history of the United States (Stewart, 2020). With 70,550,699 (43%) Americans voting by mail through an already overloaded postal system, widespread claims of voter fraud surfaced throughout the campaign (Bogage, 2020; "Election Results," 2020; Maio, 2020; Shear et al., 2020). Claims of voter fraud were not limited to mail-in voting and were extended to all technologies used to carry out the election. The widespread assault led to significantly decreased confidence in mail-in voting and elections in general (Pennycock & Rand, 2021).

The claims of voter fraud were largely aimed at the democratic party and then-candidate Joe Biden by individuals, groups, and institutions supporting the Republican Party and the reelection of President Donald Trump. The claims made by republican and conservative officials and affiliates are emblematic of a rhetorical trend that seeks to delegitimize governmental procedures, which has persisted in such circles during and prior to the 21st century (Fried & Harris, 2021). As argued by Fried and Harris (2020),

> Republican and American conservatives have cultivated and employed public distrust in
> government to garner strategic benefits. Specifically, they use it for organizational

growth and maintenance; for arguing to shift power to institutions they control away for

institutions they do not; for electoral messaging and voter mobilization; and for trying to

affect which policies are passed or defeated, implemented well or undermined (p. 528)

The varying strategies of implementing strategies had the effect of more deeply entrenching

individuals in politically homophilic networks (Blanchar & Norris, 2021). Put differently, the use

of rhetorical strategies serves to delegitimize elections while further insulating those who believe

in such claims from any criticisms, logical or rhetorical, of their positions.

While there were logical and statistical arguments made against mail-in and digital voting

technologies during the 2020 election (which will be discussed in the following section), some

claims might be considered primarily rhetorical or, in the classical notion of "adornment," in that

such claims were limited in substance (Borchers & Hundley, 2018). Terms and mandates such as

"save the steal," "rigged" elections, and "find the votes" served to invigorate a movement against

the legitimacy of the election (Gertz, 2021). Such rhetoric subverted longstanding norms of

civility in the process leading up to the election as well as the transition of power following the

election of the result. Specifically, rhetorical statements from elite individuals in positions of

power, such as then-sitting President Trump, that violate democratic norms serve to undermine

overall confidence in democratic proceedings (Clayton et al., 2021).

At times supplemental, and at other times central, to the inflammatory rhetoric of voter

fraud claims were legitimate, substantial statistical claims. First, it was reported that it was

statistically unlikely that candidate Joe Biden was able to receive 81 million popular votes while

only winning 477 counties which were positioned to indicate some degree of foul play (Enders et

al., 2021). Second, it was documented that Biden's poor performance in "Bellwether" counties –

counties in which the candidate voted for regularly aligns with the eventual winner overall – was

indicative of tampering (Enders et al., 2021). The overall sentiment of these claims, which were unequivocally proven false in both academic scholarship and multiple courts of law, is that were the election was fairly conducted, the result (i.e., Biden's victory) would be improbable or impossible (Eggers et al., 2021).

Though it has been noted that claims of election illegitimacy and/or voter fraud are a regular occurrence dating back to the earliest elections in provincial America, the 2020 presidential election represented a unique historical moment in which rhetorical, statistical, and legal arguments continued to vehemently dispute the election results (Dorfman, 2020; Eggers, 2021). Lawsuits were opened in numerous states, and upon the legislative certification of the election results, a mob of dissidents broke into the capitol to attempt to stop the certification of the vote resulting in five deaths (Canon & Sherman, 2021; Rubin et al., 2022). Though prior elections have resulted in lawsuits and, in certain cases, violence, the 2020 election represented a historical moment in which such lawsuits and violence were decidedly pointed at election practices themselves.

Rhetorical claims coupled with misleading and/or patently incorrect statistical claims left a lasting mark on the perceived legitimacy of voting practices in the United States, especially among Trump supporters. Pennycock and Rand (2021) found that following the election, 77% of Trump voters believed elections were prone to fraud, and 78% believed that mail-in voting was prone to voting. Perceptions of election legitimacy were positively correlated with trust and consumption of partisan news sites (Grant et al., 2021). However, election legitimacy is not a partisan issue. Election legitimacy is the basis of all political participation itself. The ramifications of a populace that does not believe its ballots are being cast have been felt ideologically (political polarization) and physically (actual physical deaths) in the wake of the

2020 United States Presidential election. Thus, understanding the content of claims made and the manner in which they were disseminated and received is integral to understanding the state of voting in 21st century America.

Moving Forward: Media, Democracy, and Voting technologies

The United States presidential election of 2020 proved to be a tumultuous time in American politics in which the campaigns were fraught with widespread claims of fraud and misinformation on a wide range of issues from economics, health, and race (Hrynowski, 2020; "4. Important Issues," 2020). In moving forward and considering the impact of the 2020 campaign retrospectively, the following article pushes for reworked conceptualizations of media, voting technology, and democracy. With a post-truth environment as the context for the 2020 U.S. presidential election, Gunkel (2019) pushed media scholars to think that "the truth of media is disclosed in the medium truth" (p. 309). In other words, when seeking out what is true and what is false, the adept scholar must pay close attention to the definitions and operationalizations of the concept of truth, as well as the profound matter in which technology, the internet, and other forms of mediatization affect such notions. This conception of media and truth, long pushed for by scholars linked to the intellectual tradition of media ecology, implied that individuals acknowledge that they are always already entangled with media and mediation, calls for self-reflexivity in thought and practice, and necessitates a reaffirmation of relativism that removes negative connotations in an attempt to make sense of the comprehensive whole (Gunkel, 2019).

In summation, voting in the United States has a long and contested history. Since the inception of democracy in the colonies, special attention has been paid to how and whom casts votes in a representative democracy. The history of democratic theory, voting practices, and the

experiences of United States citizens has shown periodic and continual moments of contradiction in which material realities are not aligned with conceptual definitions. Guided by a new materialist framework and a media ecology sensibility, the preceding analysis of voting technologies and surrounding propaganda in the United States Presidential election of 2020 seeks to provide a deeper understanding of the intertwined nature of media, technology, and democratic legitimacy in the United States.

In the sections to follow, a new materialist framework, coupled with select concepts in media ecology was employed to interrogate the voting propaganda and the material experience of voters during the 2020 United States Presidential election. The variegated experiences of voters and the technology (both analog and digital) illuminated the incongruity between material practices and immaterial conceptions of democracy in the 21st century.

CHAPTER 3: THEORETICAL FRAMEWORK

Introduction

As a relatively young academic discipline, communication studies grew out of social-scientific research in advertising and propaganda beginning in the 1920s, 30s, and 40s (Berger & Chaffee, 1987; Bryant & Pribanic-Smith, 1987). Arising in part due to the telecommunications revolution stoked by the radio, heightened scholarly interest in explaining, predicting, and controlling humans stoked the tinder that would turn into communication studies. The institutionalization of communication studies as a formal discipline can be traced to several universities. For instance, the University of Iowa established a Department of Speech in 1920 ("History of the Department," 2022). Additionally, the University of Illinois established the Institute of Communications Research in 1947 ("About ICR," 2022). Similarly, Michigan State University established a Communication Program resembling contemporary notions of communication departments in 1958 (Jenson, 2002). Regardless of where the institutional origins are traced, communication studies have been influenced by the fields of psychology, sociology, English/literature, philosophy, anthropology, history, gender studies, political science, and more (Jenson, 2002). As a result, scholarship in communication studies varies drastically not only in content but in methods employed. The eclectic discipline of communication provides ample room for exploration and experimentation with different approaches to the complexities of the social world.

In a fashion emblematic of the open-ended, flexible nature of communication studies, the intellectual traditions of new materialism and media ecology, while neither explicitly linked to communication studies, offer commentary on the intertwined nature of human communication, are often housed within communication departments. New materialism, spawned by feminist

studies in the 1990s, sought to readdress conceptualizations of the relationship between mind and matter (Frost & Coole, 2010). By viewing both human and nonhuman components, new materialists emphasize the material configurations humans interact with. Similarly, media ecology, a term first coined in the 1960s, is driven by the charge that technologies that carry out human communication have a significant impact (in some cases, the *primary* impact) on the communication itself (Strate; 1999; Strate, 2006). Both fields of thought, and corresponding scholars, explore the relationship between humans and the worlds that have been built around them.

Thus, the following section sought to accomplish two primary tasks. First, the important philosophical and theoretical underpinnings of relevant concepts were sketched. Primarily, the study will be guided by a new materialist ontology and approach. Additionally, select concepts in media ecology will be defined. Due to the "fringe" status of both fields, it was necessary to outline what exactly they sought to accomplish. Second, relevant concepts from each field will be introduced and incorporated into the method and, ultimately, the analysis. Overall, this following section will introduce two novel fields of thought and demonstrate what certain elements of media ecology offer a new materialist analysis.

New Materialism Defined

New materialism is a more recent philosophical endeavor. Originating in the field of gender studies, new materialism took as its starting point that scholarship was trending towards indifference, and in some cases complete disavowal, of the material nature of bodies and their relations to them (Frost & Coole, 2010). The impetus behind scholarship in new materialism occurred following what is often referred to as the linguistic or the cultural turn in many disciplines during the 1970s and 1980s (Lemert, 2004; Schouwenburg, 2015). By in large, the

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idea is to, per Fox and Alldred (2018), focus on the fluidity and concretizations of matter. Or in other words, new materialism assesses a range of material forces, including physical, biological, psychological, and cultural components (Braidotti, 2013). There is no monolithic definition of new materialism. Gamble et al. (2019) argued that

> there is currently no singular definition of new materialism but at least three distinct and partly compatible trajectories. All three trajectories share at least one common theoretical commitment: to problematize anthropocentric and constructivist orientations of most twentieth-century theory in a way that encourages closer attention to the sciences by the humanities (p.111)

Connolly (2013) pointed to ten affinities often shared by theorists lumped under the banner of new materialism. While not all of them will be integral to the study at hand, it is necessary to outline them in order to understand the uniting philosophical and theoretical features of new materialism.

First, new materialism reconceptualizes the relationship between mind and body. Connolly (2013) stated that "classical ontologies of mind/body and self/world dualism are challenged" (p. 401). This tenet of new materialism is of primary importance as it rejects the notion that mind/body and self/world are entirely distinct categories. That is, the relationship between thoughts of our mind and actions of our bodies are contingent, not mutually exclusive. Similarly, the self becomes a part of the world as opposed to an agent's action on or upon it. This central argument of new materialism is the starting point of all inquiry in the philosophical tradition.

Second, and perhaps of equal importance, is the notion that human and nonhuman forms of matter are removed from their traditional hierarchy. As put by Connolly (2013), "notions of

matter as dead or, more often, secondary to the form is thus replaced by an evolutionary model in which there is vitality installed in energy/matter complexes from the start" (p. 401). The above tenet does not argue that humans or nonhuman factors are more important than the other, nor is it an entire ontological leveling that puts each on the same level. Instead, the above argument affords a certain degree of space, energy, and autonomy to both human and nonhuman factors in affecting the phenomena of which they are a part.

Third, new materialism rallies against the notion that intellectual inquiry must deal with questions of what is/are not, or it must deal only with real-world activism. As put by Connolly (2013), new materialism rejects "the idea that you should try to be post-metaphysical is scrapped" (p. 402). In other words, new materialist inquiry is permitted to take many forms. This includes positions that are still exploring the questions of what exists or what does not exist. It also includes work that seeks to alter currently worldly living conditions and strives for justice in this world and lifetime. The banner of new materialism, as a sprawling and decentralizing tradition, has space for both of these lines of thought.

Fourth, new materialism strives not to erase or exclude certain elements from the philosophical equation. In Connolly's (2013) words, new materialists have "the tendency neither to erase the human subject nor restrict it entirely to human beings and/or God is accepted" (p. 402). Primarily, this tenet exists to combat perceived anthropocentrism in intellectual thought processes.

Fifth, - and building upon the above notion – new materialism strives to further decentralize the human subject as the primary actor, protagonist, and/or catalyst within complex phenomena. As stated explicitly by Connolly (2013)

as we confirm the human subject as a formation and erase it as ground, as we detect more

vitality and periodic capacity for surprise in a variety of nonhuman force-fields, we also

seek to contest a set of classical conceptions of common or derived morality (p. 402)

Here, new materialism explicitly addressed how inquiry usually takes as its starting point the

human as the central component around which phenomena form. However, by not assuming the

human to be the ground of all discursive and non-discursive (i.e., material) formations – which is

language that will be revisited in the discussion of media ecology – inquiry has new

opportunities and possibilities for entry points. Moreover, it allows for the development of a new

ethical paradigm in which non-human elements gain a standing previously considered of

secondary importance to human exigencies.

Sixth, new materialism rallies against cultural internalism. While such word usage has

been largely eradicated, or the issues associated with such terms considered resolved, internalism

refers to the bounding of practices within disciplines and spaces that are proffered as norms and

ultimately give structure to an inquiry in often subconscious or unaddressed ways (Shapin,

1992). Per Connolly (2013),

as we come to terms with a cosmos composed of interacting force fields invested with

differing speeds and degrees of agency, we resist the thesis of what might be called "the

sufficiency of cultural internalism" (p. 402)

Thus, the researcher approaches a number of interrelated and constituent elements that do not

subscribe to a singular conceptualization. Put another way, the above tenet argues that each

culture is part of a larger field in which all cultures exist as amorphous parts of a whole, as

opposed to mutually exclusive areas. Finally, this orientation supposedly leads to a greater focus

on a problem-oriented approach to issues and/or phenomena. As such, problems become

approached as they are instead of from a particular, normative, disciplinary, and/or cultural approach.

Seventh, new materialism accepts a much larger margin of error than traditional social and natural sciences. As stated by Connolly (2013), "we are prepared, through a combination of experiments and speculations, to act beyond the dictates of established knowledge when the problem underway demands it" (p. 402). Such an orientation allows space for intellectually probing and exploratory work.

Eighth, - and closely tied to the previous tenet – clarifies the extent of the role of the human within the philosophical platform as it is presently arranged. As stated by Connolly (2013),

> the foregoing considerations encourage us to identify shifting elements of ontological
> uncertainty and real, conditioned creativity in the periodic intersections between several
> forces in the world (p. 403)

Put differently, the role of the human is to acknowledge and identify how elements – both human and non-human – are in constant flux and the resulting relationships arising from such movement. Importantly, this point appears to acknowledge the degrees to which human autonomy and creativity exist in affecting the phenomena with which they are intertwined.

Ninth, new materialism presses researchers to consider all available tools possible for conducting an inquiry. As stated by Connolly (2013),

> the above explorations encourage us to supplement current conceptions of reasoning and
> knowledge with techno-artistic tactics by which we as participants in the human sciences
> extend our perceptual sensitivities and prime ourselves periodically to participate in the

creative element of politics by which new concepts, ideas, themes, tactics, judgments,

and ideas are brought into the world (p. 403).

The above quote has two primary implications. The first of which opens the door for new,

experimental methods that may or may not have been used in the social or natural sciences. The

second implication is an amelioration of boundaries between disciplinary methodologies.

Altogether, the above tenet allows for inquiry to take a new structure and design.

Tenth and lastly, new materialists often tack on a planetary aspect to their

conceptualizations of the world and their inquiries in general. Per Connolly (2013), "many of us

now feel compelled to add a planetary dimension" (p. 403). While this tenet is not directly

applicable to the study at hand, it highlights the extent to which new materialists seek to

challenge and alter conceptions of our world.

The above passage quoted from Connolly (2013) and the subsequent elaborations were

included to lay out some uniting factors behind new materialism. Sometimes called a 'renewed

materialism' (Frost & Coole, 2010), new materialism seeks to carve out a middle ground

between linguistic relativism and definitive social science in which the number of human and

nonhuman components considered is expanded, and the agency granted to each component is

reassessed.

Put together, the tenets of new materialism allow for the reconceptualization of the

categories of the voter, voting technology, and democratic institutions at large. The hierarchical

organization between such categories – i.e., voter, voting technology, and democratic institution

– is restructured so that neither the human nor the non-human elements are inherently privileged

over other categories. With human and non-human actors decentralized, the broader

phenomenon and all its components – both material and discursive – can be analyzed using all

tools available. For elections, this means a broader focus and attention paid to all parts of the process as opposed to small subsections of the phenomena at hand. In essence, the underpinning philosophical assumptions of new materialism afforded the present research project multiple new entry points for investigating and understanding presidential elections.

Selected Concepts in New Materialism

It is at this point that we will now shift attention to a specific theorist associated with new materialists. While Connolly provides some uniting tenets, it is important to note that the approaches of theorists underneath the banner of new materialism take wildly varying approaches. With this established, the works of quantum physicist and philosopher Karen Barad are of particular interest to the present study. Barad's impact on scholarship has been extrapolated into disciplines reaching far past their original training. Originally, Karen Barad was trained as a theoretical particle physicist at SUNY Stony Brook. Barad has been widely popularized and applied in feminist, gender, science, and philosophical spheres ("About Karen Barad," 2021). Beginning from the argument that language has gained too much importance as we seek to understand our world and our place within, Barad has pushed forward several seminal theories and ideas that press on the boundaries of materialism, ontology, and epistemology (Sehgal, 2014). The following sections review concepts and theories pushed forward by Karen Barad.

1) Barad's Grounding in Physics

Barad's work in philosophy is indecipherable without first reviewing their work in physics. Their canonical work in new materialism, *Meeting the Universe Halfway* (2007), relies heavily on the dialogue and experiments of Werner Heisenberg and (most notably) Neil Bohr. During the 1930s and 1940s, Heisenberg and Bohr were at the center of the debate regarding the

future of physics. As the atom bomb came closer and closer to reality, Bohr and Heisenberg were confronted with the notion that Newtonian mechanics could not account for all phenomena, necessitating a paradigmatic shift in presumptions made about objects. As stated by Barad (2007),

> classical epistemological and ontological assumptions, such as the ones that underlie Newtonian physics, include the existence of individual objects with determinate properties that are independent of our experimental investigations of them…In other words, the assumptions entail a belief in representationalism (the independently determinate existence of words and things), the metaphysics of individualism…and the intrinsic separability of knower and known (p. 106/107)

Much to the chagrin of Bohr and Heisenberg, such assumptions did not explain the phenomena that they were observing.

The two-slit experiment in which waves and particles exhibit the behavior of each other – which would be deemed impossible by Newtonian physics – served as an important exemplar of the argument that Barad is attempting to craft. It is equally important to note that there are varying interpretations of this experiment and that even Bohr and Heisenberg were never in complete agreement (Faye, 2019). Per Bohr, the inability to precisely measure waves and particles led to the conclusion that the method of measurement had more effect on the phenomena itself than previously argued (Barad, 2007; Faye, 2019). Essentially, Bohr's interest in wave/particle duality is making a comment about the nature of reality, as opposed to our knowledge of it (Barad, 2007; Hilgevard, 2016).

2) Theory of Agential Realism

Building upon the above conceptual definitions in quantum physics, Barad's primary contribution is their theory of agential realism as laid out in *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (2007). This seminal work in the new materialist canon provided a reinterpretation of the ontological and epistemological nature of phenomena, research methods, and ethics in general. In Barad's (2007) words,

> in my agential realist elaboration, phenomena do not merely mark the epistemological inseparability of observer and observed, or the results of measurements; rather, phenomena are the ontological inseparability/entanglement of intra-acting "agencies"…In other words, relata [a thing or term related] do not preexist relations; rather, relata-within-phenomena emerge through specific intra-actions…then, intra-actions enact agential separability…reality is composed not of things-in-themselves or things-behind-phenomena but of things-in-phenomena (p. 139/140)

At the base, Barad (2007) is pushing for an understanding of phenomena that is not pure exteriority or pure interiority. In this account of reality, the actual subjective referent and apparatus used to illuminate such phenomena cannot be viewed as separate (Van der Juin, 2012). Thus, phenomena become "differential patterns of mattering," and action is not solely an exterior force but is enacted within and outside of different human and non-human elements (Barad, 2007). Crucially, the apparatus, or method of studying phenomena, is not conceptualized as a mere tool, such as a microscope. Instead, Barad (2007) argued that

> apparatuses are specific material discursive practices…apparatuses produce differences that matter…apparatuses are material/dynamic configurations of the world…apparatuses are themselves phenomena…apparatuses have no intrinsic boundaries but are open-ended

practices…apparatuses are not located in the world but are material configurations or

reconfigurations of the world that re(con)figure spatiality and temporality as well as (the

traditional notion of) dynamics (p. 146)

In this description, experimental tools are not simply tools acting upon phenomena; they are

embedded reconfigurations of the medium that is both a part of reality itself and a part of the

overall experimental and experiential assemblage. To put it another way, Barad's (2007)

explication includes research tools as an important part of phenomena being studied as opposed

to being gazing devices.

The notion of the apparatus fundamentally changes the notion of objectivity made

possible by Newtonian physics. This form of objectivity relies on a mirroring effect in which the

properties of phenomena can be considered objectively "this or that" provided they match with

some exterior, previously existing categorization system (Barad, 2007). With apparatus

conceptualized as such, objectivity means being accountable for "agential cuts" made on objects.

This means that individuals must make take into account the researcher, the researched, the

research instrument, and all other intra-acting components in coming up with the final conclusion

of what is or is not. Put simply by Barad (2007), "we don't obtain knowledge by standing outside

the world; we know because we are part of the world" (p. 185). Overall, knowing becomes a

distributed practice that includes the larger material arrangement of human and non-human

elements.

Media Ecology Defined

While new materialism will provide the foundation for analysis, there are select concepts

from media ecology that can aid in shedding light on the technical aspects of the phenomena at

hand. Media ecology serves as a metaphor for the field itself. In breaking down the terms,

medium (i.e., media singular) is defined as "a particular form or system of communication," "the materials or methods used by an artist," and/or "a method or way of expressing something" ("Medium," 2021; "Medium," 2021). Ecology refers to "a branch of science concerned with the interrelationship of organisms and their environments" and/or "the totality or pattern of relations between organisms and their environment" ("Ecology," 2021). The creation of the metaphor, primarily attributed to a public address by Neil Postman (1970), served the purpose of conceptualizing media technologies (radio, television, etc.) as environments as opposed to mere devices. Put succinctly, Postman (1970) stated that media ecology has the

> intention [x] to study the interaction between people and their communications technology. More particularly, media ecology looks into the matter of how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances for survival. The word ecology implies the study of environments: their structure, content, and impact on people (p. 160)

Unlike other theories of human communication, and similar to theories from new materialism, this definition is suggestive and capacious rather than exacting (Strate, 2018). However, there have been several other definitions of media ecology offered since the first attempt at unifying the field. In the years following the naming of this particular area of inquiry, Nystrom (1973) argued that media ecology was a preparadigmatic science that had yet to create a coherent framework for organizing subject matter and methods. This, in many ways, has led scholars within the area, both individuals associating with the tradition as well as individuals who do not explicitly associate their work with media ecology, to illuminate meaningful relationships between humans and their communication technologies.

Considered in the context of elections, the conceptualization of media as a primary agent of change alters the ways in which the act of voting is perceived. For instance, if the medium has significant effects on the potentialities and abilities of the individuals, then the ballots themselves become more than inanimate objects that serve as neutral vehicles for the will of the people. Instead, the interplay between the medium and the individual becomes of integral importance for understanding the act of voting in general.

Selected Concepts in Media Ecology

It is impossible to discuss media ecology without revisiting the work of Marshall Herbert McLuhan. Often regarded as the Godfather of media ecology, McLuhan was an English professor and public intellectual who first brought the field of inquiry to the attention of the public ("Interview from *Playboy*," 1969). McLuhan's (1964) aphorism, "the medium is the message," and McLuhan's (1967) amendment to "the medium is the massage" served as the founding aphorisms of media ecology. They brought attention to the form of media in shaping the messages that can be carried, the manner in which messages can be received, and the consequent avenues of attention and action available. In the section to follow, the theories of McLuhan, as well as other scholars' engagement with these theories relevant to the present study, will be outlined and explained.

1) Media as Extensions of Man

Perhaps McLuhan's most important contribution to media studies was born from his definition of media themselves. To McLuhan, a medium is any extension of any psychic or physical human faculty, be it the spoken word, clothing, clocks, money, or television (McLuhan, 1964; McLuhan, 1967). This definition somewhat muddles the distinction between technology or tool, which can be considered synonymous, and communication media. To McLuhan, all

technologies or tools were also at once a medium of communication (Logan, 2016). Thus, the mechanism of technology can be considered the tool, and the function of technology is the medium of communication. This definition and operationalization of terms ostensibly render the difference between the two arbitrary, as they are acting in concert as opposed to one imposing on the other.

In tracing the development of media themselves, McLuhan identified three epochal time periods defined by their dominant medium of communication because he thought that the medium of communication played a central role in the organization of personal, professional, and social life. Drawing on Mumford (1934) and Innis (1951), McLuhan argued for the delineation of the oral, literate, and electric time periods. Primary orality was the time period prior to the invention and ability to record a written language and privileged memory, mnemonics, and tradition (Ong, 1982). Primary literacy dealt with the development and dominance of literacy as a mode of communication and was characterized by an emphasis on fragmentation, specialization, visualization, and revolution (Einstein, 1979; McLuhan, 1962). Primary electricity started with the invention of the telegraph and signaled the eventual dominance of consequent technologies, such as the radio and the television, that disconnect the transfer of information from transportation (McLuhan, 1962; Ong; 1982).

Media epochs are discussed here due to the contention that the content of one medium is always another medium. For instance, speech becomes the content of the written word; the written word ultimately becomes the content of television. This theoretical move further pushes thinking away from content and towards form, as it shows the endless recyclability and resurfacing of past media. As stated by McLuhan (1970)

the same movement is found in the age-old theme of ends and means. New cliché, new

technology retrieves unexpected archetypes from the rag-and-bone shop. New means

create new ends as new services create new discomforts. A new rim-spin put around any

slower organization, destroys the slower one (p. 46)

In essence, new media forms retrieve older forms and create new opportunities and threats for

societies. This notion is particularly important in the digital era of media communications due to

the fact that the means of retrieving both artifacts and experiences of the past have increased

exponentially. As expressed by McLuhan (1970),

As a more intense reality resulted from our great variety of new techniques of retrieval.

Both past cultures and primal individual experiences are now subject to ready and speedy

access (p. 117)

Therefore, media become any psychic or physical extension of an individual and have a

predisposition to retrieve elements of the past that were previously inaccessible. In doing so, they

create new communicative patterns that displace or obsolesce certain technologies while

enhancing or intensifying others (McLuhan, 1988).

2) *Media and the Human Sensorium*

One of McLuhan's primary preoccupations was with the effects that a new medium could

have on what he termed the equilibrium of the human sensorium. Though a somewhat opaque

and vague term, the sensorium can be thought of as the capabilities of humans to think within

and about their environments. Winderman, Mejia, and Rogers (2020) conceptualize sensorium

rhetoric as embodying the "visceral public" in which individuals are by a particular feeling. Put

another way, it can be thought of as a lens through which humans communally experience

communication through a combination of physiological and technological components

(McEwen, 2019). In outlining this idea, McLuhan introduced the myth of *Narcissus*, in which the young Narcissus inaccurately thought his own reflection in the water was someone else, to illuminate that

> the point of this myth is the fact that men at once become fascinated by any extension of themselves in any material other than themselves…In the physical stress of superstimulation of various kinds, the central nervous system acts to protect itself by a strategy of amputation or isolation of the offending organ, sense, or function. Thus, the new stimulus to new invention is the stress of acceleration and increase of load…Such amplification is bearable by the nervous system only through the numbness or blocking of perception…It is this continuous embrace of our own technology in daily use that puts us in the Narcissus role of subliminal awareness and numbness in relations to these images of ourselves. By continually embracing technologies, we relate ourselves to them as servomechanisms (p. 43/46)

Thus, the introduction of a new medium stresses an individual's existing sensorium, or ability to deal with the manner in which the medium is communicating information. As a result, McLuhan thought that individuals become numb or ignorant to the effects of a new medium on the sensorium itself. Moreover, it also recalibrates the medium itself following the media ecological argument that we shape our media and then, in turn, they shape us in a continual manner.

Importantly, McLuhan expressed the sensorium in terms of a ratio. Originally, this ratio would have been two-dimensional, consisting of the balance between visual and acoustic elements. Put simply, this is the translation of the five senses (eyesight, hearing, taste, touch, and smell) into a formula in which equilibrium may be created, sustained, and threatened. Continually, new media forms engage more and more senses and sensations all at once in turn

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shaping the human sensorium itself (Miroshnichenko, 2016). In sum, the sensorium is aimed at conceptualizing sensation, NOT cognition. The emphasis is placed on different sensations and the interconnections and interactions between them.

    3) *Figure, Ground, and Rearview Thinking*

        In addressing problems associated with media's effect on the human sensorium, McLuhan warned against the implementation of "rearview mirror" thinking. In his typically obtuse nature, McLuhan meant to communicate the idea that society attempts to assess each new medium incorporated into environments through the lens of past media (Barnes & Hair, 2009). As stated by McLuhan (1964), "we look at the present through a rear-view mirror. We march backwards into the future" (p.xx). In other words, we are always looking to our past to explain our future in a way that ignores the novel, revolutionary aspects of new inventions. Put another way, Wilhemsen (1973) stated

> Existentially, man causes the conclusion making it be. This is the horse before the cart. The rearview mirror, the bright student seeing it all set out for him, is the cart before the horse. The a priori for making sense is that sense be made. Meaning, nature, essence, concept, are all made to be by the activity of the mind itself…Everything is already done and over with, in neat sequential fashion, to the rearview mirror…Everything is brand new and unexpected to the creative doer…invention creates its own antecedents (p. 25).

The main impetus of this idea is to avoid looking to the past to solve the future. What is being called for is that new technologies be approached with new methods (Nord, 2013). In doing so, our media and understanding of our world are heightened and more accurate.

        McLuhan attributed this error to a preoccupation with figures as opposed to ground. In two seminal terms, McLuhan used figure to refer to content, and the ground referred to the

contextual factors (Logan, 2011). For example, content deals with the radio or television show itself, whereas the ground would be the technical and cultural components enabling the show to exist in the first place. McLuhan felt that too much emphasis and attention was directed toward the figure (McLuhan, 1964). The ground, in its encapsulation of not only the content but also the greater social effects and patterns of media forms and consequent changes, has the ability, per McLuhan, to tell us far more about what was actually happening (Sevilla, 2018).

4) *Formal Causality*

Central to the above theoretical formations was the way in which logic, cause, and effect were conceptualized and employed in such an approach. As previously discussed, a starting point of media ecological inquiry (i.e., the ground) reverses cause and effect as was traditionally accepted and understood in the mid-twentieth century social sciences (Oldenhof & Logan, 2011). Effectually, this created what McLuhan called a "quantum logic," in which McLuhan made grandiose statements with substantial gaps between contention and conclusion, leaving the reader to fill in the blanks (Kuhns, 1971). Oldenhof and Logan (2011) called this McLuhan's "spiral thinking," which is emblematic of a structure seen in the most basic biological structures (i.e., DNA) and involves advancing things in one plane while retreating in others. This way of thinking allowed McLuhan to go back and forth dialectically between different historical periods, different technologies, and different causes and effects.

Integral to understanding how this manner of thinking can be productive, let alone avoid being outright fallacious, is the application of causality. Developed by Aristotle, there are four forms of cause: material, formal, efficient, and final ("Aristotle on Causality," 2019). Material refers to the physical components through which things are constructed. Efficient cause refers to the agent of action, or the makers and the making process. The final cause would be the

completed thing itself. The formal cause can be considered the blueprint or design of the thing to come. In thinking through how these causes interact, Anton (2012) gave the following clear example of a sculpture of a person:

> First, the sculpture must consist of some material. It could be wood or clay or stone, etc. In addition to such sheer materiality, it needs to be made by means of particular methods, including hand or tool techniques and manual procedures as well as other specific actions involved in its production….The final cause refers to the ends served by the sculpture: it might be aesthetic appreciation or simply the enjoyment and satisfaction of it; the final cause of an item is its end, or the 'for-the-sake-of-which' it comes into being…Last…we have the formal cause that, basically, exists in the mind of the artist and of audience members. Formal cause refers to ideas or expectations and sensibilities that need to be satisfied in order for the viewers to recognize in the material *what* the sculpture is *of* (p. 20)

Traditionally, the efficient cause is the dominant mode of reasoning in natural and social sciences. Efficient cause offers a view of things in a linear, sequential manner (McLuhan, 2011). The popularity of the adoption and application of efficient cause is, in part, due to its relative ease of understanding.

However, central to McLuhan's thinking was the application and amplification of the oft-neglected formal cause. Formal causality is much more difficult to pin down as, per McLuhan (2011),

> Formal causality, in which coming events cast their shadows before them, is hugely mysterious. It deals with environmental processes, which are not sequential and which therefore baffle any rational attempt to come to grips with it (p. 7)

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While scientific and social scientific experiments are designed to confirm hypotheses about happenings and phenomena known to be present within the world, they are necessarily designed for the exploration of the unknown. Moreover, it is argued that the complexities are not compressible into mutually exclusive categories nor consequently turned into a total or comprehensive account of things (Bunge, 1959). Of course, most studies do not strive to account for all things and usually offer an argument narrow in scope to push further a particular knowledge of some sort. This was not the charge of McLuhan.

The primary charge in McLuhan's insistence and incorporation of formal cause was to consider the factors that are often relegated to the boundaries or completely unaddressed in order to create a controlled experiment. Formal cause allows all elements to be considered simultaneously as bringing about the phenomena being addressed.

The Difficulties of New Materialism and Media Ecology

Primarily, we have focused on the theories of and scholarship in new materialism and media ecology with particular emphasis on the ideas of Barad and McLuhan. Though coming from very different fields of study, Barad and McLuhan have numerous areas of overlap in their commentary on conceptualizations of the world. The following section will identify and interrogate areas of compliment and contradiction, as well as the curiously similar veracious criticisms often levied against both scholars.

First and foremost, the underlying assumptions upon which both Barad's and McLuhan's theories are built rework dominant conceptualizations of causality during their respective time periods. Barad's reworking of objectivity departs from the efficient cause that dominates the natural sciences (Barad, 2007). Instead, the known is not fully separated from the knower and/or the tools employed by those seeking to know. Similarly, McLuhan's evocation of formal cause

presents a causality that is mysterious, non-linear, collective, enigmatic, outside of time and deals with becoming as opposed to being (Anton et al., 2017). As noted by Kuhns (1972), it was this logical structure that created the sort of "quantum logic" that often mystified and enraged other scholars. In the same manner that formal cause encapsulates all other causes and their constituent elements, Barad's objectivity involves intra-actions between all elements of the researcher and research.

In addition to the underlying causal implications, Barad's conceptualization of the apparatus and McLuhan's conceptualization of media are pushing towards a similar implication. To McLuhan (1964/1967), the medium is the message/massage, or an extension of human faculties, in that the form of any given medium has a significant impact on the messages created, communicated, and received. Although it is important to note that, perhaps as a nod to his catholic faith and sensibilities, McLuhan did always keep the human as the central agent in the equation (Macloed-Rogers, 2020). Still, this argument was a direct thumb in the eye to the notion of humans as users *of* technology as opposed to being used *by* technology. In the same vein, Barad's conceptualization of apparatus moves away from representationalism practices to advocate for consideration of the different elements in the recording process (Barad, 2007). Tools used to carry out experiments are no longer inert objects used to observe external phenomena, but instead, Barad argues that the apparatus of study affects and is affected by the larger context. While Barad is a bit more radical than McLuhan in distributing agency to constituent elements, both theorists place emphasis on matters that are not the mutually exclusive categories of human, tool, and phenomenon. Instead, they are acknowledging the ontological and epistemological overlap.

If we see apparatus as a medium, we can consider the entangled implications of McLuhan's (1964) argument that we shape our tools, and they, in turn, shape us. For McLuhan, the human sensorium was altered by communication media, with the characteristics of each form emphasizing and de-emphasizing certain human senses. In their own unique way, Barad (2007) echoed this sentiment in asserting the notion that "we don't obtain knowledge by standing outside the world; we know because we are part of the world" (p. 185). In other words, the lines between humans, tools, and phenomena become blurred. In much the same way that a wave and particle cannot be understood in isolation, nor can a medium of communication be understood as something merely used by individuals. Both apparatus and medium (we might even consider apparatus and medium synonymous) structure human communication and experience.

Towards a New Materialist Analysis with a Media Ecology Sensibility

New materialism and media ecology challenged readers to approach issues of communication and technology in new and occasionally infuriating ways. Notably, Barad has been maligned for her disregard for history, lack of engagement with conflicting theories, and accomplishing the exact opposite of what she sought to accomplish (Pinch, 2011). To elaborate, Barad's approach, to some extent, pulls upon a narrow interpretation in the history of physics that is still contested to this day, and the fact that such an interpretation is at the crux of her argument has the potential lead to a circular argument and/or discount the entire approach in general. To some extent, criticisms against these theorists bear merit. Similarly, McLuhan and Barad are often maligned for similar deficiencies. McLuhan's detractors often attacked him for his lack of methodological rigor, obtuse/opaque writing, tendency to "borrow" without citing, and propensity to make monumental leaps between concepts and historical periods (Carey, 1988; Macmillan, 1992). McLuhan's aphoristic, mosaic, interdisciplinary, and probing style crossed

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many boundaries without so much as a reflective blink. In the same vein, Barad's diffractive methodology is a transdisciplinary attempt that is often perceived as overcomplicated and repetitive both within and outside of new materialist realms. However, the elements pointed to in negative assessments of Barad's and McLuhan's work by critics are the exact elements pointed to in positive assessments of their work. Thus, the following section sought to provide a framework in which New Materialist inquiry can be bolstered primarily by the ideas of Barad and supplementarily by McLuhan.

On Doing New Materialism

Perhaps one of the most difficult hurdles for scholarship in both new materialism is deciding how exactly to *do* a study in either realm. Barad's diffractive methodology raises questions about the plausibility of realistically creating an agential realist account of anything. McLuhan's method relied on his voracious reading habits and ability to recall quotes and passages from fields as widely related as physics and classics. Thus, we will first outline a form of new materialist inquiry outlined by Fox and Alldred (2013).

New Materialist Inquiry

As a dispersed intellectual tradition with different branches and approaches, there is no singular approach to uniting studies in new materialism. Per Lupton (2019),

> method informed by new materialisms acknowledge that they are part of a "research assemblage", in which their own embodied and experiential positions and interests contribute to what they choose to research and how their research material is analyzed.
>
> Analyses can therefore only ever be partial rather than making universal claims (p. 2000).

Put simply, any new materialist method of inquiry shines a light on particular elements within the phenomena. For this purpose, Fox and Alldred (2017) argued that a new materialist approach

to inquiry focuses on what a method can *do*, as opposed to what a method *is*. The emphasis of the method is on social production, not social construction. As such, the object of study becomes the relations between networks of human and non-human elements affect or are affected (Fox & Alldred, 2013).

Fox and Alldred's (2013) formula for conducting research in new materialism will be utilized. Building on a delluezo-guattarian ontology, Fox and Alldred (2013) proposed that both the research assemblage and the assemblage in question, as well as the relations between components of each, be considered in order to produce a structured and comprehensive research paper. Represented formulaically, Fox and Alldred's approach goes as follows:

$$(E)/(R) = [(A) * (B) * (C)] [(x) * (y) * (z)]$$

The (E) variable represents the assemblage with its own affect economy. Put in a different language, E is the phenomenon being studied. Then, (ABC) is representative of the relations between the assemblage (E). We can then view (R) as the research assemblage. The research assemblage is incorporated to study the relations between ABC and includes methods and instruments of data recognition, collection, analysis, and reporting. However, within this model, (R) can also be seen as having its own affect flows, represented by (XYZ). These relations produce a third hybrid assemblage comprised of the interaction(s) between [ABC] and [XYZ]. In describing this third hybrid assemblage, Fox and Alldred (2013) contended that

> this hybridized affect economy that will produce the outputs of research such as the 'knowledge' of assemblage E, and potentially altered sensibilities concerning E in the researcher, among research audiences, and perhaps the people caught up in the event – sensibilities that a constructionist would describe as 'social constructions' of E…we see researcher and data (along with many other relations) as a 'research-assemblage' with its own affect economy, we begin to recognize research as a territorialization that shapes the

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knowledge it produces according to particular flows of affect produced by its

methodology and methods (p. 406)

In sum, conceptualizing research in this way allows the researcher to attend to human and

nonhuman actors, explore effects at micro/meso/macro level, and locate movements of

territorialization and de-territorialization of affect economies (Fox and Alldred, 2013).

Moreover, Fox and Alldred (2013) have created a universal formula that will allow the study of

material and immaterial elements in a non-universal manner.

In practice, such a method becomes focused on relational questions (Fullagar, 2016). For

instance, Mol (2002) used a similar framework to investigate how the multiplicitous elements

available in hospitals – tools, methods, human bodies, etc. – enact the same diseases in different

ways for individuals depending on whether individuals were treated based on clinical or

laboratory information. By focusing on the elements that are used to identify and treat disease in

humans, Mol argued that the tools and discourses surrounding the identification and treatment of

diseases altered the ultimate effect of the disease on individuals. Additionally, Latour (1984)

charted the associations between human and nonhuman elements affecting the development of

pasteurization techniques. By paying close attention to the peculiarities of the research process,

Latour showed the efforts necessary to not only develop the technique but also to sell the idea to

the public. Both approaches, although varied in their language and intricacies of approach, are

emblematic of a style of new materialist research approach that investigates the multiplicity of

factors affecting the phenomena studied, as well as the effect that the researcher and

characteristics of the research assemblage have on the overall resultant phenomena. For

elections, this approach allowed the unbridled exploration and inspection of voters, voting

technology, and norms of democratic institutions simultaneously without limiting inquiry to a narrow area of focus.

Method

The proposed method argued for an elaboration of Fox and Alldred's (2013) framework for new materialist design with Barad's theory of agential realism, as well as select concepts from media ecology strategically deployed throughout. In traditional, social-scientific approaches, the methods section would typically deal with questions of what type of study was done, what or whom was actually studied, and how exactly did the researchers go about that study (Huett & Koch, 2011). This might be encapsulated within concise and distinct participants, design, measures, and procedures sections ("Writing," 2014). However, the complexity and non-linearity of new materialism do not fit neatly into this structure. Therefore, the present study will first utilize the formulaic approach to new materialism offered by Fox and Alldred (2013). Next, the unit(s) of analysis, the process by which units are identified and collected, the analysis procedures, and the reporting standards will be described within the context of this model.

New Materialist Inquiry with Barad

While Fox and Alldred's (2013) framework will serve as the primary framework for analysis, Barad's form of new materialism will serve as an informant. As previously mentioned, represented formulaically, the framework of Fox and Alldred's (2013) new materialist inquiry looks as such:

$$(R)/(E) = [(A) * (B) * (C)] [(x) * (y) * (z)]$$

As explained above, this format allows for a hybridized understanding of the research assemblage and the phenomena assemblage. Here, Barad's conceptualizations of the apparatus and intra-action are particularly important. In understanding the applicability of the above formula. In conceptualizing a starting point for analysis, the research assemblage would be

considered the apparatus for studying the phenomena. Additionally, the voting technologies can be seen as the apparatus through which voter opinion

Unit of Analysis

As has been previously mentioned, neither new materialist inquiry nor media ecology isolates content entirely from the context. For media ecology, there are somewhat stable technical characteristics that are addressed (Postman, 1985; Lum, 2006; McLuhan, 1964). For new materialists, their focus is on capacity; that is, the focus is on becoming, not being (Fox & Alldred, 2013). These two are not necessarily in contradiction, as Barad (2007) argued that while the exact measurement may be difficult and in continual flux, taking account of the agential cuts that are being made by the measurement apparatus in which "only part of the world can be made intelligible to itself at a time because the other part of the world has to be the part that it makes a difference to" (p. 351). Thus, the acknowledgment of finite characteristics of media need not negate the difficulty of measurement to the extent that the unit of analysis is not taken as definitive. The unit of analysis is the material and assemblage or environment as a whole.

Thus, the unit of analysis will comprise form and function as well, as content and associations, at a specific period in time. For instance, at times, the analysis will look at specific technical characteristics of the physical elements and arrangement of ballots used by voters to cast their votes. In addition, the analysis, at other times, will focus on the discourses surrounding such technologies. In combination, these two elements offer an explanation of the efficacy of voting technology that includes technical components and public perception. Although quantum physics is inclined towards the description of micro-level atomic principles, Barad's (2007) agential realism will serve as a platform to expand the ontological consequences of quantum experiments to the meso and macro levels of social worlds.

Identification and Collection

Perhaps one of the more confusing elements surrounding both new materialist and media ecological studies is their choices as to what does or does not constitute an artifact worthy of study. First, it is important to understand the identification of data as part of the research assemblage. That is, the research assemblage must attend to both human and nonhuman, animate and inanimate, material and abstract, and the flows between and across them (Fox & Alldred, 2013). Specifically, the research assemblage is looking for capacities to produce and the territorialization and deterritorializations created through these affective flows. This may occur by first listing all potential components. By focusing this study on the mediating entities between assemblage entities, we can start to locate them through both surrounding discourses as well as "significant ecological" thoughts resonating through a sense of the media at hand.

The task above is a laborious and complex process somewhat similar to what Latour (2000) termed "slowsiocology." While this present project is transdisciplinary and by no means limited to sociological matters, the sentiment of the term remains relevant. Essentially, the process of the collection must take into account all of the heterogeneous human and nonhuman elements as well as the associations between them (Papilloud, 2018). This includes both planned and unplanned actors and relations. Thus, we will look for affect flows between technical, material, and discursive elements within and between different components in the larger voting assemblage.

The identification of data and the collection of data will take multiple forms. First, the technical components of the two modes of voting in the 2020 election will be identified. This might be considered the "micro" level considerations. The two modes – in-person and absentee/mail-in – thrust voters into different environments and thus interact with different forms

of mediating technologies. Second, the infrastructural and environmental factors surrounding the election will be identified. This might be considered the "macro" level considerations. Third, the discursive and propagandic elements surrounding and intervening with the election will be collected from a variety of popular press sources. This might be considered the "meso" level considerations. Fourth, the research assemblage will be reassessed. For instance, I will reflect on my own intellectual biases, voting experience, and involvement with the phenomena as they unfolded in society. Fifth and final, the research assemblage and phenomena assemblage will be considered in tandem.

Data Analysis

After identification and collection of the components within the assemblage, they must be analyzed. Following Fox and Alldred (2013), data analysis should investigate both human and nonhuman elements of the assemblage with particular attention paid to the flows and affect economies between each as well as their relationship to the research assemblage. Barad's emphasis on the apparatus as a part of the material-discursive phenomena will be employed to understand more deeply how voting technologies mediate the relationship between the individual, technology, and democracy. Select concepts in media ecology will be used to help focus this analysis by honing in on mediating elements and their technical characteristics. The result is an analysis that aims to address the multi-faceted components surrounding voting technologies.

As shown above, the method employed to study voting technologies seeks to enter, exit, and re-enter the issue of voting technology and voter fraud from different vantage points in order to provide a unique perspective on voter's experiences in the 2020 U.S. presidential election. In analyzing the media forms present, close attention will be paid to the characteristics of the form

of voting technologies, the environment in which they are emplaced, and the discourses surrounding the phenomena as a whole. Associations already identified will be analyzed, and associations that were not previously identified will be documented and explored. Consequently, the analysis will oscillate back and forth between discourses, formal characteristics, and associations of and between human and nonhuman actors.

Reporting Results

In contrast to other studies, the analysis and the results do not represent two distinct sections. Instead, they are considered to be two parts of the same hybrid assemblage that arises. As stated by Barad (2007), "we are a part of that nature that we seek to understand" (p. 67). This idea is apparent in other studies of technology as well. In their study of drones, Hildebrand (2021), gives an "auto-technographic" account of their findings by combining theoretical concepts, community ethnography, and personal observation experience to create a comprehensive report of drone usage and communities. While this study pulls on ethnographic material sparingly, lived experience is noted as an important element of studying complex phenomena such as voting, democracy, and technology. Thus, the report of the results will take into account both the research assemblage and the phenomena assemblage. However, it is important to note that this study did not adhere to the norms of ethnographic research, despite including anecdotal information.

For the research assemblage, it will be necessary to account for personal bias and morals that seep into the analysis. For the analysis described above, it is important that neither of the aforementioned components is ignored or stilted to intimate that the report itself is an unmediated account of the phenomena. It is noted here that this will represent a distinct break from "McLuhanism," though his concepts will still be utilized in the analysis. McLuhan (1964)

argued that having a "moral point of view too often serves as a substitute for understanding in technological matters" (p. 216). An argument for which he was often lambasted, the attempt to remove oneself from analysis and report is not possible in this study. Instead, I turn to Postman's (2000) comment in which he stated, "I don't see any point in studying media unless one does so within a moral or ethical context" (p. 11). Following this sentiment, the research report produced not only took into account personal bias but incorporated it into the analysis and reported itself.

For the phenomena assemblage, it will be necessary to report on the relationships between human and nonhuman actors. To accomplish this, the research report will follow in much the same manner as the analysis: entering, exiting, and re-entering the issue at different time periods. Ultimately, the analysis sought to provide a picture of voting technology controversies in the 21st century while fleshing out ontological implications.

CHAPTER 4: VOTING TECHNOLOGIES AND EXPERIENCES IN 2020

Organizational Note

The following section will unfold in five discrete sections. First, we will take a brief interlude – in the spirit of new materialists such as Latour (1999/2007), Mol (2010), Hildebrand (2021) – and provide a brief sketch of the different ways in which voting was experienced by myself and the ways in which my own experience will inform the research endeavor at hand, as well as how others might have been experienced during the 2020 United States Presidential Election. This narrative will allow us to revisit the phenomena and research assemblages with a deeper understanding of what it might have been like to vote in the 2020 election. Moreover, by revisiting my own voting experience, I will be provided with another opportunity to appraise my own biases – both conscious and subconscious. Second, we will return to our analysis and begin an analysis of the phenomena assemblage. Per Fox and Alldred (2013), the phenomena assemblage includes both human and non-human elements inter- and intra-acting with each other and the environment. As a starting point, specific voting technologies and their technical – i.e., hardware – components will be identified, isolated, and analyzed. While this analysis is primarily informed by new materialism, it is the section on the technical characteristics in which key ideas from media ecology will be incorporated in tandem with concepts from new materialism in order to clarify and add conceptual depth to the discussion and understanding of voting technologies as a medium through which democracy is enacted. Third, we will build out from the specific, static characteristics of voting technologies towards the other material and discursive/propagandic elements – both human and non-human elements – of the phenomena assemblage. Fourth, the research assemblage and apparatus itself will be inspected and reflected upon. Specifically, I will reflect on three components: data collection, data analysis, and data reporting. Fifth, and finally,

the whole assemblage, including the research and phenomena assemblages, will be brought back together and examined comprehensively.

Interlude: A Rhizomatic Voting Experience in 2020

Prior to analysis, it may be helpful to examine the experiences of voters in the 2020 presidential election. In the words of Barad (2007), "we don't obtain knowledge by standing outside the world; we know the world because we are a part of it" (p. 185). Thus, an account of my own experience of the 2020 US election may aid in illuminating and exploring certain components of the phenomena, as well as allowing me to indicate and assess any of my own personal biases prior to analysis. Most recently, such explorative and/or creative expression has been utilized by Hildebrand (2021) in their analysis of drones. Termed "auto-technographic" information, Hildebrand (2021) was an active member of the drone community and thus saw fit to include information about their own experiences, as it, whether acknowledged or not, plays an integral role in the manner in which researchers approach phenomena. To be clear, this was not an ethnographic study and did not adhere to ethnographic research norms. However, certain personal experiences were included to bolster the analysis. Similarly, I consider myself to be a politically active member of society. As an individual who voted in the 2020 election, my own research endeavor began from the curiosity that arose after witnessing and participating in the 2020 presidential election. Thus, I incorporate in the following section a brief interlude detailing my own voting experience. This information will aid in providing a jumping-off point for analysis of the phenomena assemblage, as well as foreshadowing the eventual analysis and incorporation of the research assemblage.

As previously mentioned, the 2020 election was unique insofar as the process by which ballots were disseminated, cast, counted, and ultimately certified. When one thinks of what the

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process of voting is, an archetypal image may arise: the individual travels to a local municipal building of some sort, they are funneled through a process of identification, given a ballot of some form, provided some sort of privacy in which they indicate their vote, and then they deposit the form in a receptacle of some sort. As the preceding sentence is read, each individual, provided they have voted in an American election of some sort, likely calls some image to their mind. One might even pause to say, "Wait, you forgot about the sticker!" to be displayed proudly on one's lapel. This experience is monolithic and even a rite of passage to some extent in the United States. But, this was not the experience for all in 2020.

The COVID-19 pandemic and corresponding restrictions on travel and occupation of certain spaces altered the first consideration of voters. Under the assumption that a person was committed to voting in the election, the first consideration might usually be *where* to go and cast their vote. However, with a global pandemic that was still amassing high death totals at the time, the first consideration for voters instead became *how* I should vote. For many, it is assumed that voting is done in person. However, for the first time, we see large numbers (the most in recorded U.S.) history exploring other options for casting their vote. A question primarily of logistics is now a question of morals, politics, and public health for voters. While the focus of the preceding analysis is not centered on interventions in the election made by COVID-19 pandemic restrictions, it is worth noting that such restrictions did play an important role in shaping the material practice of voting in 2020.

With a novel consideration now in place, the act of voting could take a variety of forms. Nearly half (46%) of the populace decided to do what might be considered voting "remotely" – i.e., cast an absentee ballot (Rakich & Mithani, 2021). For many, including myself, this might be an entirely foreign experience. Thus, figuring out how to cast an absentee ballot might first

require some research. Depending on one's literacy level and availability of internet access, this may be a more difficult task than one might think. That might lead an individual to not vote at all.

At the time, I wanted to be "COVID conscious"; however, there was one consideration that ultimately became the primary factor in my decision to vote in person: time. As a full-time graduate student with teaching responsibilities, as well as full-time employment through two other jobs, I simply could not justify taking the time to find, print, and turn in a ballot. A secondary factor affecting my decision of how to cast my vote was that my jobs outside of academia were bartending. As a public-facing profession, I had been exposed early and often. In fact, after the initial "hard" quarantine – which only lasted about a month in Fargo, North Dakota – many service industry members returned to work without masks at all during the summer of 2020. To some extent, and somewhat regrettably, I was admittedly a bit desensitized to the risks of COVID-19 transmission. Thus, I figured a quick trip in and out of the voting location would be the easiest way for me to cast my vote.

For my district – downtown Fargo, North Dakota – the polling place was usually done at the library, which is where I cast my vote in the midterms two years prior. However, in order to practice social distancing mandates, the location was changed to the Fargo Civic Center, only one block closer – both were about a 2-minute walk from my apartment. I had heard about the long wait times and thus decided to go around 2:30 pm, figuring that most people would be at work at this time. I was privileged enough to have a lull in my schedule because I had taught classes in the morning, and my bartending shift did not start until 5 pm. A tangential bonus of being able to go at a slow time was that I would expose fewer people and be less exposed myself to the potential transmission of the COVID19 virus. The short travel time to the voting location

and the ability to choose a slow time to go to the polls were privileges I noticed were not available to all.

Upon arrival, the floors were marked with arrows and dividers funneled voters. In the entranceway, I was greeted by a volunteer whose job appeared to be to make sure everyone had proper PPE and that they sanitized their hands prior to entry. Although I was apprehensive that there would still be long lines, the further I made it into the building, it became clear that this would not be the case. I was one of what appeared to be 15-20 voters in the room, with the addition of about 20 volunteers helping administer the necessary materials. The whole process of obtaining a ballot, voting, and depositing the vote in a scanner was done in a large auditorium. First, I visited a group of foldout tables where my identity was checked, and a ballot was presented to me. I was instructed to go to the other side of the auditorium, where they had spaced-out voting booths. Finally, I walked over to the final station, where an individual instructed me where and how to place my ballot in the scanner. I cannot remember if this is how it was done in past elections, but there was a certain feeling of finality associated with the actual, physical action of placing and watching my ballot get sucked into the machine. After my vote, I was handed the coveted "I Voted!" sticker and funneled out the door back onto the street.

In retrospect, the sticker created an interesting consideration. While I have never been one to proudly display a sticker of any kind on my person, I do recall on election day the pride with which many people typically display their stickers. However, in 2020 displaying ones sticker would have meant acknowledging – or to frame it another way, "admitting" – that one traveled in person during the pandemic to cast their vote. Thus, the sticker served as its own political signifier. Though I jammed mine in a pocket and did not think about it much at the time, the sticker as a symbol seemed significantly altered during this time period, which will avail

itself to be a running theme across often unnoticed and/or unacknowledged electioneering machinery in the 2020 election.

All in all, my voting experience was fairly archetypal, with the notable exception of COVID-19 precautions. It is important to add the caveat that this account was written two years after the happening itself. While I feel fairly confident in the accuracy of the account – as I have excluded information that I felt I was even potentially fuzzy on – there is always the distinct possibility of one's own memory being unintentionally misremembered, unintentionally embellished, or even outright fallacious. That said, measured from the moment I got off my couch to the time I sat back down on my couch, the total time elapsed was surely no more than 15 minutes. Despite the discourse of the time, I felt confident with my choices and that the ballot would be counted correctly – part of this feeling was derived from the fact that I dropped the ballot into the scanner myself. As we will see in the analysis to follow, this was not the election experience that many Americans would have in 2020.

Phenomena Assemblage

    A. Technical Features of Voting Technologies

The above passage served to depict the potential avenues available and considerations for voters in the 2020 election. Within the passage, there is a distinct emphasis on choosing a medium through which to cast one's vote. In the following section, the specific technologies utilized in voting will be analyzed with particular attention paid to their static, technical characteristics. That is, voting technology is to be considered a form of media. In other words, it is through voting technology – both analog, digital, and a mixture of the two – that an individual's political desires and opinions affect the future of the democratic system in which they exist. Primarily, the following analysis will interrogate the form of absentee ballots (mail-

in), and machine scanned ballots (in-person). The following section will identify and interrogate the technical characteristics using select concepts from new materialism and media ecology.

Prior to beginning analysis, it is important to reiterate the manner in which voting technologies are being conceptualized. While often relegated to the background – remaining unnoticed and undiscussed – the non-neutral nature of voting technologies was a key talking point during the 2020 election. As expressed in the interlude above, *how* one was going to vote and *if* that would affect the viability of their vote was of integral importance and concern. Thus, the following research project assumed the terms of medium/media and voting technology/technologies to be synonymous. Conceptualized broadly, a medium can be considered an extension of persons (McLuhan, 1964). Voting technologies serve as an important medium through which individuals extend their inner opinions and intentions in order to externally enact them upon the democratic systems within which they are situated. Importantly, we first shape our media, and then we – our experiences, perceptions, etc. – are shaped by media (Strate, 2018). Thus, we create our voting systems, and, in turn, they affect the ways in which we understand and perceive voting within a democracy.

With voting technologies conceptualized as media, the following research project attended to the micro-politics and affect flows of a variety of different components. Specifically, we see what Rivers and Weber (2011) called "mundane documents" come to the public attention. While initially coming from rhetorical studies and referring to texts, the term refers to components of a larger material arrangement that may seem un-exciting or invisible, or insignificant – For Rivers and Weber (2011), these are the smaller tangential documents that makeup, the larger more significant corpus – yet are of integral importance to the overall movement at hand. Building on the notion that voting technologies are an integral intermediary

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acting on and acted upon by a variety of other components within the larger material configuration, we are able to attend to components that might otherwise be entirely ignored by research.

A starting point for such an inquiry is the oft-overlooked distinction between voting by mail and voting in person. Up until the 2020 election, the Americans who voted by mail were met with little attention and/or opposition. In fact, mail-in voting was scarcely mentioned at all in many past elections. Yet, in the 2020 election, it became a point of major contention between the parties, with the widespread outcry that mail-in votes would lead to increased voter fraud. With a minimal shift in the actual form of mail-in voting, a small detail became a touchstone issue in the months leading up and the months following – though the latter will not be the focus of this analysis – the election.

In-Person Voting Technologies

First, it is necessary to identify the technical characteristics of traditional in-person voting. Up until the 2020 election, the experience of voting in person would have perhaps been ignored as an important object of study. In-person voting is most individuals' archetypal image of voting that all other voting perceptions are shaped around. Yet, in 2020 in-person voting – and the surrounding materialities and perceptions – were subjected to significant changes. To discuss the machines themselves, it is necessary to delineate between the types used in the 2020 election. Even though the catastrophic lever and/or punch card methods were not used in the 2020 election, that is not to say that the voting technology used was not without its benefits and drawbacks (Bushwick, 2020). The very nature of elections – i.e., that they only occur every 2, 4, and/or six years – creates a distinct possibility for machines, whether originally functioning or not, to become obsolete or outdated in that same time period. With the current rate of

technological invention and turnover, technologies become obsolete at a rate much faster than at any time in human history. Yet, voting machinery and election technology often remain treacherously outdated. For example, in the 2016 elections, it was noted that 43 states utilized voting technology that was ten years or older, while 14 states utilized voting machinery that was over 15 years old (Norden & Famighetti, 2016). As shown in the 2000 election, as well as elections preceding it, outdated technologies have the ability to negatively impact the perceptions and results of an election.

Of course, the age of something certainly does not determine its utility and/or effectiveness, it is important to note that there are broad implications for employing older forms of technology in environments in which new forms of technology have gained precedence within voting infrastructures. It may be useful at this point in the analysis to conceptualize voting technologies as a form of media and/or mediating actors in general. As discussed throughout the present work, voting technologies serve as a mediating agent between voters and the democracy in which they are emplaced. Importantly, new media are transformative in nature. As stated by McLuhan (1964), media are not merely additive to their environments; instead, media create an altogether new environment. In other words, new media forms ultimately change the environment and how the individual experiences it. However, most older forms of media do not simply disappear. Instead, we often see old media acquire new users and become connected to new media forms and environments (Ciel, 2011). In fact, calling media "old" or "new" is an element of public persuasion and rhetoric, as opposed to the actual characteristics and uses of the medium itself (Natale, 2016). The technology used to conduct a nationwide election in the United States was an important and poignant example of such a phenomenon in which old technology staunchly hangs on to its role within society and becomes engrained in the new

media environment as it comes into its present form. This presents difficulties for the conceptualizations, perceptions, and ultimately the effectiveness of both old, new, and mixed-media forms.

To be clear, the terms new media and old media are not static terms. At one point in human history, telegraphy would have been considered a new medium (Carey, 1988). At some point in human history, the internet might be considered old media. Of course, at the time of the 2020 election, the term new media primarily denoted digital and/or internet-oriented technologies (Logan, 2016). These forms of media are thought of as dynamic, interactive, immediate, participatory, uncensored, and have a reach much more expansive than traditional institutional media forms (Tugtekin & Koc, 2019). Old media would include television, radio, telegraphy, and books, each of which has its own corresponding characteristics and biases (Onuch et al., 2021). What is considered old and new media has fluctuated and will continue to fluctuate historically.

The 2020 election represented an election in which old media was injected into the new media sphere. For clarification, the use of paper ballots can be considered an old medium several times removed. That is, in the digital age, the use of paper and envelopes to cast a vote has begun the process of obsolescence that started upon the advent of electronic technologies. Yet, paper ballots stubbornly continued to hold on as not only a viable but the most desirable form of ballot across the United States. In fact – as will be discussed shortly – many of the "new" technology invested in leading up to the 2020 election was designed to continually reintegrate paper as an integral intermediary in the democratic process. The persistence of analog, physical – i.e., paper – media forms will be of recurring importance for both in-person voting and absentee/early voting.

The in-person voting experience brings to the forefront the notion of the human sensorium as it pertains to voters' experiences at the voting location. Historically used in both the sciences and the arts, the term sensorium can be traced to discuss the tactal conjunction between one's tangible interactions with their perceptions (Hawhee, 2015). In other words, the human sensorium arises at the intersection of the corporeal and sensory experiences of a phenomenon. For McLuhan (1964), new media introduce and alter new ratios between the five senses. The significance of the persistence of paper ballots lies in the context within which it exists: the primary digital world. With the advent of literacy, human imagination was released from the physical, but only symbolically and within the mind (Mir, 2016). Digital media have allowed for the creation of an all-encompassing reality that continually surrounds individuals, which has forced the sensorium to adapt, change, and potentially transcend perceptions of what is constituted as "natural."

Paper ballots, to some extent, can be one of the most natural media in that they are often primarily composed of timber products that quite literally sustain life on earth. However, in the digital world, they have been surpassed not only as the dominant medium – as they might have been seen during primary typographic times – but also as the most natural medium. Individuals spend the vast majority of their time surrounded by and interacting with electronic screens, communicating through digital networks, and engaging in electronically mediated interactions. The persistence of paper, while at once proving potentially beneficial and – by many accounts – preferential for election technology, simultaneously represents a medium that is not altogether as natural as it once might have appeared. To emphasize this point, we might consider the manuscript – i.e., the research report – which is being presently read. While I know sections of it have been printed out at least twice, it has otherwise never fully left exited the digital realm. The

research reports efficacy and tangibility are not equivalent. In a similar sense, the casting of votes on paper ballots cannot be equated to a "fool-proof" method of voting in the digital era. To be clear, this is not to point to potential errors in ballot design and/or the potential of mismarking ballots but instead to point to the ontological rift in the human sensorium between corporeality and perception. The sensorium has adapted to the digital era, and the persistence of paper technologies in the 2020 election poses an interesting ontological barrier to the ultimate efficacy of the media through which we vote.

Moreover, the persistence of paper technologies in the digital era illuminated the significant alterations that have occurred to the figure and ground of human consciousness. To McLuhan (1964), the figure is that which individuals see or are aware of, and the ground is that which the figure is situated within (Logan, 2011). In other words, the ground makes the figure possible and determines its form. For example, the television as a ground makes the sitcom as a figure possible.

In the same vein, the paper ballot and the infrastructure undergirding elections ultimately make the politician possible. But, the persistence of paper in the digital world alters this relationship. Though paper might have once been viewed as closer to the natural world and digital closer to a foreign experience, the ratios have been flipped. Using the city as an example, Aidra (2010) argued,

> Whereas cities and a human culture previously appeared as a figure on the ground of the natural world, television, satellites, and the internet now create a reversal of figure and ground. The form of the city is a hybrid, or composite, of living and non-living features on which we perceive the figure of the natural world…the metaphor of nature as the

figure on the ground of the city can lead to the recognition that natural environments have

in fact vanished (p. 44).

In engaging with hybrid analog and digital voting technologies, the voter is also thrust into

awareness of the hybridized nature of the natural and social worlds. With this experience,

individuals are forced to acknowledge and address the multifaced components, both human and

nonhuman, that interact across different levels in the election.

Importantly, and as noted prior, during the historical development of voting machinery,

there has not been a single company or machine types supplied and implemented across the

states – paper or otherwise. However, the United States Election Assistance Commission (EAC)

does have rules and regulations governing the machines that are allowed to be used in elections

("Testing and Certification Program Manual," 2015). Still, for both the layperson and the expert,

this manual is variegated, complex, and dense. Moreover, it is allowed to be interpreted broadly

based on the needs of the officials in a particular county. The diversity of voting machines used

to implement elections contributes to the misunderstanding surrounding them.

Then, from the onset, even categorizing what constitutes a voting machine is difficult.

New materialist inquiry, with its focus on social *production,* shows here that the seemingly

simple distinction between voting by mail and voting in person produces a different voting

experience. Moreover, the diversity of actual processes that individuals across the nation might

interact with during the voting process produces more differences in voting experiences.

Consequently, the different machines that are used by individuals during the voting process

produce different perceptions of the voting process as a part of the indeterminate whole.

To be clear, the possibility and presence of a socially produced experience, such as a

voter's experience in the 2020 US Presidential election, is not meant to – by the tenets of Barad's

Theory of Agential Realism (2007) – devolve into complete unknowability, subjectivity, and relativity. Barad is careful not to discredit the existence of objectivity. However, objectivity in an agential realist account of the world is not a static, pre-existing state meant to be captured. Per Barad (2007), "unfortunately, the reality is not a fixed essence. Reality is an ongoing dynamic of intra-activity" (p. 206). Therefore, to create an objective account of the phenomena being studied means being accountable for the marks made on human bodies by the larger material configuration. Materialization does indeed stabilize over time and produces boundaries, fixity, and determinate surfaces (Barad, 2007). Thus, the diversity of voting experiences does not enact a completely subjective experience of the efficacy of voting – and the efficacy of democracy by extension – but instead destabilizes the existing material configuration. The archetypal experience of voting described in the interlude above is not allowed to exist as the monolithic experience of democracy in the 2020 election. Moreover, looking backward, it might be argued that the monolithic voting experience might have never existed, yet the unique conditions of the 2020 election made these differences starkly apparent. As stated by Barad (2007),

> it is often only when things stop working that the apparatus is first noticed. When such (in)opportunities arise, the entangled nature of phenomena and the importance of agential cut and their corollary constitutive exclusions emerges (p. 158).

The unique circumstances of the 2020 election brought attention to previously undiscussed voting technologies. In essence, as the focus shifted from the candidates to the undergirding technologies that voters would ultimately use to invoke their opinion about the candidates, the public shifted their attention from the figure to the ground. Instead of merely focusing on results – while there was still plenty of "horse race style coverage that dominates air time during the final days of elections – there also was much more acute attention paid to the ground to the

extent that the ground became a focus. In this manner, the public received the "splash of water" McLuhan called for that forces them into awareness of the undergirding technical components that are entangled with both human and nonhuman elements in their enactment of the phenomena.

The diversity of machines utilized and modes of voting used in the 2020 election merit a unique ontological investigation as it pertains to their specific form. Instead of thinking of voting technologies as a neutral mediating agent between voters and ultimately the institution of democracy, it is more helpful to consider voting technologies as media that are material-discursive apparatuses. To Barad (2007), material refers to the physical realities, and discourse refers to "that which constrains and enables what can be said" (p. 146). Thus, voting technologies both have technical components that constrain how they can be used – which will be discussed at length in the preceding paragraphs – as well as the range of contingent and dynamic possibilities available for conceptualizing and discussing them – which will be discussed in a later section. The apparatus, in this case, the material and technological experience of voting, enact an agential cut which, according to Barad (2007),

> the apparatus specifies an agential cut that enacts a resolution (within the phenomenon) of the semantic, as well as the ontic, interdeterminacy. Hence, apparatuses are boundary-making processes…Meaning is…an ongoing performance of the world in its differential dance of intelligibility and unintelligibility (p. 148)

In other words, the apparatus has a tangible affect on experiential flows. That is, the apparatus itself produces differences that make a difference and serves as a dynamic reconfiguring of voting. With voting conditions understood as part of an apparatus used to enact democracy, the

understanding of voting in person is complicated in order to provide a deeper understanding of how voter's experiences during 2020 are perceived by self and other.

For in-person voting, we might first consider the act of getting to and from, as well as navigating the polling location while one is attempting to vote, as elements of the apparatus. Often overlooked, in-person voting can be confusing, stressful, and occasionally disorienting. It is a process that individuals may only undertake once every four years or less, depending on circumstances and/or political opinions. If the individual in question has moved recently, they may not even know where the location is, let alone how to navigate it.

Additionally, COVID-19 pandemic restrictions – which will be discussed at length in a later section – created new rules for individuals who wished to and/or had to vote in person during the 2020 election. Both State and federal bodies implemented rules, regulations, and recommendations for safe voting practices during the 2020 election. Such regulations included mandatory hand-sanitizing prior to entering poll places, mandatory face masks, and distancing of at least 6 feet in between voters ("Department of Health provides tips," 2020). These policies, while not comprehensively listed here, resulted in some existing and previously viable voting locations as unsuitable due to spatial concerns. Additionally, the mandatory social distancing and person limits slowed the process substantially, particularly in densely populated areas. Popular press reports frequently noted, both in writing and visually, the long lines that voters stood in – both inside and outside – in order to vote in the 2020 election. In 2020, the apparatus through which democracy is carried out was subject to substantial material pressures that elongated the voting process – nearly 1 in 5 persons waited over 30 minutes to vote – and injected new concerns for in-person voters ("The Voting Experience in 2020," 2020).

The following images, obtained from public access sources (Creative Commons and Images for Academic Publishing), help to provide a more striking visual of what such physical and material experiences of voting during the COVID-19 pandemic "looked" like:

Figure 1

Voters lined up around the block waiting to vote

Figure 2

Voters waiting in socially distanced lines to vote

Figure 3

Voters casting ballots

The above images show at least one version of the material realities for many voters. While it is important to note that these images may not universally represent the voting experiences of every in-person voter in the United States, they still highlight one of the unique difficulties of voting in person during the 2020 election. For instance, two of the photos show the different manners in which local election officials attempted to ensure social distancing requirements – which, at the time of the election, were suggested to be at least 6 feet in-between people. This process, while seemingly mundane, lengthened lines and lessened the number of voters that could present in voting locations which meant that many were waiting outside in November weather conditions.

An additional and/or consequential consideration that might be made is the time elapsed for voters making their way through the voting location. The images in the preceding section showed how the lengthening of physical space was accomplished. However, this also requires voters to have more free time available in order to vote in person. There are two important implications of the greater time commitment required to vote in person. First, during the 2020 election, there was massive pressure for everyone to vote, as it was considered integral to determining the direction the United States would take in the future (Aldrich et al., 2022). COVID-19 space and time constraints put disproportionately high corporal barriers to voting in person for low-income, poverty-impacted neighborhoods (Parker & Hutti, 2022). Specifically, individuals living in low-income, poverty-stricken areas had less access to materials and measures to prevent exposure to the COVID-19 virus. Second – though not necessarily unique to the 2020 election – long wait times simply might not be logistically feasible for individuals with multiple jobs. Thus, for individuals who were attempting to vote in person, the increased corporeal risk and time constraints may lead voters to rush once to the polls out of personal time

constraints or social pressure to be quick so others could cast their vote. Any time one rushes to complete something, there is an increased potential for error or incompletion. Thus, a stroll to the polls becomes a cast-and-run phenomenon.

Time and space considerations created by COVID-19 pandemic restrictions represent an ecological intervention affecting in-person voting technology as an apparatus. The COVID-19 virus can be seen as an intervening factor that breaks down territories between self and others. By assuming that one's breath might be toxic to another – or that another's breath might be toxic to oneself – the air itself becomes a nonhuman element intra-acting with the larger material configuration of voting. The dynamics of intra-activity are presupposed by the notion that it is non-linear, causal, and non-deterministic (Barad, 2007). From this perspective, COVID-19 becomes a generative factor in the formation of voting experiences across the United States during the 2020 election.

Moreover, these time and space considerations affect the human sensorium on the whole. Per Ong (1967), the sensorium can be conceptualized as "the entire sensory apparatus as an operational complex" (p. 6). Earlier, we spoke of external technologies – i.e., paper voting ballots in the digital world – and their effect on human's tactile and perceptual experience of the world and artifacts around them. Here, one might see the COVID-19 pandemic restrictions as an intensely internal experience. As evidenced by countless popular press articles and scholarly investigations, the veracity of the virus and the justifiability of the corresponding restrictions were intensely debated among individuals and groups alike. The "internal" or "subterranean" sensorium, per Cali (2020), does not focus so much on external receptors such as sight, smell, touch, or taste. Instead, interior sensorium relies on knowing through means other than natural

sensory. The invisibility of the COVID-19 virus contributed to the necessary reliance of individuals on stimuli outside of their external senses.

As an example, consider the existence of an individual persistently coughing at a voting location. This simple act might be met with fear and anxiety from some parties while met with indifference from others. Despite popular press and scholarly arguments that COVID-19 responses might be reduced to news exposure, media diet, and interpersonal interactions, an introduction of the internal sensorium might help us to provide a more complicated – complication deemed warranted within the outlined philosophical and analytic framework – a version of the knee-jerk reaction felt at voting locations in 2020. As offered by Cali (2020), "perhaps that interior dimension – the mind or soul – is most directly reached by those whose external senses don't block" (p. 59). While individuals seemingly unbothered by the pandemic might be considered desensitized by the conditions or brainwashed by their media diet, it might be more beneficial to consider the incorporeal nature of inner feelings towards the world. Grosz (2017), another prominent scholar in new materialism, argued that the incorporeal was the subsistence of the ideal in the material or corporeal. Combining the two ideas, perhaps to the chagrin of Cali, would push forward the inherence of ideality in all actions. In other words, one's conception of voting during the pandemic – and consequently their experiences at the voting locations – would have it's meaning oriented and derived from material relations insofar as they indicate incorporeal and/or immaterial conditions. Returning to the experience of a cough at the coting location, the individual is thus greeted by a material manifestation of an invisible virus wreaking tangible medical havoc on society, yet the individual is able to experience such a phenomenon differently through the incorporeal intra-acting agencies imbued both within the material conditions and buried deep in their subconscious feelings.

At this point, the analysis will shift gears and focus specifically on voting technologies that individuals actually cast their vote with. Upon navigating the physical voting location, the machines used for casting and counting ballots are an integral part of the overall voting experience and apparatus as well. Primarily, voters that voted in-person during the 2020 US Presidential election would have used optical scan voting methods that combine analog, electronic, and digital components. While public debates often focus on hand-counted versus internet voting, this emphasis misses entirely the bulk of voting machines actually used in elections. To be clear, most technologies are either direct record electronic (DRE) or optical scan (OS) technologies (Franklin & Myers, 2012). The Electronic Voting Classification Structure (EVCS) identifies four tiers in classifying the material components and structure of voting machines. The four tiers – to be outlined in the next paragraph – are included because, according to Franklin and Myers (2012),

> The classification structure is useful in a number of ways…a structure of this nature is necessary to develop and define a working language of electronic voting technologies…too often voters, election administrators, election technologists, and other concerned parties are not speaking the same language when discussing voting technology…through the…development of a classification structure, election officials can understand what characteristics different types of voting technology possess (p. 7)

The elongated quote above highlights the importance of delineating between different types of voting technology and associated characteristics. While Barad does emphasize that maximal knowledge of a system does not require total knowledge of all its parts, it is important to provide a base structuring for the conversation that must be had regarding the different types of voting technologies.

The four tiers are termed core technology, components, voter interface, and ballot

presentation (Macnamara et al., 2014). Each tier corresponds with a specific characteristic for a

more detailed classification of the components of the voting technology in question. First, core

technology refers to the primary purpose and includes vote capture and tabulation device, ballot

on-demand system, and electronic poll book. The vote capture and tabulation device is what

accepts voter input, records the input, and tabulates election results – which will be one of the

primary concerns of the present study. Ballot on Demand is a feature often added that allows the

production of clean ballots and electronic poll books to clarify the registration status of

individuals. Second, the component tier denotes where and how voter selections are stored. The

three subcategories under the components tier are Direct Record Electronic (with or without

VVPAT), Optical Scan (with precinct count or with central count), and ballot-marking device

(blank stock, pre-printed ballot, and non-ballot). Importantly, the components tier is less

concerned with whether or not the voter uses a touchscreen or paper ballot and more focused on

the method of *storing* the selections of the voter. Third, the interface tier refers to the method

through which voters make selections. There are six potential selection methods at the interface

tier that include multiple ballot feed, touchscreen, button, single-ballot feed, sip-and-puff, and

speech recognition. While it is not uncommon for components to have multiple interface

possibilities to cater to individuals who might have visual and/or hearing disabilities, the multiple

ballots and single ballot feeds are associated with optical scan components that are of central

interest to the present project. Fourth – and finally – there is the Presentation tier which deals

with how ballots are presented to voters. Essentially, the presentation tier is responsible for the

wording and placement of candidates' names, political positions, and descriptions of measures.

The different types of presentation include full-face ballot, scrolling ballot, scanned ballot image,

and audio ballot. Essentially, the presentation tier is responsible for the wording and placement of candidate's names, political positions, and descriptions of measures.

However, these categories are presented in the handbook as mutually exclusive categories, yet the ways in which they relate to each other are integral to understanding the specific voting technologies. When conceptualizing the in-person voting experience, the machine itself is an integral part of the overall equation. However, the categorization system described above is included to display the complexity of conceptualizing the eventual technology one might use to cast their vote. From the perspective of new materialism, each of these categories represents parts of the apparatus and the assemblage writ large. Moreover, each category intra-acts with the other. As discussed by Barad (2007), apparatuses "enact causal structure through which some components (the "effects") of the phenomenon there marked by other components (the "causes") in their differential articulation" (p. 149). Thus, each tier relates intimately to the other tiers.

The different tiers highlighted the interdeterminacy between parts within a larger system. The interdeterminacy principle, with roots in physics, refers to the notion that things do not have simultaneously determinant values. For example, the selection of a touchscreen interface has different exigencies at the component – i.e., storage – and presentation tiers than would allow the selection of a paper interface.

Putting all this information within the context of the 2020 election, we can consider core, component, interface, and presentation components as mutually constitutive of the overall phenomenon of voting in the 2020 election. Unfortunately, the diversity of voting machines utilized in the 2020 election makes this section of the analysis particularly difficult to communicate clearly and cogently. For clarity, it may be helpful to investigate two different

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types of common voting technologies that individuals may have approached in the 2020 election. Direct Record Electronic (DREs) and Optical scan technologies are very prevalent that may serve as exemplar technologies for understanding how the different tiers intra-act with each other while also injecting the important caveat that these two forms of voting are likely, not all-encompassing of the voting technologies that in-person voters would have seen in the 2020 presidential election.

Both optical scan and DRE technologies might be seen as forms of electronic and/or digital voting systems. However, the intra-action between their components and the interactions with the individual using the system to vote is different. For optical scan, the voter is likely – as was in my case highlighted in the previous interlude – to use analog technologies such as pen and paper and then "drops" this into a machine or hands it to a person with the expectation that it is counted by a machine. On the other hand, DREs might require the person to use a touch screen similar to the interface on a phone, tablet, or ATM and trust that their vote is recorded and counted correctly. While the core categorization remains the same, the interface, component, and ballot presentation are changed – i.e., the interface moves from pen and paper to a digital screen. Moreover, individuals may have strikingly different perceptions of the efficacy of the machines after the shift. In my interlude, I mentioned the finality with which I felt while dropping my ballot into the machine myself. However, had I simply stuck my ballot on a stack, that would have added another intervening element to be considered. Paradoxically, both optical scans and DREs create a greater "distance" between the ballot and its supposed direct intervention in the results of an election. Ultimately, when the components of voting technologies have varied, the interactions and perceptions of voters will follow in kind.

As outlined above, the in-person voting experience went through many shifts. The COVID-19 pandemic restrictions altered the physical manner in which individuals navigated the polling location itself. Moreover, a reconceptualization of the actual devices used by voters to indicate their vote highlighted the numerous intra-acting agencies of both human and nonhuman elements in producing the phenomena of voting in 2020.

Absentee/Mail-in Voting Technologies

Perhaps a unique aspect of the 2020 election was the mass usage of absentee ballots by the American populace. With 46 percent of the populace voting by absentee ballot, 2020 represented the highest absentee ballot count in recorded U.S. history (Rakich et al., 2021). As illuminated in the narrative above, absentee ballots may not be the most familiar of voting methods. Compared to in-person ballots, absentee ballots have several different technical characteristics that need to be identified.

It is important to note that technical aspects of the procurement, completion, and dissemination of absentee ballots are not singular in practice. Absentee ballots can be obtained in a number of different ways, however, a key characteristic is that absentee ballots must be sought out by the voter though different means than individuals figuring out how to vote in person. While the location of traditional in-person voting might be listed in a newspaper and stay at the same location for years on end, absentee ballots must be "requested" and, up until 2020, required that the voter had an acceptable reason for casting their vote by mail ("Absentee and early voting," 2020). Information on absentee ballots was most readily available through multiple local, regional, and national resources available online ("Request your absentee ballot," 2022). To request an absentee ballot one must fill out the Standard Form 76, "Federal Post Card

Application (FPCA) online or download the PDF, fill it out, print it, and mail it in. The standard

form 76 is displayed as follows on the website:

Figure 4

Absentee ballot request form (front side)

Figure 5

Absentee ballot request form (back side)

As shown above, the form includes basic demographic identifiers and personal information in order to ensure that the person voting is clearly identifiable. Once the form is filled out, whether electronically or printed and handwritten, it is processed by the voter's local election office. Once the form is processed an absentee ballot is mailed to the requesting citizen. The general election ballot will then be distributed to the voter. Figure 2 shows the format of the general election ballot below:

Figure 6

North Dakota general election ballot (front side).

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Figure 7

North Dakota general election ballot (back side)

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The above ballot is from a county in North Dakota, the home state of the principal

researcher. As has been continually reiterated throughout the present research project, ballot

designs across states and counties are not universal. However, this ballot does represent a

substantially adequate example of the base format built upon and implemented for most 50 states

("Official Sample Ballots," 2020). The ballot itself is identical to the ballots that would be filled

out in person in North Dakota.

However, the process of absentee voting introduces a new manner of filling out the

ballot. For traditional, in-person voters are largely expected to come to the location, take a short

period of time filling out the ballot and exit the polling location. Specifically, during 2020, in

which polling places experienced long lines and lagging times, taking additional time in the

location would be met with swift criticism and potentially suspicion. But, individuals engaging

in absentee or early voting are not constrained by time when filling out their ballot. As shown

above, presidential ballots include several other positions and issues to be voted on. While it is

recommended that voters do their best to fill out as much as they can, even the most politically

active individual may not have all the information available about candidates and issues that are

on the ballot. For individuals voting in person, time constraints do not allow for knowledge

limitations to be addressed; the voter must simply vote on that which they have substantial

knowledge to do so.

This is not necessarily the case for individuals who choose to vote via absentee ballots.

Assuming that ballots were requested with adequate time in between the mandatory deadline for

submission, the voter now has the ability to pause, reflect, and research all decisions and

measures on the ballot. This is important to note for several key reasons. First, and perhaps the

drabbest, is that voting machines have a greater propensity to having difficulties scanning

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partially completed ballots (West, 2020; "When issues arise with blank ballots," 2020). Second, the removal of time constraints afforded by early voting gave individuals time to contemplate their decisions over a longer period of time. While 2020 was considered one of the most polarized presidential elections in United States history, the undecided and/or intermittent voter – i.e., voter's who are on the fence about who to vote for and/or whether they intend to vote at all – remained one of the most important groups in determining the results of the election (Jurkowitz et al., 2020; "Who votes," 2006). While there is no empirical evidence to support the notion that individuals who filled out absentee ballots spent more time researching their candidates, it opens up the distinct possibility of such.

As it pertains to researching the candidates, this presents the absentee voter with a novel complication; the ability to continue their research with the ballot in hand. As previously discussed, the in-person voter in the 2020 election would have primarily been concerned with filling out their ballot quickly in order to limit their exposure to COVID, as well as to limit what was likely to have already been a delayed experience at the polls. Those individuals who were casting absentee ballots would not have been constrained by time. Thus, they now have different means through which they might research the candidates and measures on the ballot. Perhaps this allows them to view more television and/or newspaper coverage of the campaign. However, empirical research consistently shows that individuals received the bulk of their information about the 2020 election from online sources (Mitchel et al., 2021). Regardless, this novel complication launches the voter into the news environment mid-voting process – i.e., with the ballot in their hand – which was recorded to have been increasingly difficult to decipher – even among sources traditionally trusted by voters – in the 2020 election (Shearer, 2020).

Moreover, the mid-voting process research might lead the individual onto the internet, which presents another set of complications. While often not acknowledged, the act of "googling" for additional election information launches the individual into another complex, mediated infrastructure. The notion that search engines are neutral has quickly been tossed to the wayside in the 2020s. Not only is the information one receives predicated on the metadata previously collected on them, but the results that they eventually receive are also mediated by complex algorithms that reinforce socio-cultural stereotypes (Noble, 2018). Thus, it is important to note that I may have substituted another search engine earlier in this section, but this term is included to highlight the ubiquity of search engines and the neutrality we accord to them. This notion of search engines as neutral technologies is dangerous when considering the fact they may be used during the process of casting one's ballot. The voter is no longer alone in the booth with their ballot; they now fill out their ballot with the voices of the globe in their ears.

Upon completion of the ballot, as shown above, it then must again be mailed to the proper election official's location. After it has been received from the voter, the identity of the voter must be verified. The most common way that identities are verified for absentee/mail-in ballots is signature verification. That is, on the envelope that encloses the ballot itself, there is an affidavit that the voter must sign ("Table 14: How States Verify Voted Absentee/Mail Ballots," 2022). All 50 states require that a valid signature be present so that it can be compared with the signature on file – from their driver's license and/or registration application. Additionally, seven states have a witness requirement (only one state requires that the witness be a notary), in which another individual must watch the voter fill out the ballot and legally attest that the ballot represents the will of the individual in question. The third and final way of ensuring the validity of absentee/mail-in voting requirements is that of mandatory ballot collection and return laws. In

other words, states, to varying degrees, determine who may return the ballot. In most cases, this means that either the individual in question must return the ballot themselves or have a legal caregiver, household member, and/or other family members turn in or drop the ballot in the mail ("How do states protect and verify absentee/mail-in ballots," 2020). Each of these three processes is designed as a security measure to ensure that the ballot in question corresponds to the voting intentions of a single voter.

The technical characteristics of absentee voting technologies have several important characteristics that distinguish them from in-person voting. First, and perhaps the most significant, is the "spreading out" of agency across more bodies and technologies. In the 21st century, we often take for granted the archetypal experience of voting as a sacred and secret one-to-one experience in which a paper is marked indicating the voter's intention and "dropped" into the counting device. Absentee voting does not permit this line of thinking.

Instead, the technical characteristics of voting in 2020 resonated with the new materialist account of phenomena. Studies in media often assume static, unchanging characteristics of media. Similarly, research on ballot design and voting technologies investigate particular elements of design that are unchanged. However, the 2020 election showed the rhizomatic characteristics of voting technology as a medium designed to carry out democratic processes. Voting, whether in-person or via an absentee/early ballot, had different material characteristics and consequently different experiences for voters from different areas and even from voters in the same areas.

It is for this reason – the disparate, rhizomatic experiences of the voting process – that absentee ballots, along with internet voting in general, have been maligned for their uneven effect on poor communities – often disproportionately populated by minorities with limited

internet access (Prevost & Schaffner, 2008). Even though it was reported in 2020 that 93% of United States residents have internet access, there still remains some who do not, which further builds upon the non-universality of the voting experience in 2020.

B. Material Elements

Now that the technical characteristics and their biases have been identified, it is necessary to identify the other elements of the phenomena assemblage. While the analysis up until this point provided assessed the physical characteristics of media and their consequences, it also pushed forward a view of technologies as crystalized components of a fixed state. However, new materialism pushes – Per Fox and Alldred (2020) – the view of the world as *emergent* via a series of interactive and productive events/assemblages rather than founded upon stable structures or systems. Thus, the analysis of media characteristics will not be viewed as a foundation but instead will be emplaced within the larger context of the materialities of the phenomena. Through this process, the fluidity of media characteristics and voter experience will be illuminated.

As a starting point for analysis from this perspective, the location of the components (or elements) of the phenomena assemblage requires us to critically assess both materialities of human and non-human elements at play. Importantly, we must remember Lupton's (2017) qualifier that this project is not to make a universal claim but instead to shed extensive light on certain elements of the phenomena. We have already identified different voting technologies as media used to carry out the mandates of democracy. But, these voting technologies and their characteristics and biases do not exist in isolation. Instead, they interact and intra-act with other human and nonhuman elements in the process.

Novel Considerations of the Voting Environment in 2020

As outlined above, there were several means available to voters in the 2020 US presidential election. This involves looking at both the voting technologies themselves and the infrastructure sustaining the entire endeavor. In the previous section, the technical characteristics and corresponding biases were identified. These technical characteristics, however, do not exist in a vacuum. Instead, there are a number of interrelated phenomena and agencies interacting.

First, the infrastructure in which traditional and absentee ballots were emplaced as a medium to carry out the election in 2020 had exigencies and deficiencies unique to the particular year. One of the primary deficiencies was largely a logistical one. That is, the COVID-19 pandemic restrictions and advisement of the Center for Disease Control (CDC) led to more people staying at home, which led to an exponential increase in the number of goods and services ordered through online avenues (Tymkiw, 2022). To emphasize this point, one might look to the restrictions on shipping essential only items that were implemented earlier in the pandemic (Matsakis, 2020). While popular press discussions initially covered this deficiency as an inconvenience and focused on humor relating to toilet paper and alcohol, the consequences would prove important to our understanding of the 2020 election.

Specifically, the exponential increase in absentee voting increased the strain on an already overloaded postal system (Corsaniti & Montague, 2020; Cox et al., 2020). In practice, one of the simpler technological systems (i.e., analog) of carrying information from one place to another was not adequately prepared and/or positioned to transport the increased volume of mail. Even though the primary carrier for post – i.e., the United States Postal Service – reported delivery rates, there was still a substantial public outcry concerned about the speed and accuracy of the transmission and counting of ballots. Specifically, a 2021 report reviewing shipping times

for ballots found despite a 114% increase in volume from the 2016 election, that 99.89% of ballots were delivered to election officials within a week, with an average delivery time of 1.6 days between the time of voters sending their vote and election officials receiving the ballot ("Updated Post-Election Analysis," 2021).

Of course, to only focus on the logistical issues created by COVID-19 pandemic restrictions would be to miss the most significant ecological consideration of the pandemic: the health ramifications. As voters prepared to head to the polls, they were tasked with navigating an environment in which the air they were to breathe had the potential to lead to their death. Here, it is important to note a twofold consideration as it pertains to health. From a new materialist perspective, it is insufficient to merely conceptualize COVID-19 as a potentially fatal virus. Instead, both the public perceptions of COVID-19 must be considered, as well as the different ways in which the disease is enacted by individuals.

First, COVID-19 must be understood through the lens of different public perceptions because the different manners and modes in which COVID might be conceptualized alter the affective flows between different components of the voting experience. Fullagar and Pavlidis (2021) called COVID-19 a "disruptive biocultural force" (p. 152). During the 2020 election, the spread of COVID-19 – and the corresponding movement restrictions – were met with varying levels of concern (Deane et al., 2021; Nelson et al., 2020). Depending on an individual's diet of news sources, physical conditions, and location, they may be more or less concerned about being in public to cast their vote. Thus, the process of knowing and understanding the disease is spread widely across many different humans and nonhuman components (Mol, 2010). When deciding whether to head to the polls or vote via absentee, the individual is affected by numerous components, each with competing agencies.

Second, it is also important to note that diseases are enacted through a variety of forces that has the potential of leading to a differing experience and enactment of what might biologically be the same disease. Per Mol (2010), "disease to be treated is a composite object" (p. 71). In other words, diseases are not exhaustively described or understood as a list of symptoms within the body. Once the disease has been made visible – i.e. not a peculiarity is hidden under the skin – it can no longer be considered singular (Mol, 2010). For many, the most visible enactment of COVID-19 was coughing. Thus, an individual hearing someone coughing at the polls might immediately perceive danger. Conversely, the individual wishing to vote in person who has a cough – even if they tested negative – might not feel comfortable voting in-person for fear that it will be perceived that they are contaminating the area and contributing to the spread of the virus.

Another front-facing material component of the phenomena assemblage would be the actual practices that were implemented in order to quell concerns about the contraction of COVID-19 while at the polls. Specifically, mask-wearing comes to the forefront. During the entirety of the pandemic, whether or not to wear a mask was a significant controversy that contributed to the polarity of experience of the environment (Deane et. al, 2021). Throughout the pandemic there were no universal mask mandates imposed for mask-wearing at the polls in the same manner across states (Izaguirre, 2021). Consequently, whether or not a voter wore a mask at the polls was not universal to all citizens voting in the 2020 US presidential election.

Conceptualized in new materialist terms, masks were implemented as a practice meant to mark a boundary between humans and the pervasive non-human virus. The different types of masks create different affect flows between individuals that ultimately mediate their experiences voting. By the time the election rolled around, mask-wearing practices had been largely agreed

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upon amongst governing bodies. Primarily, it was deemed integral that masks fit snuggly over the nose, mouth, and chin in order to minimize "gaps" through which the virus might slip through and contaminate the surrounding area ("Types of masks and respirators," 2022). Medical masks such as N95s and N65s were considered the most protective of self and others ("What we know about quarantine," 2022). However, for many individuals, these masks were unattainable. Thus,

While the above distinction between mask types may seem to be a mundane and/or trivial consideration as it pertains to an individual's experience of voting technologies, it is important not to overlook the perceived efficacy of mask types. When thinking about science in general, it is important to understand that nothing is devoid of meaning, and paradigms of thought are created to designate correctness (Kuhn, 1962). Mask types served as indicators of one's relations with their environment and others within it. A specialized filtering mask, such as an N95 that is typically worn by medical professionals, will interact with present affective flows in a different manner than an ill-fitting bandana.

Specifically, different types of masks, as listed above, use space to mark the territory between self and others. The idea of "gap" minimization in mask-wearing practices highlights this distinction. Masks with more gaps – such as poorly made cloth masks and/or incorrectly worn masks in which an individual's nose or mouth is partially or fully exposed – have significant effects on voting locations. Barad (2007) noted how exclusion plays as much a role in the enactment of phenomena as does inclusion. Masks were an attempt to exclude the virus from affecting the voting experience. Mask "gaps" would then open up – or at very minimum, muddle the lines between – the borders drawn by the masks allowing for the virus to exert agency on voters' perceptions and experiences at the polls.

C. Discursive and Propagandic Elements

In addition to the pandemic restrictions and considerations, it is also important to acknowledge the discourses surrounding the event and contributing to its meaning. According to Barad (2007), what is said – i.e., discourse – does not simply come out of our own heads. Instead, Barad (2007) challenged the reader to consider that

> Statements are not mere utterances of the originating consciousness of a unified subject; statements and subjects emerge from a field of possibilities. This field of possibilities is not static or singular but rather is a dynamic and contingent multiplicity (p. 147)

Therefore, what is said about voting technologies in the 2020 US presidential election is not to be taken as unimportant. What was said about the technologies constrains how individuals were able to conceptualize voting technologies and, by extension, the efficacy of media in carrying out democratic functions.

During the 2020 US presidential election, there were numerous claims of voter fraud throughout the final months of the campaign. Of all the different claims made, certain discourses about the casting and counting of votes – for in-person and for absentee/early voting – grabbed large amounts of air time and column inches. In the section to follow, we will discuss the claims made about fraud that centered on in-person voting machines and methods and claims made about fraud during absentee/early voting machinations and methods.

Deleting the Vote: Election Technology Companies and Claims of Voter Fraud. Importantly, there was more money spent on new voting technology leading up to the 2020 election than in any year since the 2000 presidential election (Fessler & Kaufman, 2019). This massive amount of spending shined a light on election companies that are usually left in the background.

Similar to other technology industries, such as cellular devices, there are only a few large companies that control the majority of the electioneering technology industry. The three companies are Election Systems & Software (ES&S), Dominion Voting Systems, and Hart InterCivic. Altogether, these companies control more than 80% of the election technology industry (Andrzejewski, 2020; Popken, 2020). These companies secured hundreds of millions of dollars from state entities for the sale and maintenance of election technology – software and firmware – leading up to the 2020 election. Similar to the punch-card debacle in 2000, the Russian interference with the 2016 election caused many states to spend healthily on election technologies. This was considered a necessary expenditure due to the fact that in the 2018 elections 41 states utilized voting technologies that were at least ten years old ("Voting Machines & Infrastructure," 2022). However, the activities and processes required for such a monumental overhaul open up the possibilities for nefarious and/or actions of questionable integrity.

Largely under the veil of necessity, election technology companies and state officials have a relationship that is intertwined and often only tangentially related to the creation, sale, and dissemination of voting technologies. For instance, ES & S previously had an advisory board of 15 state election officials whose stated purpose was to aid in the development and direction of voting technologies that would be used in elections. To accomplish such, ES & S paid for the expenses of officials to meet in Las Vegas twice a year (Fessler & Kauffman, 2019). Additionally, there is often a revolving door between elected officials and employment with voting technology companies. While it is important to invest in election technologies, lest we forget 2000, it is also important to recognize the potential for overlap and/or conflict of interests between the officials responsible for creating fair and safe elections and the companies selling the means to make such an event occur.

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During the 2020 election, Dominion Voting systems was the company that gained the most public attention due to claims that votes were being deleted by the computer systems (Satija, 2020). Specifically, Donald Trump tweeted out that Dominion Voting Systems "DELETED 2.7 MILLION TRUMP VOTES NATIONWIDE" (Sanchez, 2020). Other claims linked Dominion voting systems to Venezuela and that the software was written in a manner that it had the ability to automatically flip votes cast (Swenson, 2020). Such claims were echoed by other sitting politicians and political actors. Lawsuits were filed in multiple states to investigate the veracity of the claims made. Ultimately, these claims were investigated by the U.S. Department of Homeland Security's Cybersecurity & Infrastructure Security Agency and found no evidence that any votes were deleted or flipped, either algorithmically or manually ("Setting the Record Straight," 2022). However, voters were still exposed to – some being more swayed than others into different levels of belief of the claims – messaging that would ultimately impact their voting perceptions and experiences.

Ballots Burning: Absentee Ballots and Human Intervention with Remote Voting. In addition to claims that companies and their voting technologies were designed to privilege the election of a particular candidate, there were also widespread claims that the humans responsible for carrying out the necessary processes for absentee ballots were interfering with the process. There were several tropes that took root during the 2020 election, including the claims that the USPS workers tasked with delivering absentee ballots to the proper avenues for recording were indeed not doing so. Additionally, there were reports of ballots being burned by both election officials and other political actors affiliated with a particular political party. In the pages to come, we will review the discourses that surrounded the use of absentee ballots in the US presidential election.

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Altogether, the discourses surrounding affected the real and perceived efficacy of absentee voting processes and possibilities. Specifically, the claims of voter fraud served to alter the electoral apparatus. Apparatuses are not simply the composite of their technical characteristics, but instead also include the discourses surrounding them (Barad, 2007). To know something and/or to know about something is a distributed practice that is part of the larger material arrangement. The interaction with the voting apparatus is not just affected by our use of the paper ballot or scanner, but instead also informed by what is being said about the technology at hand (Barad, 2007). To be clear, the experience of the voter, as discussed in previous sections, plays a significant role in the voter's experience and perceptions of voting technology. However, what is being said about the technologies themselves in the popular press and other interactions plays a significant role in the efficacy of the technology.

Primarily, the claims of voter fraud inherent in the absentee voting system arose from the same political actors that made claims about electronic voting technologies. Primarily, claims of the potentiality of voter fraud were expounded upon by the republican party, while simultaneously, the democratic party attempted to expand mail-in voting efforts (Weiser et. al, 2020). Then sitting President Donald Trump claimed that voting by mail was "dangerous", "unconstitutional", and "a scam" (Qiu, 2021; Ulmer & Layne, 2022). At another event Trump stated "Mail ballots, they cheat, OK. People cheat. Mail ballots … are fraudulent, in many cases" (Taddonio, 2020). While there were various instances of actual voter fraud in which individuals cast ballots in the name of deceased individuals, fact-checking organizations and lawsuits filed ultimately did not find any substantial evidence for the claims made (Dale, 2020; Friel & Wilder, 2022).

It is integral here to note that Trump was attacking mail-in voting, which is slightly

different than absentee voting. All states have some form of an absentee voting system. This

system is designed to allow registered voters who are not able to visit their polling place –

military members, individuals with a physical disability, people with shift/work conflicts,

incarcerated people still eligible to vote, caregivers – but still wish to cast their vote ("Absentee

Ballot Rules," 2020). The absentee process, which varies greatly by state, requires the individual

to request the ballot and, in some cases, requires that the individual have a valid reason for

requesting an absentee ballot though it should be noted that these rules for excuses were greatly

relaxed during the 2020 election ("Changes to absentee/mail-in ballot procedures," 2020). Mail-

in voting, which was already in place in 5 states, refers to the sending of a ballot without request

– i.e. registered voters automatically receive a ballot sent to their residence without any request

and/or valid excuse. Again, this is a process that varies from state to state. However, at least five

states had robust mail-in voting systems in place prior to the 2020 election ("Vote.org," 2022).

Additionally, it should be noted that the two types of voting are processed and counted in the

exact same manner. Moreover, they are considered legally interchangeable terms ("Are absentee

votes and mail-in votes different," 2020). A key element of the discourse here is the automaticity

of the distinction between absentee and mail-in voting. Many of the claims centered on the fact

that people who were not registered to vote and/or not even citizens circulated widely

(Pennycock & Rand, 2020). This discursive choice promogulated the idea that ballots would be

concertedly sent to certain peoples in order to cull the vote in favor of one side (Cassidy, 2021).

In this form of the claim, the democrats would almost be "calling on" or encouraging people to

commit voter fraud in the name of their political cause. However, it has been documented that

Trump, who was the most vocal agitator of mail-in voter fraud, has voted by mail in several

presidential elections (Sherman, 2022). Thus, we have a political actor attack a system they are somewhat familiar with and have used multiple times before.

The propaganda that was circulated about voter fraud in the mail-in voting system served to denigrate the system tasked with carrying out the 2020 election. The discursive elements of the apparatus as a material-discursive enactment illuminated the extent to which the material elements are productive parts of the phenomena at hand. Claims about ballots being deleted, burned, discarded, and/or being inherently flawed stoked a version of reality in which both analog and electronic digital apparatuses were not adequate vehicles for the 2020 presidential election. As argued by Barad (2007), "reality is not a fixed essence…reality is an ongoing dynamic of intra-activity" (p. 206). By continually attacking the apparatus used to enact the political opinion of citizens, anxiety and uncertainty were injected into voting systems. The apparatus, though the material components remained unchanged, was understood differently as a consequence of public discourse and propaganda.

Notably, the apparatus is responsible for measurement of the phenomena at hand. In the case of the 2020 election, the questioning of the apparatus promoted questioning of the measurement itself. That is, claims of voter fraud made the apparatus appear as though it was incapable of accurate measurement. The measurement apparatus is the essentially the condition of the possibility of determinate meaning for the concept in question (Barad, 2007). Even with strong evidence to the contrary, claims of voter fraud intra-acts with material experiences of voting. The representational notion of voting as casting a ballot, the ballot is counted, and political opinion being exerted on the democratic structure was discursively interrupted. In other words, representationalism, as a concept that words represent pre-existing things, is not viable. As evidenced by the widespread belief and/or concern that voter fraud was indeed occurring, the

act of voting is not an act that supersedes or exists outside of discourse. Instead, we see voting performed with a new understanding of the practice and the apparatus itself.

The Research Assemblage (X, Y, Z, and so on)

It is important here to document the research apparatus utilized to produce the above content and, ultimately, the document/record of the phenomena. Per Fox and Alldred (2013),

> a research methodology may be seen as a specific arrangement of machines, designed to shape how affect flows between its constituent relations, and what capacities these flows produce. The relations in a research-assemblage include the events to be researched, research tools such as questionnaires, interview schedules or other apparatus; recording and analysis technologies, computer software and hardware; theoretical frameworks and hypotheses; research literatures and findings from earlier studies; and, of course, researchers. To this are added contextual elements such as the physical spaces and establishments where research takes place; the frameworks, philosophies, cultures and traditions that surround scientific inquiry; ethical principles and ethics committees; the paraphernalia of academic research outputs: libraries, journals, editors and reviews, and readers. Precisely how event, instruments and researchers interact depends upon the intentional affective interactions defined by the machines used, in other words, the techniques and methodological strategies adopted (p. 404).

The above lengthy passage pushes for an understanding of research that is not conducted in a vacuum – i.e. that the phenomena in question do not exist outside of the researchers studying it. While such methodology might be primarily associated with new materialists, Neil Bohr argued in the 1930s and 1940s that the entire experimental arrangement must be attached to the entire

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phenomenon. Therefore, the following section will attempt to account for the experimental apparatus that has been attached to the phenomena.

Thus, in conceptualizing the above analysis, it becomes integral to interrogate the components of the research assemblage used to analyze the relations of the phenomena assemblage while simultaneously both are parts of the larger assemblage at hand. The hybridization of researcher and phenomena has the distinct possibility of devolving into mere description, in which the research assemblage has little affect in its own right and, conversely, the research assemblage are significantly aggregative with the effect of distorting the phenomena by imposing theoretical and methodological territories that distort and obfuscate the phenomena at hand (Fox & Alldred, 2013). Continual reflexivity of the research assemblage aids in mitigating the constant tension between the phenomena assemblage and the research assemblage, avoiding these two extremes. Thus, the following section will revisit the research design, data collection, data analysis, and the research report.

First, the present research project – contrary to scientific and social scientific research – aimed to adhere to a materialist ontology in research design. I, as the principal researcher, sought to follow Fox and Alldred (2013)'s suggestions that such research should attend to both human and non-human elements and the micro, meso, and macro elements together as they territorialize and de-territorialize differing affect economies. This was evident through the visitation of technical characteristics of voting media. The voting experience was not analyzed as an event in which humans *used* a particular medium to enact their democratic opinion. Instead, the technical characteristics were analyzed on their own accord. This might primarily constitute the micro elements of the phenomena. Additionally, the material elements and configurations were also taken into account in what might be primarily considered the macro considerations of the

phenomena. Finally, the discursive elements were taken into account, which might be considered primarily the meso components stretching across both individual and collective inter and intra-actions. However, each of these sections was designed to have considerable overlap. For example, the in-person and absentee voting experiences did not only deal with micro but were also affected and were affected by both macro and meso elements. Ultimately, the design of data identification did not limit itself to any element as mutually exclusive.

Second, data collection in new materialist research must identify assemblages of human/nonhuman across micro and macro levels, explore how elements within the assemblage are or are not affected, and identify territorializations and deterritorializations (Fox & Alldred, 2013). In other words, the goal of data collection in new materialist research is to attend to elements often not subject to investigation due to design biases in order to explore how each element has its own affect economies that create and sustain the territorialization and de-territorialization of aggregated and singular flows within assemblages. Thus, the collection of data was not limited to any single realm and/or discipline. Instead, academic research was pulled from medical, communication, philosophy, physics, computer science, political science, geography, and many more disciplines. Similarly, popular press articles came from sources across all biases. Additionally, personal experience and reflection were included as important indicators of personal biases that may be informing the collection of data. Altogether, the collection of data sought to be far-reaching.

Third, data analysis for new materialist inquiry requires the researcher to make the assemblage the main focus of the analysis, explore affect economies within assemblages, link matter and meaning through affective flows, and acknowledge the relations within the research-assemblage as a whole (Fox & Alldred, 2013). Data analysis must take assemblages as the

primary unit of analysis by incorporating human and nonhuman elements with a particular

emphasis on paying attention to any and all measurement and analyses and/or techniques. In new

materialist inquiry, analysis is quite laborious. The analysis process not only includes analysis of

the phenomena at hand but also requires that the affect economies of analysis tools are taken into

account. The analysis, by design, sought to continually visit and revisit the overlapping agencies

between the micro, macro, and meso affect flows in the phenomena assemblage. By working

back and forth levels, the analysis painted a unique version of the phenomena of voting in the

2020 presidential election.

Fourth, data reporting must not be seen as an output directly created by tools of design,

collection, and analysis. Instead, the report itself – i.e., the document that you are reading right

now – is also a part of the hybrid assemblage created by intervention with the phenomena

assemblage. That is, the research report has its own affect economy deriving from both the event

and the machines of social inquiry. It is important to note that new materialists are not making

the claims of social constructivists in which there can be no objective claims made by the

researchers. In a less pessimistic and/or universalizing manner, new materialism seeks to

acknowledge the different manner in which researching a phenomenon enacts the phenomena in

importantly different ways. This document not only represents the phenomena at hand but also

includes my own intellectual biases and cognitive abilities.

Altogether, it is viewed by the principal researcher that the research assemblage adhered

to new materialist methodologies and ontologies. The inclusion of select concepts in media

ecology may be interpreted as indicative of my own intellectual biases. However, it served to add

an additional layer of depth and analytic language to the report, while also further situating the

analysis within communication studies. In sum, the research apparatus was not without biases for the purpose of achieving the end result, which will be discussed in the following section.

The Sum: R/E = [(A*B*C) * (X*Y*Z)]

Now that the phenomena assemblage and research assemblage have been identified and analyzed, it is important to bring together all elements. To recap, the present report discussed technical, material, and discursive components of voting technologies and voters' experience during the 2020 US presidential election. The different manner in which individuals voted, coupled with a litany of individual and collective intra-acting agencies, created a unique ontological experience of the 2020 election that is unable to be universalized across the populace. The following section seeks to tie the phenomena assemblage and research assemblage together.

Ultimately, we are left with a question of what might be considered an objective experience for voters in the 2020 US presidential election. This project started out with a brief interlude of my own voting experience: my choices, my thoughts, my actions, and the different factors that affected each. Ontologically, the differing reports of voters' experience and voting technologies in the 2020 US presidential election are more intelligible when a version of objectivity as outlined by Barad and co-opted by new materialists is adopted. For Barad (2007), objectivity is not a world that is pre-linguistic or free of the symbolic and technological systems foisted upon it. Instead, objectivity refers to something that is reproducible and unambiguously communicable. Thus, concepts still obtain their meaning from their relation to a physical apparatus. Objectivity still requires accountability for the making and effecting of permanent marks on bodies and phenomena. Phenomena do not exist as mutually exclusive physical

objects. Thus, the efficacy of democratic functions is intertwined with voting technologies, the user's experience of them, and the discourses surrounding them.

Barad's concept of objectivity may seem contradictory and controversial yet forms of it were conceptualized thousands of years earlier. In *Metaphysics* – believed to be written around 350 B.C. – Aristotle laid out a theory of the four causes: the material, the formal, the efficient, and the final. As previously discussed in the literature review, the material cause refers to the raw materials used, the efficient refers to the primary/direct source of change, the final refers to the reasons or sake for which things are done, and the formal refers to the pattern that the thing takes (Strate, 2018). If we take a shoe, the leather is the material cause, the explanation of the production of the shoe is the formal, the direct manufacturing and/or making of the shoe is the efficient cause, and the shoe, when finished, is the final cause. Western society, and the assumptions of Newtonian physics upon which it rests, are informed by an efficient cause. From a young age, schooling teaches students that agent A causes effect B. However, this can be seen as untenable for explaining complex interactions – such as voting technologies and the efficacy of democracy – in the digital era. Whether a person votes in person or by mail has an effect on the voting experience, but it is not the *only* effect.

In addition to Barad's (2007) conceptualization of objectivity and theory of agential realism, the present study has also included select concepts from media ecology. However, it is important to note here that forms of causality implemented in media ecology – such as formal cause – also do not fully capture the entire phenomena. Scholars in media ecology have pushed, as previously discussed, for the implementation of formal cause as a remedy for this fixation on efficient causality. The formal cause is the blending of all four causes at once, considering the material, the final, and the efficient in concert as opposed to separating them into mutually

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exclusive categories. For many media ecologists – most notably those following in the intellectual footsteps of McLuhan – formal cause offered a way out of the media effects paradigm in communication and media research. However, the formal cause remains insufficient for entirely encapsulating the phenomena at hand. Despite the usefulness of conceptualizations of media as extensions of humans and the human sensorium, the present research finds formal cause still not having gone far enough in the digital era. The digital era also immaterializes what might otherwise be material processes. As argued by Sutherland (2015), "we must accept that the causality of mediation exceeds the formal characteristics outlined by McLuhan, and move toward a far more attentive approach to the question of hardware (that is, material cause) and its effects" (p. 268). Thus, the present project pushed past classical conceptions of causation to present the 2020 election in greater depth and nuance.

While Barad is certainly not adhering to Aristotelian material cause, she does push us into a more complicated and thorough understanding of phenomena. Causal considerations are important insofar as accounting for what are the real associations and affective relations between human and non-human components of voting assemblage. However, it is equally important to note that the goal of the present research endeavor is not to establish causal linkages between components. By tracing the environmental, infrastructural, and specific conditions of human and non-human elements of voters and voting technology in the 2020 election, a partial picture and a range of possibilities are purported. As stated by Postman (1985)

> We are all, as Huxley says someplace, Great Abbreviators, meaning that none of us has the wit to know the whole truth, the time to tell it if we believed we did, or an audience so gullible to accept it (p. xx).

In this view, causal statements become grand abbreviations of scientific studies – and consequently phenomena themselves – that take years, decades, and centuries to amass. They are not literal statements; they are themselves phenomena that scores of individuals have dedicated their lives to investigating. The main point that is being driven here is that it was not the propaganda that caused individuals to think and feel a certain way while choosing to vote in person or via mail-in/absentee. It was also not the environmental components and materiality of technologies that solely affected the perceptions and experiences of individuals while voting during the election. Together these components, in coordination with the individual and the mass, simultaneously enact the phenomena.

The affect flows between voting technologies (non-human) and voters (human) produced and connected the entities and their inherent agencies. Each component – and the research design that considered the component in the first place – produced new capacities for knowledge production and understanding of the experiences of voters in the 2020 US presidential election. For instance, in the case of absentee voting, the additional time and the particular location opened up the possibilities of interacting with the worldwide-web to research unknown candidates and ballot measures. While individuals were voting in this manner, other voters were moving through the polls as quickly as possible to minimize exposure to an international pandemic. Each situation with its unique exigencies altered the phenome writ large.

The intra-acting agencies between the material and discursive elements played a central role in territorializing – and de-territorializing – people, places, and ideas during the 2020 US presidential election. Intra-action signifies the mutual constitution of entangled agencies. In this view, agency is not something someone does or possesses – i.e., agency is not equated to human intentionality or subjectivity. Per Andersson et al. (2020),

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territorialization refers to affects that establish capacities to produce specific qualities,

and hence clearly set out and shape their capacities to affect other bodies in the

assemblage (p. 1).

In other words, the phenomena as we understand them – and the matter that constitutes them –

are, to be clear, not static, but as they materialize over time, become stable enough that they

provide boundaries, fixity, and surfaces.

The affective flows mediating the relationship between voter and democratic systems in

the 2020 US election drew and re-drew boundaries to an extensive degree that could be argued

has not been experienced in contemporary history. Importantly, the COVID-19 virus threatened

established boundaries between self and environment. The virus's invasion of bodies established

people's capacities to cast their votes. However, this invasion was perceived differently by

individuals. Moreover, the regulation protecting individuals from this invasion varied by

location. For some, the casting of an in-person vote could have been viewed as untenable or

impossible due to a litany of health and ethical concerns. Conversely, the absentee/mail-in votes

produced the distinct possibility that voting systems and voters were being manipulated in order

to affect the ultimate outcome of the election. Altogether, there is an opening up of the borders

between voters and the technology used to cast their votes. The de-stabilization of the archetypal

voting experience allowed for the election – and perceptions of the election – to be cast in many

different lights.

When reviewing the above components of the analysis thus far, it becomes clear while

putting together the sum of the assemblages that voting in the digital era does not permit the

existence of a singular, objective voting experience. In 2020, this can be in large part attributed

to the apparatuses, affective flows between components, and the territorializations and de-

territorializations of phenomena that are outlined above. The differing voting technologies – both

in-person and via mail-in/absentee voting – do not create a reproducible voting experience, and

to some extent, the differences in experiences are not readily communicable. The brief interlude

introduced at the beginning and its areas of resonance and dissonance with the voting

experiences laid out in the latter portions of the analysis revealed that voting experiences were an

intensely personal experience in which a litany of intra-acting agencies determined one's

material and perceptual experiences with both similar and different voting technologies.

CHAPTER 5: CONCLUSION

Since the conclusion of the 2020 US presidential election, the contest has been continually revisited by communication scholars as an instance in which the fate of democracy was at an important crossroads. The 2020 US presidential election has been studied extensively from many different approaches to the effect of many different conclusions. The present project sought to add a new materialist perspective to the body of literature surrounding the 2020 US presidential election. Such a perspective guided the research endeavor toward the voting technologies used to mediate the relationship between voter and their democracy.

Above the history of voting technology and democracy showing that throughout history voting technologies have been a constant tug and pull between antiquation and adaptation. In the literature review, the history of voting was sketched, illuminating critical junctures in US history when the methods of voting were inadequate in either accurately recording and counting votes and/or engendering the perception of an effective voting system. From advert-styled ballots of the 1888 election to the hanging-Chad debacle in the 2000 election, there have been instances in the history of the United States in which voting technologies have shown themselves to be entirely inadequate at carrying out the task with which they were designed.

The above analysis sought to show that the 2020 election was another instance in which the technologies used to carry out the election were problematic for carrying out the 2020 election. However, the potential reasons for the issues that arose surrounding the 2020 election have less to do with the blatant and – up until that point – acceptable propagandic ballots of the 1888 election or the clear inaccuracies of the recording systems used in the 2000 election. Instead, a retrospective analysis of the 2020 election reveals an electoral system that largely functioned well – i.e., meaning that the ballots of voters were cast and counted accurately. Yet,

there were still massive outcries of election fraud, tampering, and inadequacies in voting

technology. Thus, an investigation solely of the voting technologies becomes unsubstantial for

understanding the 2020 election. To that end, the above analysis sought to outline not just the

specific technologies in question but also to consider the variegated experiences of voters and the

context within which the voting process took place.

To accomplish such task, a new materialist framework was employed for analysis. This

framework posited an ontological collapse between the human and nonhuman and created a

position in which all elements mutually enact the phenomena at hand instead of one force merely

exerting force upon another. Adopting this position, allowed the research to be split into

technical components, material components, and discursive components.

In the first section, the technical components were sketched in general. Voting

technologies were established as a medium through which voters enact their democratic opinion

on the system in which they are emplaced. In 2020, there was a massive and unprecedented shift

to mail-in voting for almost half of the population. This was considered one of the most

interesting and unique features of the 2020 election. Therefore, the technical components were

consequently split into in-person voting and mail-in/absentee voting. While a traditional analysis

might simply look at the particular technologies used in each of these forms above voting, the

new materialist analysis looked at the total experience of the technologies or each voter.

The second section of the analysis considered moved past the voter's experience of at the

polls – whether in person or from home – and looked into the material elements constraining and

enabling action during the election. A primary consideration here was the travel and mask

restrictions that were present during the election. A brief look at social distancing, mask-wearing

policies, and potentially toxic air illuminated a reconceptualization of space in which the

boundaries typically marked by human elements are invaded and reworked by nonhuman

elements – i.e., the virus. Human attempts to demarcate boundaries were perceived in varied

ways leading to varied experiences of the material voting experience.

Third, and finally, the discursive components were considered. While the public was in

the voting process, there were widespread reports of voter fraud and ballot burning and

destruction. These claims, while ultimately proved false in most cases, centered around the use

of mail-in votes as well as electronic voting machines. Subscription to such claims showed a

unique distrust of both digital and analog voting systems for many in the United States.

Overall, the analysis – through a look at the technical, material, and discursive elements –

illuminated the difficulty with which one might define the "voter experience" in the 2020

presidential election. Differences in voter experience, environmental considerations, and

surrounding discourse showed the various forms of technological and perceptual intervention in

the 2020 US presidential election. Where in the past we have seen forms of voting technology

fail, the 2020 election showed technology working accurately yet being perceived negatively.

From the perspective of new materialism, this chasm in meaning highlighted a unique

ontological moment in which the faith in both digital and analog technologies was shaken. The

US populace found itself at an impasse in which the efficacy of democracy relied on the faith in

a wide variety of human people and nonhuman processes that were each experience in a widely

varied manner across populations and individuals. Ultimately, the 2020 election challenged the

notion that one casting a vote is a direct and efficacious enaction upon the democracy in which

they are placed by shining light on all the different elements and considerations that might alter

an individual's perception of the process itself.

Implications

There are three primary implications of the above conclusions. There is one philosophical/academic implication and two practical implications. The first is primarily a philosophical consideration dealing with the manner in which new materialism has been used in a combinatory fashion with tenets from media ecology. While it was acknowledged in the section on the research assemblage, this philosophical consideration became of secondary importance to the present project but still remains integral to understanding the development of the current project and to projects attempting similar intellectual projects in the future. The second consideration deals with the implications for voters and the experience of voting technologies. This deals with how voters cast their votes in the 2020 US presidential election. The third and final consideration is one of that between voters, voting technologies, and the enactment of democracy as a whole. In this section, we will reflect on the state of voting technologies and democratic efficacy moving into the future.

First, there is a contribution to the fields of new materialism and media. While ultimately, this implication has morphed into a tangential consideration for the present research endeavor, it is still important to consider pushing both intellectual traditions forward. With origins in the early to mid-twentieth century, the evolved conceptualization of matter posited by Barad is integral and unavoidable when we discuss mediating technologies. On the other hand, bringing Barad's work – and by consequence, the work of other scientists – out of the laboratory and into the social world is of primary importance. The historically dualistic nature between science and society has become untenable in the 21st century. In the broadest sense, understanding our human nature requires a multi-disciplinary attentiveness that both the fields of thought integrated into the above analysis provide. As a final point, there is also an implication for studying prominent

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voices in both traditions. Barad and McLuhan's theories have been continually reworked and applied to other situations, and the overlap between Barad's agential realism and McLuhan's quantum logic warrants further investigation as it pertains to the field of media studies.

In addition to the philosophical/academic consideration, there are also two practical implications. The first of which deals with the relations between voters and voter technology. Differing designs in voting technologies had different considerations and affordances in the 2020 US presidential elections. The decision – which may not have been a decision for people at all with health, geographic, or technological restrictions – to vote in person or via absentee vote is one that received more attention and social pressure than ever in contemporary times. Moreover, the technologies interacted with, and the materiality led to a voting experience that could have varied from precinct to precinct in the same town. As has been seen in many aspects of personal, professional, and social life in the wake of the COVID-19 pandemic, the opening up of different possibilities for completing tasks – in this case, how to cast one's vote – changes the relationship between the voter, their voting technologies, and the democracy in which both are emplaced.

As discussed above, voters have been inundated with advertisements telling them to "just vote." However, the 2020 election served as a pivotal point in US history in which "just" voting was anything but. With multiple vehicles available for voting, we are now confronted with the notion that perhaps voting in person might not be the most advantageous or enjoyable experience for all. Many other countries are quite comfortable with voting via mail-in ballots. With increased acceptance of mail-in voting, we might see the methodological norms surrounding voting be altered substantially in the US in the coming elections. Moreover, as voters become comfortable with voting from a distance, we might see the door opened for digital technologies to fill the gap currently occupied by analog technologies. While these claims are merely

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speculative, the 2020 election's introduction of method choice has broad implications over the decades to come.

The third and final implication of the present study is the double-helix relationship between voters, voting technologies, and the democracy of the United States of America. The present study has taken the position that voting technologies mediate voters and democracy. Through the above analysis the rhizomatic and intensely variegated nature of voting in the 2020 US presidential election. Voters participating in the same election underwent vastly different material processes and were affected by wildly different perceptual information and frameworks. The calls for individuals to "just vote" which implicate both a universal experience and an efficacious one did not hold weight in the 2020 election and it might be expected that similar slogans remain inadequate. If voting is the cornerstone of democracy – in which the individual has a voice in the system that governs their existence – and it is not practiced in a sufficiently systematic manner, it would appear that the efficacy of the entire democratic system becomes subject to revision and/or rejection by the populace.

This final implication begs the question of who has control over the agential cut that voters are making on the democratic system. As election technology is shown to be distributed and utilized in vastly different ways by voters – consequently leading to vastly different voter experiences and perceptions – we are left not with questions of accuracy but instead questions of power. This shifts us from what traditionally might be considered an epistemic question to that of an ontological one. Confusing what type of question has the potential to contribute to disastrous or fortuitous appraisals and plans of action with regards to voter participation, experience, and perception.

Ultimately, the 2020 US presidential election was a unique case contributing to public understanding of how voting technologies and what it means to vote in the digital age. For the first time since the 2000 election, we see a widespread lack of faith – in the infrastructure assembled to maintain the democratic systems with which our society is so particularly prideful. However, in contrast to the 2000 election, there was minimal evidence supporting the notion that voting technologies were ineffective in allowing individuals to accurately enact their vote. A purely epistemological framework – i.e., what did or did not happen – is insufficient for understanding the material and discursive conditions of the present. The 2020 election highlighted the ontological inseparability between voters, voting technology, propaganda, and democratic systems. Moving forward, it will be integral not to consider these systems mutually exclusive categories. Understanding them as components of a much larger assemblage with human and nonhuman elements intra-acting on multiple levels to enact the phenomena provides room for the consideration of a greater number of intervening factors.

Future Directions for Inquiry

The present study took a new materialist approach to the phenomenon of voting technologies and voters' experience in the 2020 election. As has been shown above, this approach is highly contextual and contingent on the specific material-discursive arrangements of elements at the time of inquiry. However, this approach can be extrapolated to look at other elections on the local, regional, national, and international scale. While many studies typically investigate narrowly defined concepts and analyses carefully limited in scope, the present study showed how researchers in the future might push past these disciplinary boundaries to consider how various components of phenomena interrelate and ultimately bring to fruition the

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phenomena in question. Such an approach will allow for a more nuanced view of political elections and events in general.

Moreover, the exploratory nature of the present study opened numerous areas that demand additional analysis. For instance, the present study illuminated the complex categorization system of voting technologies and the varied ways in which they are interpreted and applied in US elections. Further inquiry might investigate these technologies themselves. Additionally, the material elements constraining the 2020 election – namely the COVID-19 pandemic restrictions and guidelines – illuminated the massive impact that the context in which elections take place can have on the elections themselves. Looking both to the past and to the future, there are significant areas for research on contextual influences on elections. Similarly, the discursive and propagandic elements focused on in this study continue a long line of research on claims of voter fraud. Continued efforts to isolate and connect how voter fraud claims arise are validated and affect voters' decisions. Lastly, and perhaps most importantly, will be a further interrogation on the *choice* of voting method used in the future. While it is the norm in other countries to vote by mail, this is certainly not the case in the United States. Yet, in the 2020 election, US voters are now tasked with not only the choice of whom they are going to vote and who they are going to vote for but also *how* they are going to cast their ballot. Further research investigating the choice of method and analyzing the norms of voting methods going forward should prove to be of integral importance to understanding what direction US voting systems take in the future.

As a final point, it is important to underscore the novelty of the approach taken in studying the 2020 election. While it has been noted that this approach can be applied to other elections and political events, it is also important to note that this method of analysis need not be

the only form of inquiry taken. The analysis opened areas of study that can be answered – and in some cases might best be answered – via both qualitative and quantitative studies. For instance, in discussing voters' decisions on what method to use to vote, interviews and surveys might be beneficial in isolating factors that intervened. Overall, the above project entered the 2020 election from a unique vantage point and provided several conclusions that should be noted for future research.

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