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**THE COMMUNICATION OF SOCIAL MOVEMENTS OPPOSING
TECHNOLOGICAL ADVANCEMENTS**

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INTRODUCTION

1.1 Objectives

This paper aims to critically explore various perspectives related to the impact of technological progress on society and the emergence of related social movements. Technology has become deeply ingrained in our lives, prompting us to question whether its influence is predominantly positive or negative. When we refer to social movements, we're talking about organized efforts to drive societal change, often representing underrepresented or marginalized groups. The French Revolution serves as an early example of a social movement that sought both political and social reform in an organized manner. These movements typically arise in response to deep-seated social and economic inequalities, aiming to address these systemic injustices. For social movements to gain legitimacy in the eyes of the broader public, they must have a clear and benevolent purpose, coherent symbols, structured plans, and support from various segments of society (Tilly, 2004). While the promotion of noble causes is undoubtedly significant in social movements, it's worth noting that some detrimental ideologies have been labelled as such due to their alignment with established criteria. This study primarily focuses on social movements related to technological advancements, as indicated by the study's title, and delves into the factors driving their emergence in our society. People hold various interpretations of technology, but for the sake of this study, I will consider encompassing technological innovations ranging from machinery like steam engines to technological competencies such as the development of genetically modified organisms (GMOs) and enhancements in industrial processes as a definition of technology.

Technology, in its various forms, has been, is, and will continue to be a part of our lives. Still, it's prudent to exercise caution regarding the pace of scientific advancement. Some have expressed concerns about unchecked technological progress, leading to the formation of distinct ideologies and social movements. This study seeks to identify correlations between fundamental moral principles, social movements, and technological advancement, while also exploring the idea that social movements exhibit cyclical patterns, an assertion supported by the works of experts in the field. There's a prevailing suspicion, which serves as one of my research questions, that significant technological leaps can elicit feelings of fear, anxiety, and resistance among the general public (Glendinning, 1990).

Consequently, the introduction of new inventions often meets with resistance, and social movements form, rooted in legitimate ethical values and various concerns related to personal and collective well-being in the present and future. In accordance with the former statements my hypotheses and research questions that await answering are as follows: Can we see a periodical repetition of social movements in relation to the introduction of new technological inventions, moreover, are these social movements able to combat technological growth in a progressive manner?

In the following pages, this study will delve into the historical evolution and theoretical foundations of social movements, analysing specific movements in the context of technological progress. Ultimately, the analysis will conclude by highlighting the importance of approaching technology with caution and emphasizing the significance of social movements aimed at tempering the rapid advancement of technology.

1.2 Methodology and structure

Methodologically, this study relies on a combination of secondary research, desk research, and comprehensive content analysis. In lieu of a chronological approach to scrutinizing social movements, the research strategy is oriented towards the discernment of logical interrelationships among anti-technology social movements. The primary objective is to identify commonalities and correlations across historical instances, thereby substantiating the recurring nature of these phenomena. The examination entails a critical analysis of scholarly texts, research papers, and reputable literature sources related to social movements, including works by notable figures such as Kropotkin, Kaczynski, and Tilly. The focal point of this analysis is the origins of social movements, the foundational principles upon which they are built, and their opposition to technological progress. Additionally, the inherent nature of these social movements assumes a pivotal role in their interpretation.

Furthermore, the study seeks to draw parallels between the aforementioned sections, drawing from the works of experts in sociology, communication theory, and cultural anthropology, while striving to incorporate a contemporary perspective. This re-evaluation involves a juxtaposition of past and contemporary movements in conjunction with modern communication theories. It is noteworthy that communication represents an ever evolving, albeit omnipresent facet of social movements, notwithstanding the significant disparities between the 19th century and the present day. While recognizing that all forms of behaviour serve as a mode of communication, particular emphasis is placed on modes of interest assertion.

The first chapter of the research delineates the definition of social movements, delves into the components of these movements as informed by diverse theoretical frameworks, and explores the life cycle and causal underpinnings of social movements. In the subsequent chapter, the study comprehensively reviews various historical instances of anti-technology movements and ideologies, with a focus on identifying the logical connections that underlie the sequencing of these campaigns.

The subchapter pertaining to the masses and crises is positioned as a foundational element for the subsequent occurrences of mass campaigns within the historical instances subdivision. While a strict chronological approach to examining social movements has been eschewed, the initial focus is directed towards the Luddites, closely intertwined with the Neo-Luddite social movement. Furthermore, a connection is drawn between anarchism and the radical dimension of Neo-Luddism, concurrently, the introduction of non-violent ideologies within the anarchist doctrine is highlighted. Marxism holds a pivotal position within the discourse on technology, primarily due to the genesis of anti-technology social movements from the original Marxist school of thought, which is subjected to thorough analysis in the closing subsection of historical instances.

Additionally, a dedicated subchapter is reserved for the examination of the communicational advancements in contemporary social movements, providing a valuable instrument for the observation of framing evolution. The culmination of this academic inquiry converges upon the examination of the most recent technological innovation, Artificial Intelligence, and the pervasive opposition it has engendered. Ultimately, the clarification of conclusions is contingent upon the correlation between critically scrutinized academic content and the observed trajectory of social movements. The research questions will be addressed to the fullest extent possible, having comprehensively reviewed the extensive body of literature presented in the bibliography.

1. HOW SOCIAL REACTIONS CAN EVOLVE INTO SOCIAL MOVEMENTS – A BRIEF LITERATURE REVIEW

1.1 Definition of social movements

Social movements prove to be a rather difficult term to grasp and clearly define, however, a broad terminology could be applied to familiarize ourselves with the concept. Social movements share handful of characteristics that help us identify these types of campaigns. Such movements tend to be loosely organized in order to achieve a social goal, by promoting or preventing the implementation of certain alterations in social structure or values. Gatherings can be spontaneous or preplanned, however, a collective spirit and shared opinion on society serves as a denominator in every social movement (Turner, et al.). By this definition, one might wonder when the first social movement occurred in the brief history of mankind. It is an onerous task to pinpoint an exact organized group action and label it the first of many social movements, however, there seems to be a consensus among sociologist, that the French revolution could be classified as the very first social movement. The first historical mention of the nowadays widely used term „social movements” occurred in 1850 by German sociologist Lorenz von Stein, in his book *History of the French Social Movement from 1789-1850*. In accordance with the aforementioned definition, the question could be raised about why can not we classify campaigns before 1791 as social movements?

1.2 Components of social movements

There are certain criteria to be met with the aim of recognizing a grassroots movement as a social one. First and foremost, contentious performances or displays of disappointment must materialize, by which individuals espouse others directly affected by political or social change. As already mentioned, the champion group of people merely share the same outlook on society, thus they act out of pure sympathy, rightful conviction, and fundamental moral values. Social movements consist of three fundamental components. These three being, campaigns, repertoire, and WUNC-display (Charles Tilly, 2004).

To wholly fathom the nature of social movements it is important to first elucidate these factors. Campaigns being the sustained collective, public effort, as earlier stated in the basic definition, on the affected audiences. Repertoire stands for a combination of political actions, such as: coalitions, public meetings, rallies, demonstrations, and other forms of assertion of interests. WUNC displays the public representation of worthiness, unity, numbers, and commitments regarding the cause they stand for. In terms of communicating our ideas, needs and wants through social movements, one must obey the WUNC displays in order to succeed. Each of the four categories is equally important so let me decipher their meaning.

1.3 WUNC display

In this context worthiness refers to the worth of the participants. Does the social movement have peripheral social groups supporting them? These groups make a social movement admirable to the public, thus determining its worth. Unity is measured by the amount of togetherness the participants can communicate with the use of nonverbal and verbal forms of communication. Matching clothing, badges and banners portray harmony and integrity just as well as marching and protesting, while chanting and singing. Numbers are more self-explanatory than the previous two categories, however, signature on petitions and any type of action resembling headcount also count towards this category. As for our last agent of the WUNC display, commitment is interpreted as an act despite difficult circumstances, for example bad weather and visible oppression. The factors of WUNC displays are inseparable from one another, thus forming an effective indicator while analysing social movements (Tilly, 2004, pp 3-5). Once basic definition and a more advanced theory on social movements are both unequivocal, the focus should shift towards the root cause of the analysed subject.

1.4 Causes and types of social movements

Historically, for individuals to form comparable gatherings to the French Revolution, there must be a common cause, which makes the general population side with each other in opposition to the system. The source that leads to public uproar of this magnitude frequently consists of political or cultural aspects, which points to the fact that partly developed political systems are a requirement for social movements. Market capitalization, parliamentarization, economic and socioeconomic changes made it possible for social movements to emerge. As societies began to rapidly evolve in the late 18th and early 19th century, the hoi polloi was able to be progressively more involved in matters regarding their welfare. As for technological advancements, it is important to not neglect the times where the term did not refer to computer science, rather the introductions of machines. This famously led to people losing their jobs, which compromised their livelihood in a laborious time in history. The very first social movement, which opposed the introduction of cost saving machines, which were destined to lead to production betterment and the amelioration of worker welfare, occurred in the early 19th century in Britain. The Luddites, British textile industry workers, began destroying said machines, amid the possible threat of losing their jobs. In order to entirely understand the essence of this social movement, we must evaluate the features of it. For this analysis to be successful we must use the system first introduced by American cultural anthropologist David F. Aberle in 1967.

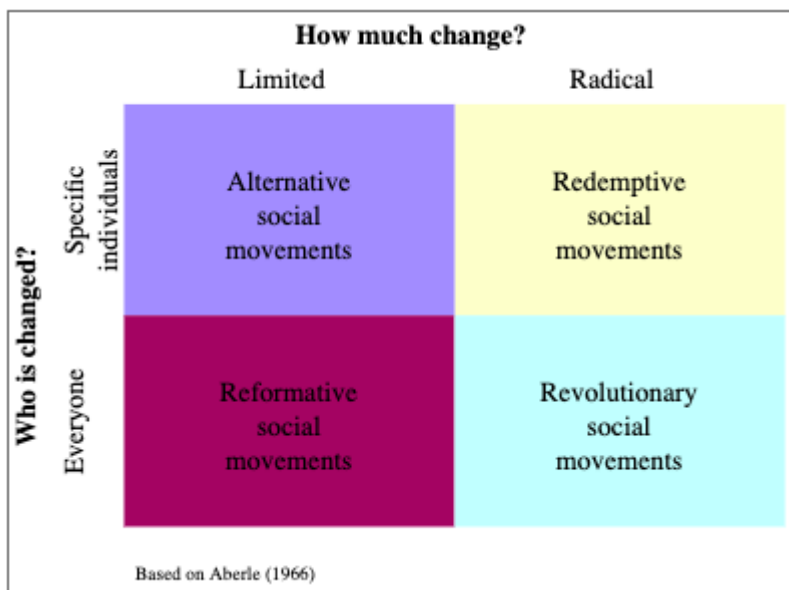


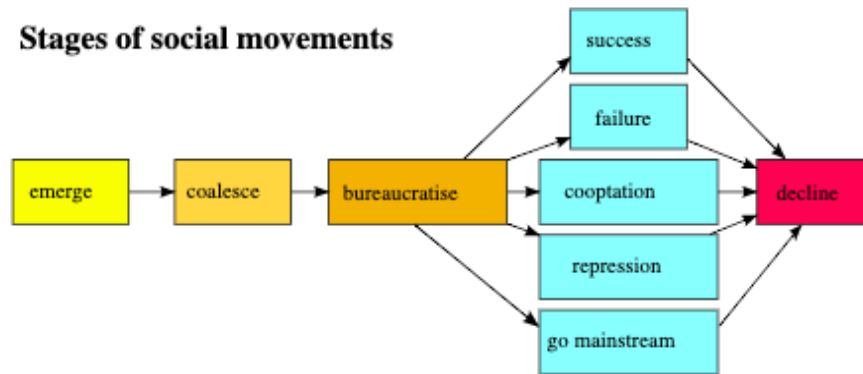
Figure 1. Classification of social movements based on Aberle (1966)

Figure one lets us classify social movements in four different groups, these being alternative social movements, redemptive social movements, reformatory social movements, and revolutionary social movements. For this simple collocation two questions must be raised about the observed campaign. Who is the movement attempting to change, furthermore, how much change is being advocated? It is evident that Luddites intended change for specific individuals in a radical manner, therefore, the Luddite movement can be labelled a Redemptive social movement. This alone is a rather simple approach to such a complex subject, for this reason, the implementation of other questions in pursuance of complete definition is required. Based on the characteristics of the movement one will be able to determine the substance that it is constructed of. In the process of interpreting the Luddite movement more profoundly, it is important to recognize that this serves as a mere example for acquainting oneself with the method and comprehending the essence of social movements.

Moving on, the first question is concerning the scope of the movement, whether it is a reform or a radical one. By definition, reform movements are dedicated to changing some norm, usually in a legal way, while radical movements concentrate on changing values or whole value systems. Reform modifications can also be achieved in radical manner, as well as reformist, nevertheless, the most crucial factor is the subject that requires the alteration. The social movement in question is a reform movement, however it involves radical elements, which help facilitate the desired outcome. The second question that awaits answering focuses on the type of change that is sought after. In this case, or in most of the cases where technological advancements are in the epicentre, one can confidently say that General Ludd's men were in conservative nature. Thirdly one must identify whether the movement focuses on changing individuals or their circumstances or groups of individuals. A great example of the former is any type of religion, for the latter a perfect instance is readily available, the Luddite movement. One should also distinguish social movements based on the method with which the participants want to achieve change. Thinking of Mahatma Gandhi or Martin Luther King, peaceful protests immediately spring to mind, in contrast, the Black Panther takeover of the California legislature should be labelled as a violent social movement. Regarding violent social movements, one should also distinguish between regular fighting movements, such as the Black Panther, and movements that involve terrorist tactics, for example the Provisional Irish Republican Army (IRA), which was labelled a terrorist group in the United Kingdom.

Range should also be taken into consideration when talking about social movements. Is the observed campaign a local one or does it have global following? The latter has a program for the entire human race and its future, however local ones only focus on a small group of affected individuals. Based on the five characteristics discussed anyone is able to identify and properly interpret most social movements. Bear in mind that the analysis ran on the Luddite movement is a short and rather elementary illustration, while *ceteris paribus* was accepted, however, social movements tend to be more dynamically complicated. In order to entirely grasp the concept of social movements, further familiarization with the dynamics is necessary. In the following paragraph I aim to introduce another aspect of social movements, which is life cycles.

1.5 Stages of social movements



Adapted from Blumer (1969), Mauss (1975), and Tilly (1978)

Figure 2. Stages of social movements based on Blumer (1969), Mauss (1975), and Tilly (1978)

When talking about the dynamics of social movements one must, first and foremost, lay down some fundamental truths. Social movements are not eternal, they born, grow, achieve success, or fall short of expectations and then disband or enter a declining phase. The figure does not include stage zero, which Neil Smelser calls an „initiating event”. I have already talked about root cause, and the initiating event is a part of that, however, this refers to a singular event that ignites a chain reaction, therefore, creating the social movement. According to Neil Smelser social movements are the „results of strains in the social structure” (Smelser, 1962). By now, elementary knowledge regarding social movements and their evolution has been acquired. In the upcoming sections, the focus will shift towards the paper's main topic, which involves social movements opposing modernity and the technological boom.

1.6 Social cycle theory

Pitirim Sorokin's Social Cycle Theory posits that societies undergo cyclical patterns of development, marked by alternating phases of integration and disintegration. These cycles are primarily driven by shifts in a society's dominant cultural orientation. Sorokin identifies three fundamental cultural types: ideational, idealistic, and sensate. In the ideational phase, society prioritizes spiritual and intellectual values, resulting in a cohesive and harmonious social order. The idealistic phase strikes a balance between spirituality and materialism, emphasizing ethical and moral values. The sensate phase is characterized by materialism and secularism, with a breakdown of moral and spiritual values, leading to social disintegration. Sorokin's theory suggests that societies oscillate between these cultural orientations, and transitions between phases are often prompted by cultural crises and significant events. Maintaining a balance between these cultural types is crucial for social stability and preventing societal decline. This theory continues to influence the study of societal development and cultural change, providing a valuable framework for understanding the dynamics of societies as they navigate cultural evolution (Pitirim A. Sorokin, 1937, 1943).

2. THE FOUNDATION, NOTION AND LEGACY OF ANTI-TECH SOCIAL MOVEMENTS

2.1 The masses and crises

As already mentioned, citizens can act out of despair, anxiety, fear or even fantasy, when it comes to forming social movements, however, one of the most important aspect of masses has not been discussed, the mass itself. Upon joining a certain group, the individual loses certain traits of one's personality and the more involved one gets in the norms of the group, more and more parts will gradually deteriorate of one's identity. As if one will submerge into the mass and lose part of oneself due to the collectiveness. Said process was coined deindividuation by American social psychologist Leon Festinger and is widely accepted in our time. Social psychology suggests that upon easing into the consensus of a certain group, people will more likely orient themselves towards extremities. Combining Tilly's and Festinger's theories one can gain some form of understanding as to why social movements could end up materializing in a radical or violent way. There are two constants when it comes to the „initiating event” - which I have already talked about as step zero in the dynamics of social movements – these being crisis, or a strong feeling of the unavoidable crisis, and masses. The crisis phenomenon is a fundamental part of life. There are two perspectives from which we can observe crises in order to understand their significance in our lifetime. From a materialistic standpoint the most vital quality lies in the unsolvable nature of the crises, in contrary, from a subjective standpoint being conscious of the ever-approaching impasse seems to be the most concerning factor. Regarding our topic, crisis most commonly refers to progress, which an exceedingly diverse and divisive theme. It is not my obligation to make a definitive judgment whether progress is inherently good or bad, beneficial, or detrimental. What is undeniable, though, is that progress has consistently held a central role in human history. There are varying opinions; some are critical, while others are supportive. Nonetheless, it is clear that people have the capacity to express their emotions and beliefs concerning the enduring evolution of society, technology, and human relationships. Numerous

groups have historically engaged in this endeavour, some are presently active, and undoubtedly, there will be numerous factions in the future that will persist in doing so. However, the overarching question, as I alluded to earlier, remains: Are the efforts of the past and the contemporary social movements genuinely distinct, or do they manifest cyclically within the context of social movements? In the next paragraphs we will look at historic examples, theories regarding the essence of the masses and try to connect the dots, which will ultimately answer our question. Was Pitirim Sorokin right in the social cycle theory and does our society really function as an ouroboros or are we capable of opposing progress progressively?

2.2 Historical instances

2.2.1 Luddites and the early 19th century

Smelser argues that rapid change is one of, if not the most important factor when people decide to participate in radical social movements (Smelser cited in Weeber & Rodeheaver, 2003). It is established that progress has been accelerating at almost lightspeed, therefore, groups opposing these kinds of advancements, also emerge often than before... or do they? It would be reckless to jump into conclusions of this magnitude after just a short introduction.

I have already mentioned the Luddites several times, however, this is the first ever documented antitechnology social movement, moreover, the term „luddite” became an adjective for people in general who oppose the new way of technology. The machine-breaking movement was a way of putting pressure onto the factory owner in order to maintain or better working conditions. When petitions and peaceful protest prove to be insignificant, the mass must and will turn its interest toward more drastic measures. This could mean violent protest, vandalism and, in our case, machine breaking. What is important to note is that the masses do not despise the technological advancements, but the nature of change, which could be detrimental for their life. As a last-ditch effort, damaging the very source of the problem could emerge as a possible solution. This act is their form of communicating their dissatisfaction and deep-rooted emotions that have been brewing for several months. Up until this point some may believe that the members of the social movements could not comprehend the technological change and its impact, therefore, they acted out of sheer anxiety, fear or even aggression, however history tells us otherwise. Upon further examining the Luddites, the mine workers or even shearmen and weavers between the late 18th and early 19th century, one can safely conclude that the labourers did not wreck machines spontaneously without thought. When absolute disadvantage did not stem from technological growth, it is impossible to find records of workers sabotaging machinery.

The advent of the Industrial Revolution witnessed the proliferation of new machinery, which substantially augmented productivity. However, this surge in efficiency frequently translated into workforce reductions, owing to the heightened effectiveness of these innovative devices. „One man can do as much... as near twenty without them”, according to the introducer of the Spitalfields weaver machines. I should not have to elaborate why these

words could feel threatening to an 18th-19th century worker, furthermore why this could induce insufferable amounts of anxiety, upon which one may act, even to the extent of violence. The workers after Spitalfields formed social movements to oppose the new inventions and at the same time they stood for immigrants working for subpar wage rates, furthermore, proceeded to destroy looms to counter cutting wages. It is evident in this case that the source of the social movements, or the initiating event as it was coined before, was the introduction of new machines and it evolved based on morality, equality and fighting for maintaining living standards. Most examples from the observed period sprouted into violent, destructive campaigns or even revolutions. Indeed, social movements can and usually do grow into revolutions. The Luddites used machine wrecking as an assertion of interest, which ultimately proved to be successful. In the observed historical period heaps of workers from vastly different fields began to stand up for themselves on the grounds of what they believed was right, moreover, they engaged in machine breaking. However, as time went on, and society progressed in a comparable manner, this practice began to fade away and new forms of boycotting emerged parallel with more modern anti-technological movements and ideologies.

2.2.2 Neo Luddism and its radical communication

In contemporary society, the inexorable progression of technology is largely facilitated by the prevailing political and economic structures of most modern nations. Moreover, the introduction of novel technological innovations frequently engenders adverse consequences for one or multiple societal factions. Hence, it becomes imperative not only to scrutinize these advancements but also to proactively address them. Although the practice of machine-wrecking belongs to a bygone era, intellectual opposition remains a viable avenue to achieve desired outcomes. Over the past century and a half, an array of new societal factions has coalesced, arisen, and disappeared, yet the fundamental imperative endures—a critical need to perpetuate this awareness and commitment prevails.

Just as the original Luddites, the followers of Neo-Luddism intermittently engage in vandalism, destruction of machines or threats aimed at the so called „machine owner”. It is a crucial part of the Neo-Luddite ideology that they do not consider themselves inherently anti-tech per se, but they oppose any extent of technological development that could prove to be destructive to human lives and communities. Kaczynski argued that mental illnesses derive from technological advancements since we neglect human connection, and instead delve ourselves in the cyberworld, where we are met with all kinds of lifestyles. Furthermore, modern technology also triggers aggressive thoughts due to the number of stimuli we receive and the content we engage with (Kaczynski, 1995). According to the Neo-Luddites, technology is intrinsic to human nature, culture, and creativity. Luddites also made an effort on convincing the factory owner by sending petitions and proposals, however, it all fell on deaf ears, consequently, they turned to violence. In the modern corporate and technology ridden world Theodore Kaczynski, a mathematics prodigy at Harvard and later assistant professor at Berkley University, abandoned his academic life and relocated into the wilderness. (Similarly, to Henry David Thoreau, who also serves as an inspiration for this research paper.) He started to live a primitive lifestyle, while writing about human nature,

political ideologies, and industrialization. The connection of human nature and industrialization perplexed the mind of this highly intelligent individual. In his 35.000-word manifesto, *The Unabomber Manifesto: Industrial Society and Its Future*, Kaczynski analysed the impact industrialization had on human behaviour and society as a whole. He urged his fellow citizens to reject modernity and return to a more feral state, similar to green anarchists and the followers of anarcho-primitivists, however, upon living in a forest in Montana he saw the destruction of nature first hand and decided to act. From 1978-1995 he handcrafted sixteen mailbombs, which he later delivered to civilians he believed to be taking active part in the growth of technology and destruction of nature. The bombings ultimately ended with 23 injuries and 3 deaths in 1995, when Kaczynski wrote a series of letters to various media outlets stating that he would „desist from terrorism” if his 35.000-word Manifesto was to be published. Kaczynski plead guilty to all charges and received 8 consecutive life sentences without the possibility of parole. The Unabomber’s story ended in 2023 when he took his own life in his jail cell.

2.2.3 Anarchism and the connection with Neo-Luddism

In the latter part of the 19th century anarchism got introduced to the public through the works of Pierre-Joseph Proudhon, Mikhail Bakunin, and Peter Kropotkin alongside a great number of other thinkers. Nowadays, anarchism seems to have lost its original meaning and is oftentimes interpreted as a derogatory term, however, the root and the philosophical background is without a doubt connected to the topic of this very paper. Anarchism is a political philosophy and movement, that questions the very existence of authority, hierarchy institutions and typically capitalism. One does not require the deepest of knowledge when it comes to classical anarchism, however, the basic notion is of great importance, since capitalism serves as a direct and even an indirect source of unregulated development and progress. Within the core values of anarchism lies environmentalism, the aforementioned Peter Kropotkin being the leading figure for addressing the importance of environmental protection, which made it possible for green-anarchism, also referred to as eco-anarchism, to spread within the fibre of society. With the Industrial Revolution, humankind got introduced to large-scale ecological disasters and industrialized societies began to experience pollution and environmental degradation like never seen before. Green-Anarchism broadened the classical interpretation of anarchism and started focusing on not just human-human connections, but human-nonhuman connections as well. They propagated the connection between humans and nature and tried to abolish technology as a whole. Kropotkin was the first environmentalist green-anarchist, who contrary to Marxists, advocated for the localisation of the economy, thus creating a deeper connection between worker and nature, and putting an end to workers alienation, which stemmed from the increase in industrialization. The base content of anarchism is still implied in green-anarchism, such as decentralization, however, the most elementary aspect of this ideology is the „back to nature” term. By the first part of the 20th century green-anarchism became one of the most notable sub ideologies and social movements in favour of anti-tech.

There are also glaring connections between the Tolstoyan movement and green-anarchists, although the former is much more specific, often referred to as anarcho-pacifism, proving that anarchism does not go hand in hand with violence. The Tolstoyan communes also adopted the „return to nature” sentiment, which later influenced Mahatman Gandhi as well. All the aforestated social movements and ideologies emanated from the opposition of technology, however, the specific ideological core values influenced the way the social movements got carried out and were communicated. Some groups have participated in direct action, which is a political or economical practice, where a certain group uses its, again, political, or economical power in order to achieve their goals. The concepts of green-anarchism continue to live on in numerous social and political movements, which still serve as advocates for the abolishment of technological progress. The „Earth First!” and the „New Left” are amongst the frontrunners of these ideas, furthermore, they have attracted a sizeable following during their existence.

The thought-provoking connection is that almost a century apart people feared the same, as in the ever-approaching doom of technological progress will be the end of humanity as we know it. It does not mean that the school of thought is the same in both instances, but the opposite, regardless of political belief, social status, education, or religion, people have feared technology to an extent. Kropotkin, Bakunin, and Kaczynski are all renowned figures of anti-tech movements, but their approaches, methods and opinions are vastly different. The only aspect they share is the abduction of progress, which means, that the sentiment or core values are identical even a century apart. I have already talked about core values in the beginning; however, this proves once again that acting out of good consciousness - not saying that mail bombing is a good deed – and conviction can incorporate diverse people, which fits into the exact definition of social movements. Having analysed the career of green anarchists and Theodore Kaczynski, undeniable parallels can be identified between the two. However, the communication of their fears is in stark contrast. While green anarchism advocates for, first and foremost, political change as the focal point of altering the trajectory of mankind, Neo-Luddites and the followers of The Unabomber chose a much more radical, hands-on mode of communicating their ideas.

2.2.4. Marxist discourse and technology

Currently, the transition is taking place from the realm of direct action to a more theoretical dimension, acknowledging the pivotal role that ideas play in sparking social movements. It is essential to acknowledge the presence of ideological social movements. When discussing this, I can't omit Karl Marx and the Marxist school of thought, even though it's a challenging task to encapsulate the entirety of Marxism in this discussion without being overly dogmatic. In an earlier section, we explored the concept of alienation. This notion is a crucial element in Marx's ideology. The introduction of the steam engine brought about significant global changes, contributing to the worsening sense of alienation among workers. Marx argued that technological automation aimed to take over the interesting parts of labour, making the work of the working class repetitive and uninspiring (Amy E. Wendling, 2009). Marx believed that alienation, a fundamental aspect in the resistance against technology, is closely tied to capitalism. He contended that it's almost inevitable for the working class to rebel against machines, which devalue the true essence of production. Workers, motivated by despair, frustration, and a distorted view of their own situation, tend to act out against technology. Their grievances aren't directly against technology itself but rather the adverse consequences it brings. Consequently, they often see destruction as the only viable means of asserting their interests. In his earlier philosophical works as a young Hegelian, Karl Marx also delved into the role of "Spirit" and how capitalism gradually erodes it. Drawing from Hegelian ideas, Marx argued that the introduction of steam machines brought about a significant shift in human embodiment, leading to a more mechanical existence characterized by the energetic conversion of labour. As this transformation continues, the boundaries between humans, nature, and animals become increasingly blurred. For a more comprehensive exploration of alienation, one must turn to Marx's seminal work, "Capital," where he diligently seeks to establish a strong link between capitalism and alienation. However, it's important to note that Marx confines his analysis of these concepts within the framework of capitalism. In a capitalist system, labour is essentially reduced to labour-power, effectively removing the human essence from the equation of political revolution. This approach renders the concept of alienation less applicable, as the human essence undergoes gradual erasure in the process of capitalist development.

In essence, capitalism serves as a breeding ground for technological innovation and progress. However, its primary aim is not necessarily the improvement of human living conditions; it is mainly focused on maximizing production and profit. This distinction underscores the essential objective of capitalism in shaping technological advancements.

All the mentioned concerns and ideas share similarities with the ideologies we have discussed already, however they are not entirely same. These concepts originate from, once again, honest consciousness, moral values, and protection of living standards, however they counter different eras of technology with different tools, moreover they try to achieve diverse end goals. But one thing remains the constant denominator in the ideology of these great thinkers, and that is trying to slow down or reject the rapid amelioration of technology. Whether the political ideology is evidently leftist (e.g., green-anarchists) or plainly right-wing (Ted Kaczynski) the core values emanate from the same humanist notion. It does not seem to

be substantive where mankind finds itself on the trajectory of progress, furthermore, the invention introduced to the public could either be of rather primitive nature or extremely complex, the reception among the observed thinkers remains relatively the same.

Having arrived at the question that generates the fieriest of debates one must ask: How can we oppose technology successfully (with the help of political and social movements) and what should we aspire for?

Many have debated the most optimal system for mankind up to this point without success, therefore, I would not put myself up for the task to solve one of the most arduous problems ever, however, when it comes to the technological aspect we can and should familiarize ourselves with the presented alternatives. Up to this point, a couple of methods have been observed in the pursuit of evading or rejecting technological advancements. Form communal groups and returning to a more primal lifestyle to threatening and committing acts of violence towards machines and even machine owners, all of these have been attempted in favour of localised changes. As I have already mentioned, every revolution is a social movement, but not every social movement evolves into revolution, still, this segment aims to provide a social revolution against technology. Marx believed that the communes of early civilization were the last optimal societal structure and communism would be the final, perfect form of human society. Capitalism would need to be abolished for the sake of communism, for that a worldwide revolt is needed from the masses. As we are all familiar with the political ideologies of Marx, we could establish that he was not after the obduction of technology, at least not first and foremost. Although, as many have before him, he planned to use machines as an object for his dissatisfaction. According to him, society needed a whole redesign since the sole pursuance of production and profit will eventually lead to detrimental endpoint. In order to reach harmony within society we require harmony between nature and human, since the ever-accelerating progress alienates us from each other, furthermore, pushes us further and further from nature. The thought also emerges within the borders of Marxism and socialism, that the introduction of more inventions, and the quest for increasing production will induce differences in society, mostly at a financial standpoint. The middle class will eventually disappear, and we will not be able to bridge the gap. Now of course, this would be the result of capitalism as well and not just technology, however, the two go hand in hand, moreover, they feed off each other.

The longest chapter of *Capital* by Karl Marx is titled „*Machinery and Large Scale Industry*“, which stands over 150 pages and is a brilliant exegesis of capitalism and production, moreover, the social history of the ever-advancing technology. According to Marx, bright ideas are the source of machines and technology, however, when these bright ideas materialise in machinery they tend to shape in different ways. Marx is exceptionally well-versed when it comes to technology as we can clearly see from his works. I have already talked about human versus machine in work environment, however, the following quote is extremely important; „*Just as the individual machine retains a dwarf-like character as long as it is worked by the power of man alone, and just as no system of machinery could be properly developed before the steam-engine took the place of earlier motive powers....so too large-scale industry was crippled in its whole development as long as its characteristic*

instrument of production, the machine, owed its existence to personal strength and personal skill, and depended on the muscular development, the keenness of sight and the manual dexterity with which the specialised workers, in manufacture, and the handicraftsmen outside manufacture, wielded their dwarf-like implements” (Karl Marx, Capital: A Critique of Political Economy, 1867, page 265). This section is ever so important to grasp, since at our day and age technology has surpassed the point, where the machine owes its existence to personal skill and strength, outside the invention process. We are mere bystanders at this point due to the mass automatization worldwide. During the 19th century, when Marx was writing, the already discussed Industrial Revolution has shaped society at a never-before-seen pace and measure, but, amid this technological renaissance Marx observed that the advancements disproportionately benefited the capitalist and bourgeois class, furthermore, we can even go to the extent that according to Marx technology was harnessed to intensify the exploitation of the proletariat.

Marx’s detailed and articulate critique of technology has played an instrumental part in shaping the discourse of various contemporary social movements. Labour unions continue to advocate for fair compensation, job security and most recently protections against the dehumanizing effects of automation. They also address issues of worker alienation, which was one of Marx’s main concerns regarding the introduction of the steam engine, alongside the exploitation resulting from technological advancements. Karl Marx's negative views on technology remain pertinent in contemporary discussions of social movements, as the technological landscape continues to evolve. His critique of capitalism's capacity to harness technology for profit at the expense of the working class has enduring relevance. The ongoing struggles for workers' rights and digital privacy rights reflect the abiding influence of Marx's ideas and underscore the importance of his insights in navigating the challenges posed by technology in today's society. Many social movements could be traced back to Marxist ideology such as the Anti-Colonial or Anti-Apartheid movements. The best example for the fusion of Marxist ideology and the fusion of anti-tech thought is the Eco-Socialist social movement.

2.2.5. Eco-socialism

Eco-socialism is an ideology that marries ecological stewardship with socialist principles, forming a harmonious blend of ideas. At its essence, eco-socialism advocates a collective approach where communities take precedence over individualism, emphasizing the need for humanity to act as responsible caretakers of the environment rather than its exploiters. In an age dominated by technology, eco-socialists raise concerns about its ecological impact. They don't reject technology outright but call for a conscientious examination of its environmental consequences, viewing it as a tool to improve, not harm, the planet. Eco-socialism rethinks economic paradigms, shifting focus from relentless growth and the commodification of nature to prioritize sustainability and ecological harmony over profit. This anti-tech social movement embodies an evolving vision that blends socialist values with ecological consciousness. It points the way toward a societal recalibration that encourages humanity to work hand in hand with the planet.

Rapidly, modern inventions are becoming more prevalent; however, the methods of social opposition and communication of social dissatisfaction do not appear to change over time. It is vital to understand that societal groups have extremely limited ways to assert their interest, while staying within the borders of tasteful opposition. In our day and age, the profile of social movements matters just as much as the cause, therefore, the importance of the communication aspect has increased. In the very beginning of this study, we interpreted Charles Tilly's WUNC-analysis theory alongside others, however, in my humble opinion the framing (as in communication) ability in accordance with the content of the social movements is just as important as the other theories. It is high time we look at the digital age and weigh the importance of communication, furthermore, compare the „modern” methods to the ones used in older times.

2.3. Communication of modern social movements

In the digital age, the relationship between technology and society is intricate and multifaceted, reminiscent of earlier social movements grappling with the transformation of their respective eras. While technology has brought about unparalleled advancements, it has also given rise to concerns about surveillance, privacy breaches, and the loss of human agency, echoing the anxieties of the past as societal changes unfold. In response to these challenges, anti-tech social movements continued to emerge as a significant force, resonating with historical movements advocating for change in a rapidly evolving world. I now delve into the importance of communication and framing strategies within anti-tech movements, drawing parallels to earlier social movements and highlighting their crucial role in shaping public discourse and driving social change.

The success of modern anti-tech social movements often hinges on their ability to effectively convey their message to a broader audience, evoking the strategies of past movements. Scholars such as Benford and Snow have argued that framing, the process of defining an issue and its implications, is a vital tool for activists (Benford and Snow, 2000). Anti-tech movements, like their predecessors, employ framing to articulate the dangers and consequences of unchecked technological growth, akin to how civil rights activists framed their struggle for equality or environmentalists framed their fight for the planet's well-being.

Framing, in the field of communication, refers to the strategic process of shaping public perception and understanding of complex issues through the deliberate selection of particular frames or perspectives. This involves crafting narratives, employing specific language, and utilizing visual elements to convey a particular viewpoint. The goal is to influence how audiences interpret and respond to information, ultimately shaping their opinions, attitudes, and behaviours regarding the subject at hand. Communication framing is a powerful tool in shaping public discourse and is commonly used in modern social movements to analyse how various stakeholders present and interpret information to promote their viewpoints or agendas.

In their quest for change, anti-tech movements have developed specialized vocabulary, akin to how past movements coined terms to facilitate their objectives (Winner, *Autonomous Technology*, 1977), (Zuboff, 2019). Concepts such as "technological determinism," "surveillance capitalism," and "digital divide" provide activists with the lexicon necessary to convey the perils of unregulated technological development. This specialized vocabulary parallels the use of language by suffragettes to advocate for women's rights and how labour activists developed their rhetoric for workers' justice.

Furthermore, anti-tech movements, drawing inspiration from past movements, employ metaphorical language effectively. Metaphors such as "the panopticon" and "Big Brother" tap into deep-seated cultural fears, invoking imagery that encapsulates concerns about surveillance and loss of privacy, reminiscent of how the civil rights movement used metaphors to evoke the urgency of their struggle. Such metaphors, both then and now, have the power to make complex issues more relatable to the public, galvanizing support. Just as historical movements mobilized collective action through framing, anti-tech movements leverage concepts like "digital sovereignty" and "tech justice" to resonate with various stakeholders, invoking a sense of unity and common purpose across diverse interests (Dencik and Leister, 2015). These frames parallel past movements that emphasized justice and fairness, uniting disparate groups in a shared vision. However, just as historical movements faced formidable adversaries, anti-tech movements also grapple with the tremendous economic and political power of the tech industry, requiring them to find inspiration in the resilience of past movements. They need to adapt and reframe their strategies, much like previous movements navigated changing political landscapes and emerging challenges.

Accordingly, communication and framing strategies within anti-tech social movements not only reflect a response to contemporary technological challenges but also carry echoes of the strategies employed by historical movements. In this synergy of the past and present, these movements articulate the perils of unchecked technological growth and seek to unite diverse stakeholders under a common cause, much as their predecessors did in their pursuit of social justice and change.

2.4 Prediction from 60 years ago

In addition to growing concerns regarding the rapid amelioration of technology, many have predicted that the phenomenon would be the doom of humanity. The change in our lives can not be understated, therefore, I strongly feel that I must include an exotic, but rather accurate prediction from Marshall McLuhan. Marshall McLuhan's seminal work, "The Gutenberg Galaxy," posited that the invention of the printing press and the subsequent mass production of books led to profound societal changes by altering the way humans perceive and interact with the world. Similarly, anti-tech movements, although employing digital means to communicate their concerns, often share a concern about the transformative effects of technology on society. While McLuhan's focus was on the impact of print technology, his insights about the profound cultural shifts resulting from new modes of communication resonate with the anxieties of anti-tech movements. These movements are essentially expressing a contemporary version of McLuhan's concern about the influence of technology on human culture, although their focus has shifted to the digital age. In essence, they carry forward a tradition of critically examining the impact of technology on society, echoing the themes McLuhan explored decades ago.

Furthermore, McLuhan's work highlighted the power of the medium itself in shaping thought and perception. He argued that the medium through which information is conveyed is as important as the content it carries. Anti-tech movements often share this concern, emphasizing that the very technology through which we communicate can have profound implications for individual freedoms, privacy, and the power dynamics of society. For instance, concerns about surveillance capitalism, data privacy, and the manipulation of information in the digital era reverberates McLuhan's assertion that the medium can shape and manipulate the message. These movements are essentially expanding upon McLuhan's ideas and predictions by applying them to the digital realm and advocating for ethical and responsible use of technology.

2.5 Artificial Intelligence and an immense task

The latter part of the last sentence could be the motto for the latest, but one of the most crucial topics, which is the public perception and opposition of Artificial Intelligence (AI). Many may think that AI is one of the newest inventions when it comes to technology, however, it was founded as a field of study in 1956, but could not catch on until 2012, when deep learning was first introduced. Recent events caused public uproar and anxiety about the widespread presence of AI, with many debating, whether this will result in a takeover as seen in several movies, although AI was all around us in the last half a decade. We might not even be aware of the fact that we use AI everyday, since the search engines we manage or chess robots we play against are all a form of Artificial Intelligence. Getting recommendation from Netflix after browsing for 20 minutes is the result of an AI comparing our recent activities to an unfathomable amount of content, then finding the best possible match for our taste. The aims of traditional machine learning include reasoning, knowledge presentation, planning, perception and many more sub-fields (Nilsson, 1998). AI has not been a widely concerning phenomenon up until the point, when people got exposed to the fact that it is part of their everyday lives. Just as the automobiles were not deemed dangerous until they became

obtainable for the general population. Concerns started to arise as fatalities related to car accidents began to increase, ultimately culminating in protest in favour of traffic safety. Anti-car movements are not discussed widely enough, however there have been numerous precedents in the Netherlands and the United States as well (for example in Philadelphia in 1953).

The public communication constructed a narrative and influenced the masses, thus creating a firm idea of what Artificial Intelligence is, and how it will affect our lives in the coming years. Experts such as Stephen Hawking, Yuval Noah Harari, Elon Musk have debated the detrimental, harmful effects of AI and urged people to approach the topic with caution. Stephen Hawking, one of the most high-profile physicists, stated at a WebSummit in 2017; “Success in creating effective AI, could be the biggest event in the history of our civilization. Or the worst. We just don’t know. So, we cannot know if we will be infinitely helped by AI, or ignored by it and side-lined, or conceivably destroyed by it,” (Kharpal, 2017). Such statement from someone, whose communication relies on technology itself, should at least be taken into consideration. Once again, a group of experts are opposing not technology and progress itself, but the implementation and consequences of it. Concerns originate from principles and the already discussed crisis-sense, however, in this instance experts also weigh in. Now it is not just the affected workers from the automatization of factories, but also the ones that are not directly involved. Looking back at the WUNC analysis, the commitment part is easily fulfilled by visible participation of said people. We have once again reached a point in our existence where we are met with an undeniably influential technological change, therefore masses form into groups and start to oppose the progress in an organized fashion. Social movements such as Stop Robot Killers argue on the same basis as many have before them; „Technology should be used to empower all people, not to reduce us – to stereotypes, labels, objects, or just a pattern of 1’s and 0’s.” (Akin et al., 2021). The alienation factor, which played a vital role in Marx’s concerns, emerge once again, as the fear of alienation and digital dehumanization creeps closer. Stop Robot Killers also oppose such technological advancement due to the lack of human essence, context, and consequence. These qualities are human qualities and if we fail to take them into consideration upon making a decision we will tread on highly dangerous territories. The movement also argues that there is little to no understanding of how AI works and what its capabilities are, especially bearing in mind the pace of its growth. We have reached a point where Elon Musk, one of the biggest technophiles on Earth, called for a 6 month pause on the development of AI. His concerns, again, the elimination of a considerable number of jobs, thus putting heaps of hardworking people out of work.

On November 1st, 2023, a summit convened to address the ongoing development of artificial intelligence, gathering 100 prominent figures from the realms of politics and business. Discussions during the summit encompassed a range of concerns, notably the potential for terrorists to exploit AI in the creation of bioweapons and the broader apprehension of humanity relinquishing control over technology. Nonetheless, a prevailing consensus emerged regarding the necessity of vigilantly supervising AI development. British Prime Minister Rishi Sunak advocated caution, emphasizing that excessive control might hinder innovation.

With this Safety Summit, the day and age at hand has been reached, hence, there is no room to delve deeper into social movements or technological advancement – at least, for the time being.

3. CONCLUSION

Upon a comprehensive review of historical instances featuring social movements opposing technological advancements, a discernible and straightforward connection emerges. Over the past two and a half centuries, virtually all major technological innovations have encountered some form of public outcry, with some instances even leading to organized opposition through social movements. These movements have manifested themselves irrespective of the historical era, the field of technological development, or the pre-existing ideologies of the affected individuals. Ranging from collective, direct actions to individual ideation, these movements have indelibly influenced the societal fabric and the channels through which we articulate discontent regarding technological progress.

Through the amalgamation of my findings, a recurring pattern has become evident. Technological progress invariably persists in our lives; however, for social movements to coalesce in opposition, a more substantial technological breakthrough is typically required. For example, inventions like the steam engine and Artificial Intelligence, alongside other transformative innovations, have incited considerable unrest among the populace. This unrest is rooted in deep-seated emotions of fear, anxiety, and insecurity, which tend to surface when individuals are confronted with ambiguity. Technology, uniquely, exists as a realm of human activity that often surpasses the comprehension of the average citizen beyond its rudimentary function. This knowledge gap often precipitates the emergence of apprehensions, further nurturing the fertile ground upon which social movements can take root.

By juxtaposing the theoretical framework against empirical observations, it becomes increasingly apparent that a cyclical pattern exists in the context of social movements opposing technological advancements. The psychological underpinnings, social movement theories, and historical case studies all converge to bolster the veracity of this hypothesis. Although the form and intensity of opposition may vary from one invention to another, the fact remains that opposition is a recurring theme. In contemporary society, we find ourselves grappling with increasingly intricate circumstances, yet the tools for progressive resistance have not evolved at the same pace as technology. We continue to rely on previously used forms for the assertion of interests of needs and desires. This analysis underscores the cyclical nature of resistance to technological innovations and highlights the enduring human inclination to resist change or challenge established paradigms. While technology continues its relentless march forward, the underlying psychological and societal factors that fuel opposition to new technologies persist, providing an enduring foundation for the emergence of social movements. While my hypothesis provides valuable insights into the dynamic relationship between technology, society and communication of interest, its veracity depends on a multitude of contextual factors and cannot be universally applied without nuance.

Historical examples illustrate the plausibility of this hypothesis. The Industrial Revolution, for instance, brought about the Luddite movement, characterized by workers' opposition to the mechanization of labour. More recently, concerns about the societal impact of Artificial Intelligence, automation, and data privacy have sparked debates and mobilized individuals and groups to express their apprehensions. These cases align with the notion that significant technological change tends to trigger resistance and social movements. However, not all technological advancements result in widespread social movements or opposition. The intensity and nature of the opposition can vary dramatically based on several factors. These include the perceived threats and opportunities associated with the technology, the level of understanding and familiarity within the affected population, and the strategies employed to address concerns. In some cases, the benefits of a technology may outweigh the drawbacks, leading to greater acceptance and minimal opposition. Moreover, cultural, political, and economic contexts play pivotal roles in shaping public response to technological change.

Furthermore, in the broader discourse on the relationship between technology and society, anti-tech ideologies play a significant role. Movements such as anarcho-primitivism, eco-socialism, and green anarchism offer a distinct perspective on the impact of technology on the human condition and the environment. These ideologies often reject the pervasive role of technology in modern life, emphasizing a return to simpler, more sustainable ways of living. They argue that the relentless pursuit of technological progress has led to ecological crises, alienation, and social inequalities. While these ideologies may not always manifest as formal social movements, they represent a philosophical undercurrent that questions the fundamental trajectory of technological advancement. The existence of such ideologies adds an additional layer of complexity to the relationship between society and technology, and their critiques further highlight the importance of considering a range of perspectives in understanding the dynamics of opposition to technological change.

While technology continues its brisk growth, the concerned voices get louder, however their forms of resistance do not seem to advance. Communicating the dissatisfaction, dismay, and anxiety, while trying to achieve change is a challenging task. Action will continue to be the dominant way of expressing one's feelings towards the scientific improvements, however, more and more well-constructed and organized groups emerge. These organizations will be able to voice the people's disapproval with their campaigns and platforms. Protests might be the most crucial way of communicating the public's views, moreover, this form of communication could be the act that will help achieving meaningful change.

In summary, while the hypothesis under consideration is a valuable framework for understanding the relationship between technology and society, its applicability is context specific. Technological advancements will continue to shape our world, and the response to these innovations will depend on a complex interplay of factors. To better understand and predict the emergence of social movements in response to technological change, scholars and researchers should consider the intricate interplay of technological characteristics, societal dynamics, and the strategies employed to address concerns. As history has shown, the human response to technological progress is not monolithic, and the outcome may vary considerably from one technological invention to another.

4. SUMMARY

My paper aims to find similarities and correlations between the communication of social movements opposing technological growth. To find logical connections and draw a satisfactory conclusion I have made it my task to answer the following research questions and hypotheses; Can we see a periodical repetition of social movements in relation to the introduction of new technological inventions, moreover, are these social movements able to combat technological growth in a progressive manner? There's a prevailing suspicion, which serves as my third research questions, that significant technological leaps can elicit feelings of fear, anxiety, and resistance among the general public.

Methodologically, this study relies on a combination of secondary research, desk research, and comprehensive content analysis. In lieu of a chronological approach to scrutinizing social movements, the research strategy is oriented towards the discernment of logical interrelationships among anti-technology social movements. The primary objective is to identify commonalities and correlations across historical instances, thereby substantiating the recurring nature of these phenomena. The examination entails a critical analysis of scholarly texts, research papers, and reputable literature sources related to social movements and communication, including works by notable figures such as Kropotkin, Kaczynski, and Tilly. Upon thorough examination of a vast variety of literature I will conclude my paper by summarizing my thoughts in the conclusion segment.

As for the result I have been able to find commonalities and correlations between said social movements and their communication, however, the context of the technological invention and its introduction plays a crucial part on the public's reaction. Nonetheless a cyclical pattern seems to exist in the context of social movements. While technology continues its brisk growth, the concerned voices get louder, however their forms of resistance do not seem to advance, meaning that the communication of dissatisfaction did not progress as rapidly as technology did.

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