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Exploring Artificial Intelligence-Mediated Communication (AIMC) as a sub-field of Communication Studies. A Textual Examination

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Exploring Artificial Intelligence-Mediated Communication (AIMC) as a sub-field of

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"Exploring Artificial Intelligence-Mediated Communication (AIMC) as a sub-field of Communication Studies. A Textual Examination", a thesis, by Md Nurul Karim Bhuiyan has been examined and approved.

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Abstract

Exploring Artificial Intelligence-Mediated Communication (AIMC) as a sub-field of Communication Studies? A Textual Examination.

Md Nurul Karim Bhuiyan, Minnesota State University, Mankato, December 2020.

From the book "Speaking into the Air: A History of the Idea of Communication," written by John Durham Peters, we understand a notion about developing one's destiny; people have the freedom to choose multiple paths to follow (Peters, 2012). If we reject this idea, it is also easy for people to come up with distinct explanations. Even though the meaning of the same issues might vary subject to who is interpreting them, the primary concepts can be interpreted as more or less the same. If we study these two--"artificial intelligence" and "communication"- simultaneously, we can assume some characteristics. Thus, this project analyzes three different scholarly articles to extrapolate the real meaning of AIMC, and a variety of approaches, and devise how artificial intelligence, eventually computers or programs, can communicate while incorporating artificial intelligence. Methodologically, therefore, the method of textual analysis has been adopted to highlight the area of communication appropriately, and this undertaking undoubtedly unlock the horizon of comprehension of this type of communication in communication studies.

Key Words: *Artificial Intelligence (AI), Artificial Intelligence-Mediated Communication (AIMC), Communication, Human Communication, Computer Mediated-Communication (CMC), Communication Studies.*

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Chapter One

Introduction

Poole, Mackworth, and Goebel (1998) defined Artificial Intelligence (AI) as an activity of "intelligent agents." While Russell, Norvig, and Canny (2003) distinguished this development of intelligence in the realm of science and knowledge rather than humans as "rational agents." Scientists confirmed that these intelligence agents were introduced by artificially demonstrating intelligence competence by machine, distinct from the natural intellect shown by human beings and animals. In 1950, in a seminal presentation, Alan Turing explained the AI practice as "machine learning" (Turing, 2009). From the inception of artificial intelligence, scholars observed this machine learning process as the processes of communication and "deep learning" (Schmidhuber, 2015; Bengio, Courville, & Vincent, 2013; and LeCun, Bengio, & Hinton, 2015). They also termed this deep learning as "deep structured learning," which is part of the machine learning procedure established on artificial nervous system networks. Chakrabarti, Ester, Fayyad, Gehrke, Han, Morishita, and Wang (2006) noticed that scientists develop their studies to discover patterns from "big-data studies" in collaboration with artificial intelligence, statistics, database, and machine learning. It is a method of analysis to learn knowledge from data mining. Thus, scientists were developing approaches and inferring meanings from a study on a high volume of data, and they are so happy to call the branch of knowledge "data learning." Nowadays, "in applied AI or 'machine learning,' methods such as neural networks are used to train computers to perform tasks without human intervention" (Perrotta, & Selwyn, 2020, p. 251). Kankanhalli (2019) admitted that

people getting their products and services using machines of smart government bodies along with other public and private organizations. This men-machine transaction and communication have obtained a new tag by the communication scholars, "man-machine interaction," and opened a new avenue for communication studies. That is why Guzman (2020) discovered a new area of research in communication, as he mentioned: "human-machine communication (HMC)" (p. 70) and the functional dimensions of AI is sensing by people as a communicator. Service providers and service receivers deliver and allow services disallowing interactions with humans, called "cooperation without communication," supported by Berg (1955). These AI-based communication ideas establish a new area of importance in the modern techno-based world, just receding traditional communication concepts.

The introduction of traditional communication reminds us of the year 1948, when Claude Shannon, an American mathematician, electrical engineer, and cryptographer and also famous for the "information theory," explained a communication model to describe human communication (Shannon, & Weaver, 1964) and published it with Warren Weaver, also an American scientist, mathematician, and science administrator. The fundamental concepts of the model give us a nuanced interpretation that communication is a process of sending (sender) and receiving (receiver) messages (Craig,1999). Twelve years later, in 1960, David Berlo extended the model—sender-message-channel-receiver (SMCR) (Berlo, 1965; Cobley, & Schulz, 2013). In 1956, Wilbur Schramm offered a model that distinguished many communication variables: "transmitter, encoding, media, decoding, and receiver" (Chen, 2013).

Apart from these traditional human communication models, we have encountered new communication constructs in the technologically advanced communication realm with machines and robots obliging jobs like humans (Pedersen, 2009). To make the new kind of communication intent successful, Mechanical engineering, Computer engineering, Electrical engineering, and Mathematics worked collectively and successfully developed robots to perform duties earlier performed by humans, devising robotic communication. The main objective of introducing robotics is to establish machines with intelligence to assist people in everyday life. Robotics integrates achievements from information engineering, computer engineering, mechanical engineering, electronic engineering, communication, etc.

Scholars from different parts -- science, humanities, and social sciences analyzed intelligence other than human intelligence at various juncture and labeled it differently. However, social science and humanities branches develop their AI studies in different designs and diverse terms, in the knowledge domain. Their analysis demonstrated mostly that the AI method is a process of communication at best. Thus, how scholars from the field of Communication Studies view this communication perception under various names is my study's great attention to find out the field as an area of communication. Hence, this study will focus on how communication explores and understands artificial intelligence-mediated communication (AIMC) as a sub-field of communication studies. For this study's progression, a textual analysis was systematically used to study several scholarly essays to define artificial intelligence in a border manner and explore the area of AIMC from different perspectives. I intensely believe this study will significantly help

reinforce the approach of AIMC in the academia of communication for future scholars and learners.

In the contemporary world, simply machine is enough to guide men without men's mediation and instruction. Cooperation is possible without communication. A conversation could take place in the absence of interactions. Without an assistant, assistance is in human hands. Driving is not far away, without having a physical driver. Things can be done as per thoughts about what a human thinks. Cleaning, cooking, conversation, controlling, counseling, and cultivating many things are now possible just doing a click or command! How is the human-made world doing things possible without having communication between humans? Instead of human contact, the new interface is the new reality in the human world, denying social interactions. All those things are not imaginary or elusive in the present world. The Research suggests that people have experienced a new form of machine communication in the modern world instead of traditional communication to identify disease, teach, assist in road communication, household management, and do many other jobs. What is happening is communication between machine and machine or men and machine or machine and men, or contact is developed following different forms of mechanisms. Scholars identified this communication in many ways and trademarked it as Artificial Intelligence-Mediated Communication (AIMC). This study first addresses the intriguing areas of Artificial Intelligence Mediated Communication (AIMC) that defined the characteristics of AIMC. Secondly, it looked for the definitive aspects of its definition of understanding the AI-mediated communication precisely and academically. This study also drove to explore

the factors closely associated with identifying AI-mediated communication in phases. The perplexity between men and machines has been able to get a comprehensive answer from the experiment. The textual analysis method under themes looked into man-to-man interaction, man-to-machine communication, and AI-Mediated Communication and how it is essential in the modern world's hi-tech society. Thus, this research builds upon the study of communications between man and machine, Media richness theory, and Interaction theory to make the work more practical.

Rationale

The research I found in this field seems to be concerned with communication mostly. Communication is divided into interpersonal communication, intrapersonal communication, group communication, organizational communication, machine-to-human communication, and other types. Most studies focused on human interaction, which requires human intelligence to communicate, and man-machine interaction requires artificial intelligence. In today's technologically sophisticated world, we communicate with one another either through human intelligence or artificial intelligence, which is a human-created technology. According to the Siri Statistics (Bera, 2019), over a billion devices feature voice assistance services today. Voice assistance is most commonly used via smartphone, after that in cars, and finally in smart speakers. Apple, Google, Amazon, and Microsoft are four of the world's most prominent providers of voice assistants.

Above Avalon (2019) reveals a fascinating truth since the number of I-phones in use has exceeded 900 million. There is some leeway in these figures for people's extremely rare happenstances using more than one I-phone. Apple also made information available; as of January 2019, 1.4 billion active devices have been installed. That figure is over one billion, as one of the four techno-giants, which is hugely significant. Because of this high volume of people interacting with each other through artificial intelligence, I found it most meaningful for the academic of communication.

For learners, this study generates a complete catalog of artificial intelligence-mediated communication that is commonly practiced in the modern technology-driven recent world. Communication experts and policymakers could consider what steps should be taken in addressing such a communication phenomenon. Organizations in this field will also have the opportunity to shape and reshape their thoughts and ideas with first-hand ideas. Future researchers and scholars would benefit from these new avenues.

I am a government official, and I am working to make life better for people, particularly the Bangladesh citizens. As a result of my reflexivity and limitations, I do not consider myself new in the field of communication, but I am entirely new to the area of artificial-intelligence mediated communication. This, I believe, would allow me to conduct the research accurately overcoming limitations. The study will give me more opportunities to explore the field and to expand my knowledge as well.

A Meaningful Study for a Government Official

The findings from this study will indeed stimulate the thinking of future communication students and researchers. At the same time, this research will personally lead me to a great innovation with which I can contribute to improving the quality of life of my country's people for whom I am working. While conducting the research, I understood how the smart government concept could be established through the communication of artificial intelligence. From the inception of this smart government, the idea is that people can be given more services with the help of technology in less time without human intervention. For me, this research is time befitting; while my government has been working for the last two decades to build a digital Bangladesh to ensure hassle and corruption-free public services. As a public servant of Bangladesh, if I can apply the knowledge gained from this research, I can be sure that I will be a pioneer in successfully implementing the concept of smart government in Bangladesh. As a third world nation, irregularities and corruption are still the two biggest obstacles to improving people's quality of life. The primary and foremost goal of a smart government is to free people from these two curses. Thus, my most profound confidence, this knowledge, enlightened me and exhibited a new way to serve the country as well.

Research Questions

The qualitative study has explored Artificial Intelligence-Mediated Communication in a scholarly way that finally supports it to become an independent discipline to study within Communication Studies. Five research questions mainly guided

this examination and critical analysis of these reports. Specifically, these questions are: (1) What is the proper characterization of Artificial Intelligence (AI)? (2) What is the appropriate description of Artificial Intelligence-Mediated Communication (AIMC)? (3) What are the factors playing vital roles to know AIMC? (4) Who regulates communication, man or machine? (5) How does Artificial Intelligence negotiate interaction using technologies? This textual study sets out to address these research questions at developing a critical investigation.

Precise Chapters in Thesis

The first chapter of this thesis provides an introduction to the topic. The thesis aims to identify and analyze Artificial Intelligence-Mediated Communication (AIMC) as a Communication Studies sub-field. The introduction explained the purpose and justification of the research topic. I next provide a brief on communication mediated by Artificial Intelligence, at the same time presenting the concept of communication as we fundamentally know it as well as outlining the realities of the communication field in the Information Age. The chapter has explained the importance of the study and the purpose of the thesis. Furthermore, the introduction defines the research questions that I have posed.

Chapter Two provides a literature review, which explores the introduction of Artificial Intelligence and the relationship between Communication and Artificial Intelligence since its inception. The literature review shows previous research related to the topic of interest and explains why there is a gap in the academic understanding of the

issue. This section presents studies and theoretical perspectives regarding definitions of various facets of Communication, Human Communication, and computer-mediated communication and discusses challenges in communication studies, nuances, and functionalities.

The third chapter, the methods section, describes how I conducted this qualitative study; textual analysis. The rationale behind the use of textual analysis, which texts were examined, and the textual examination process were all described.

Chapter four, the results, describes the data collected throughout the study. The data is organized and presented in this section. Themes/ideas are presented in this chapter, along with some quotations from the original texts. Results are analyzed with reference to previous literature where appropriate.

The final chapter summarizes the findings of the study. The discussion explains the implications of the results. This section revisits voids in the research attempting to fill them.

Chapter Two

Literature Review

This literature review will seek to discuss how machines become the agents (Poole, Mackworth, & Goebel,1998; Russell, Norvig, & Canny, 2003) of communication, as well as acting like a human being, by using intelligence like the intelligence posed by humans. In order to make the literature more precise, I designed my literature review under four of these areas. Firstly, we must begin our investigation with communication mediated by AI, which is why we start by examining AI's history and exploring its communication relationship. In that case, we must explore human communication as a subdivision of communication. Human communication demanded to know about the AIMC broadly in order to explore it. Indeed, machine communication emerged from the computer that is why computer-mediated communication (Bakardjieva, 2016) is within our list.

Birth of AI and Kinship with Communication

Let us look back to the history of the birth of Artificial Intelligence (AI). Haenlein and Kaplan (2019) confirmed that the exact time and date are difficult to mark for the invention of AI. In their brief history of AI, they pointed to the 1940s, especially 1942, as the root of AI. At that time, Isaac Asimov, an American science fiction writer, wrote his fiction "Runaround". The "Runaround," is a story of an intelligent robot imagined by engineers Gregory Powell and Michael Donvan, was centered on three laws of robotics. These are "(1) A robot may not injure a human being or, through inaction, allow a human

being to come to harm. (2) A robot must obey the orders given to it by human beings except where such orders would conflict with the First Law. (3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws (Schmarzo, 2017)." Haenlein and Kaplan (2019) claimed that Asimov's work was the foundation stone for developing AI and generates inspiration for scientists later in robotics fields, computer science, and Artificial Intelligence. Their history also tributed to Marvin Minsky, an American cognitive scientist and famous for co-founding MIT's AI laboratory. However, AI research was born at the workshop held at Dartmouth College in 1956 (Crevier,1993). Here the term "Artificial Intelligence" was coined by John McCarthy to distinguish the field (McCarthy, 1988) and attended by Allen Newell, Herbert Simon, John McCarthy, Marvin Minsky, and Arthur Samuel, those became the founders and leaders of AI research (Russell & Norvig, 2003).

According to Russell and Norvig (2003), scientists notedly Allen Newell, Herbert Simon, John McCarthy, Marvin Minsky, and Arthur Samuel and their students produced programs that were described as astonishing by news media (p.18). These programs prove that computers have mastered checkers strategies (Schaeffer, 2009) and were reported to play better than an average human (Samuel, 1959), solve algebra word problems, prove logical theorems, and English speaking (Wilson, 2019). National Research Council (1999) report confirmed that the American Defense Department allocates funds massively in the middle of 1960 for AI and, laboratories were set up (Cowan, 1985). worldwide. Though earlier, they were frustrated about funding and other logical supports, after confirmation of funds, AI's founders were becoming confident

about the prospect. In 1960, Herbert Simon expressed his assertiveness. He made a prediction, "machines will be capable, within twenty years, of doing any work a man can do" (Simon, 1965, p.96). Marvin Minsky supported Simon's thought and wrote, "within a generation, the problem of creating 'artificial intelligence' will substantially be solved" (Minsky, 1967, p. 109).

Haenlein and Kaplan (2019) familiarize us with more about the English mathematician Alan Turing's fictional works, who finally formed a code-breaking machine and named it "The Bombe for the British Government". The machine was designed to reveal the German army's Enigma code in the Second World War. This Bombe is historically recognized as the first working electro-mechanical computer, which weighed nearly a ton and ran 7 feet by 6 feet by 2 feet large. Powerfully, the Bombe was capable of breaking the Enigma code. The task was earlier unattainable to even the best human mathematicians, making Turing wonder about such machines' intelligence. In 1950, he published his seminal article "Computing Machinery and Intelligence" (Turing, 1950), where he explained how to create intelligent machines and how to evaluate their intelligence. The Turing Test has been acknowledged as a milestone in identifying the intelligence of an artificial system. His argument mainly sets an example to ascertain a machine on why to consider as intelligent. His reasoning is "if a human is interacting with another human and a machine and unable to distinguish the machine from the human, then the machine is said to be intelligent" (Haenlein, 2019). After that, almost six years, in 1956, Marvin Minsky and John McCarthy introduced the expression Artificial Intelligence at the Dartmouth Summer Research Project on Artificial

Intelligence (DSRPAI) at Dartmouth College (Haenlein and Kaplan, 2019). They admitted that this workshop marked the beginning of good days for AI and was funded by the Rockefeller Foundation, and they were considered the founding fathers of AI. Reuniting researchers from various fields and creating new research areas was the main objective of the almost two-month-long DSRPAI to build intelligent agents or rational agents or machines capable of imitating human intelligence. This significant workshop was taken part by noted scientists and researchers, notably Nathaniel Rochester, a famous computer scientist who designed the first commercial-scientific computer, IBM 701, and Claude Shannon, mathematician and known for founding Information Theory.

From Dartmouth College to the recent pandemic world, the world is trying to adjust to strange human behaviors spurred by the invention of today's technology and the new norm or the so-called new normal situation. Cornell University's (2020) recent study found that daily life during the pandemic means social distancing and finding new ways to remotely connect with friends, family, and co-workers through online communication. As people communicate online and by text, artificial intelligence plays a significant role in keeping conversations on track. People had more trust in artificially intelligent conversation initiatives than they did in the people they were talking to. "AI as a Moral Crumple Zone: The Effects of Mediated AI Communication on Attribution and Trust," an article published by the journal of Computers in Human Behavior, unveiled this AIMC truth. Turing's (1950) Game Imitation, the recent auto spelling of Grammarly (2020), and "smart replies, auto-completion, and auto-responses' (Hancock, Naaman, and Levy, 2020, p.90) all those things are addressing the ability to communicate. By putting this

question, "Can machines think?"(Gunkel, 2012, p.4) Turing starting this point. Turing (2009) opens his essay "Computing Machinery and Intelligence" by proposing to consider whether machines can be intelligent, which means that machines can communicate? I believed that Turing understands that the ability to communicate lies at the heart of human thinking ability. The point made here is that the original problem's demands that gave birth to the Turing Machine's notion turned out to be quite ambiguous and unnecessarily complicated. However, the idea of thinking means communicating ability is far more understandable.

Russell and Norvig (2010) compare artificial intelligence (AI) with rationality. This agent acts based on logic and gives it an agent-centric definition: AI is the study of "human-level intelligence in computers" (p. 4). This definition of what constitutes artificial intelligence is all about what type of activities the agent can carry out. Considering the description, I do machine learning generally refers to computational procedures that involve algorithms, command learning techniques, natural language processing, and other means that enhance an individual's communication success by operating on a person's behalf. The computational agent can analyze a variety of inputs, including messages written by people, communications history, individual's information, or other sources of data. The instrument may then provide suggestions, augmented, modified, or even newly created messages to achieve an anticipated effect. Scholars prior defined this activity as computer-mediated communication as the study of the impact of communication between people using network-connected digital devices to exchange information; for example, electronic mail and short messaging system across social and

geophysical distance, and video conferencing (Thurlow, Lengel, and Tomic, 2004). That is why Walther and Parks (2002) emphasized the importance of researching human-to-human communication's interpersonal dynamics in the digital era, mainly through technology.

Between the 1950s to 1970s, there is immense effort into researching Artificial Intelligence. The machine then used machine learning in limited areas to mathematical problems and some simple reasoning. In 1980, after the advent of expert systems, it was easier to accomplish high-level works. In the 1990s, computer science's introduction kicked off artificial intelligence development, especially in applied industries, delighting people with its innovative applications. Although fear strikes humankind about life's existence, different communication types mediated by Artificial Intelligence are more popular with humans. Especially in telephone communication, personal assistance, driving, and route navigation help people around the world. In addition to communication assistance mediated by Artificial Intelligence and application, people might interact with another robot called Pepper is able to read human emotion. We found Hancock, Naaman, and Levy (2020), who defines AIMC: An issue of interpersonal communication where a go-between communicates in lieu of communicator "by modifying, augmenting, or generating messages to accomplish communication goals (p.89)." However, the question of how technology is shaping human communication remains a crucial area to be studied within the field of communication to settle the issue. Next, throughout this literature review, my goal will be to carefully analyze and review the idea of communication, the

concept of human communication, and computer-mediated communication, which then propagates the idea of AIMC.

Understanding the Idea of Communication

The concept of communication can be traced back to 1949 when Claude Shannon and Warren Weaver outlined the "sender-channel-receiver" model in an attempt to define communication in the radio and telecommunications era mainly, intending to gain a better understanding of its inner workings. This well-known model can be described as the simplest form of a philosophy based upon the idea that communication is the means of ferrying information. Transaction of information could be defined as communication, a pretty easy way to identify; however, Littlejohn and Foss (2005) opined that "communication is not easy to define" (p. 3). The Latin phrase "communicare" is the origin of communication; the meaning is "to share" (Harper, 2001). Meaning is communicated from one entity or group to another through mutually understood signs, symbols, and semiotic rules. From Harper's denotation, this study could realize that communication is the exchange of information by specific means. The system development communication happens when requestors request information and response-givers respond to those requests.

However, Clevenger (1991) pushed the argument forwards by suggesting that the continuing problem in defining communication for scholarly or scientific purposes stems from the fact that the verb 'to communicate' is well established in the common lexicon. "Indeed, it is one of the most overworked terms in the English language (Clevenger,1991,

p.3)." In terms of communication, academics have made many attempts to establish a single definition with mixed results. Yet I will make clear, even though several attempts to find a single meaning have been made, it is impossible to have one, and the whole exercise proves not much to be fruitful.

We acknowledge Frank Dance (1970), who took a significant step towards clarifying this conflicted concept by sketching several elements used to distinguish communication. He found three points of "critical conceptual differentiation" that form the basic dimensions of interpersonal communication. The first element is concerned with the level of abstraction or observation. A few definitions are broad and inclusive; others are restrictive. For example, the description of communication as "the process that links discontinuous parts of the living world to one another" is too general (Heath & Bryant, 2013). By contrast, communication, which, according to Gove (1986), is commonly defined as a system of communicating for information and orders.

The second perception of Dance, I want to talk about here is intentionality. While some definitions only include messages meant to pass along a purposeful message, others do not have this limitation. In the following example mentioned by Miller (1966), this definition provides a clear intention to the listener. "Any case where a source desires to affect the nation's population through their newspapers, television, and radio, and with conscious intent for behavioral change. Cartier (1959) claimed a definition that does not contain the issue of intention.

There are three dimensions of definitions by which communication can be distinguished. The third dimension is the normative judgment mentioned by Dance. Most illustrations consist of two statements, one of which will be a statement of success, effectiveness, or accuracy, while the other one will be a statement of intent. Besides that, this definition states that communication is successful when "humans successfully transmit a thought or idea from a source to a receiver using an agreed-upon set of symbols (Hoben, 1954). The assumption in this definition of rhetoric is that thoughts and ideas could successfully be exchanged for communication. Another definition does not judge whether the outcome is successful or not: communication, as described by Berelson and Steiner (1964), is the transmission of information. Evidently, there is information being transmitted, but it is not necessarily being received or understood. While the debates over what communication is and the dimensions that characterize it continue, it is important to note that contemporary communication also encompasses electronic and digital media. Dance's conclusion later stated, "We are trying to put too much responsibility on the concept of 'communication' to serve in all these different traditions (Dance,1970). The author calls for a family of conceptualization for communication rather than a single definition derived from an individual theory or idea. These definitional issues are important, as we will recall from Peter Andersen: They are not trivial, as while there is not a right or wrong perspective on defining the body of knowledge itself, the choices we make regarding this definition nonetheless have a great impact on how we develop instructional activities (Andersen, 1991). These perspectives allow scholars to launch themselves down various theoretical trajectories, are caused by

predisposing them to ask specific inquiries, or even set them up to carry various communication examinations. The essence of this example is that many outlines have different purposes and allow scholars to concentrate in different ways.

Understanding Human Communication (HC)

Human Communication, or Anthroposmiotics, is a division of the science department that pays attention to how humans create and interpret communicative expressions. Human communication ultimately emerges from shared intentions and cooperative behavior. Apparently, humans are equipped with communication abilities that other animals do not have. In my mind, the examples demonstrate being able to communicate aspects like time and place. According to Tomasello (2010), humans communicate to demand bilateral assistance, pass information, and exchange views to bond with others. Clark (1996) illustrated human communication as a joint social activity. Communication can be characterized as a collaborative activity that depends mostly on getting the content out and performing reasoning in the exchanges by keeping the typical attention and experiencing collective knowledge related to the past.

Fundamentally, various ways of communicating directly verbally or non-verbally can be classified in multiple ways, which have been further divided into two primary categories of relational communication and rhetorical communication. The main center of attention of rhetorical communication is influence study, a subject also important in rhetorical theory. While the art of persuasion, as expressed through rhetorical theory, is what the study of rhetorical communication is essentially all about. The relational

approach focuses on the study of communication from an interactional perspective; two or more people interact to reach a common view. Rhetoric was originally developed more than two thousand years ago to help people prove their claims in a court of law; even today, as it was years ago, persuasion is an important term in this practice of communication. The famous philosopher Aristotle declared that persuasive rhetoric is constructed on argumentation. As clarified by scholars of oratory, rhetoric contains the art of persuasion wherein one party often assumes the dominant role, and the other party mostly assumes the submissive role. Even though the rhetorical approach stems from Western cultures, its roots can also be seen in Eastern cultures. As it is a well-known fact that westerns control developed values for cooperation, this is the very reason why they would persuade more toward an interactive approach in comparison to eastern cultures. As Stack and Salwen (2014) expressed, "maintaining valued relationships is generally considered more important than exerting influence and control over others" (p. 112). It is believed that "the study of human communication today is more diversified than ever before in its history" (Stacks and Salwen, 2014, p. 36).

Human communication in the workplace is mainly to get the job done through group work. People need to argue and criticize each other if they want to find the most effective solutions. Still, they also need to maintain good relationships as this is needed to work together towards achieving shared goals. One example of this is the tactic of saving face.

Humans communicate through speech, which is their primary means of communication. For example, Chimpanzees are considered the nearest relatives to human

being, but they cannot talk. Though, Chimpanzees are the closest living species to homo sapiens. According to genetic and evolutionary terms, chimpanzees are not closely related to gorillas or other apes but are more closely related to humans. We face a puzzle when we try to contemplate our species' biological nature and development because even though a Chimpanzee may learn speech if he is raised in a social house with all the human-environmental input like a normal human baby, a Chimpanzee could not acquire vocabulary no matter what. Research has failed to establish that chimpanzees can ever become truly proficient at spoken language. For example, Chimps nursed in a human like interaction with humans have completely unsuccessful to acquire speech, in spite of their fast growth in many cognitive. It has been discovered that each average human being is born with the capability to rapidly and unerringly acquire their native language, with minimum plain imparting. In contrast, no non-human primate has ever naturally produced even a word of the people language (Fitch, 2010). However, in the recent modern world, a machine can talk, and a machine can think and act like a human; this is considering one of the best breakthroughs in human communication history. Scholars concentrated on defining the human-machine communication as well as understanding the communication that is mediated by an intelligence generated artificially.

In a broader sense, human communication represents a number of intriguing areas, like interpersonal communication, intrapersonal communication, nonverbal communication, verbal communication, writing communication, mass media, telecommunications, organizational communication, cross-cultural communication, machine communication, and so on.

Understanding Computer-Mediated Communication (CMC)

As explained by Bakardjieva (2016), the definition of computer-mediated communication can be relatively straightforward; "Computer-mediated communication (CMC) referred to a wide range of communication processes involving individuals or groups and realized through computer technologies (p.1)." McQuail (2010) defines a different perspective identifying Computer-mediated communication (CMC) as a critical component of human communication accomplished using a pair or many electronic devices. Compared to the traditional sense, online communication more often refers to those forms of communication that happen by computer-mediated systems such as sudden messaging, electronic mail, chatting, online discussion, and social media sites such as Facebook or Twitter. Furthermore, research has also shown that it has been applied to other forms of text-based interaction, such as text messaging (Thurlow, Lengel, and Tomic, 2004). There is plenty of research on computer-mediated communication that focuses mainly on the social effects of different computer-supported communication technologies (CMC). The recent trend in contemporary research is to use the Internet for social networking to support social software. It was best described by Chin (2016) that computer-mediated communication comes in two forms: synchronic or concurrent and asynchronous or not in concurrent. In concurrent CMC occurs in real-time with other people occurs. All parties engage in communication at the same time, although they may not be required to be in the same place (Malone and Crumlish, 2009). An example of synchronous communication is a video chat or a FaceTime audio call. By contrast, asynchronous communication via computer, which complements traditional

face-to-face communication, forms the so-called asynchronous computer-mediated communication. In effect, the receiver will not immediately respond to the sender. Maximum outlines of communication mediated by computer or technology are asynchronous. Text messages and emails are examples of asynchronous communication.

A diverse set of scholars, including new generations of researchers from a variety of disciplines, studies phenomena falling under the general label of computer-mediated communication (CMC). For instance, many of the studies in this area investigate how people usage technologies and computers, digital gadgets, and social networking sites like, for example, Facebook (Walther, 1996, and Walther & Burgoon, 1992) to manage interpersonal interactions, form impressions, and form and maintain relationships. These studies often focused on the differences between how people behave when they are online and offline. However, contemporary research tends to move towards the view that CMC should be embedded in everyday life conditions and should not be studied as a separate specialty (Haythornthwaite, 2002 and Wellman, 2002). CMC researchers have also studied paralinguistic features, such as emoticons (Skovholt, Grønning, and Kankaanranta) and pragmatic rules (Garcia and Jacobs). Furthermore, the sequential analysis and talk organization have been added to our evaluation tools (Herring, 1999). Markman (2006) observed that many dialects of different social class, styles and fashions, records, or series of vocabularies aligned to environs had been considered differently. Language study in these contexts is typically based on CMC's text-based forms and is sometimes referred to as "computer-mediated discourse analysis (Herring, Barab, Kling, and Gray, 2004). "

In professional, social, and educational settings, people use computer-based tools in various ways, and it depends on the type of communication environment being used and the type of instruments involved. The field of computer-supported interaction to achieve collaboration can also be known as computer-supported collaboration systems and should be considered in the context of other forms of computer-mediated communication, such as instant messaging, blogs, and wikis.

CMC's popular means of communication include electronic-mail, audio-visual, or chatting by texts, conferencing including instant texting, the bulletin-board system, mailing list services, and MMOs. There are many changes in these settings with the advent of latest technologies. In the recent days blogs become more popular in the communication.

CMC's informational processing effects are evaluated and examined with other communication mediums by many attributes. These could be universal to all communication forms, including synchronicity, recordability, and anonymity. Associations between these features and many ways of communication vary broadly. Consider, for example, that instant messaging (IM) is inherently simultaneous but not persistent since you lose all the content if you close the dialog box unless you have a message log set up or manually copy-pasted the conversation. Electronic mails, tweets, and message boards tend to be asynchronous since response time varies and tends to be persistent since messages sent and received are saved. Coincidence, transience, multiple modalities, and the lack of universal codes of conduct are other CMC characteristics that separate it from other media (McQuail, 2010). CMC can overcome physical and social

obstacles other forms of communication cannot, allowing interpersonal interactions that

would not be possible otherwise.

It was hypothesized that the type of communication media in which people

choose to engage with each other influences the extent to which they disclose personal

information. Jiang, Bazarova, and Hancock (2013) demonstrated that higher self-

disclosure levels over face-to-face interaction characterize CMC. Self-disclosure has been

defined in various ways at different points in time but has most often been associated

with any verbal communication of personally relevant information, though not thought or

feeling, in order to maintain interpersonal relationships (Jiang, Bazarova, and Hancock,

2013). Part of the reason for this is such visual anonymity and because nonverbal cues

are absent, reducing concerns for losing a cheerful face. Based on Walther's hyper

personal communication model, computer-mediated communication is valuable in giving

both parties a better chance of better communication and a better first impression

(Walther, 1996). Besides, Ramirez and Zhang (2007) indicate that in comparison to face-

to-face communication, computer-mediated communication allows the relationship of the

individuals to become closer and play a vital role in the relationship's development

(Ghosh, Dastidar, Fay & Spence, 2015). Spitzberg (2006) reported skills such as

impression organization, self-disclosure, responsiveness, articulateness, composure, and

other qualifications contribute to computer-mediated communication (CMC) competence.

Concerningly, recent research suggests a substantial overlap between computer-mediated

and face-to-face communication skills, even though there is an excellent variety of online

communication devices (Bubas & Spitzberg, 2008). What counts as anonymity and

privacy and security varies depending on context and the particular program being used or the web page being browsed. Despite acknowledging the significance of considering these facts emotional and collective nature, most psychologists in the field recognize their technical limitations.

Maria Bakardjieva (2016) describes the evolution of the computer from a calculator to a device that facilitates communication first highlighted the possibilities of computer-mediated communication. Her description detailed about the background of CMC; at a time when the United States invested considerable interest in computers and was willing to help advance research and scientist Doug Engelbart, and Joseph Fogg of Stanford Research Institute, and C. R. Licklider and Robert Taylor of US Advanced Research Projects Agency (ARPA) instrumental this process. Douglas Engelbart's group developed the first test of NLS and Alan Kay at the Fall Joint Computer Conference at the Convention Center in San Francisco on December 9, 1968, presented. It is considered one of the earliest signs of online systems development as we know them today. The demonstration showcased various technical innovations in human-computer interaction while incorporating shared-screen collaboration between two participants separated by different sites and communicating over a network with audio and video interface. The demonstration was the culmination of an ambitious body of work Engelbart devoted himself to throughout the 1960s. As outlined by Engelbart (1962), his diverse schemes and innovations merged into a program targeted at developing ways to amplify the human intellect. Many scholars claim that Engelbart's ideas have galvanized researchers and engineers to embrace computer's potential to automate intellectual work. This insight

may improve the quality of life for individuals, government entities, and corporations all over the world.

Engelbart's conceptualization and the illustration of NLS system spurred another influential impulse regarding computers' promise to mediate and influence communication. At the late 1960s, Licklider and Robert Taylor, head of US ARPA's Information Processing Techniques Office (IPTO), were enormously influential in the so-called internet funding. At the same time, Engelbart's emphasis placed computer technology's functionalities for constructing and repossessing data within reach of individual knowledge workforces and groups. Licklider and Taylor (1968) claimed that electronically connected humans would become closer than people who know each other or people with equivalent incomes; a machine will make communication for people more effective than face to face. They termed it astonishing and said "It is our finding." They also added to mention "the broad, social scope opened up by computer communication such as online interactive communities that would be communities not of common location, but of common interest (p. 37–38)." Before the advent of the Internet, Licklider accurately forecasted the technology's potential for enabling "labile networks of networks." In his ARPA memo of August 1962, this significantly added that this versatility would greatly exceed professional applications. The stories recounted here of formative computer-interaction events are not intended to praise a few computer-communication pioneers' foresight. Through connections between government agencies, corporations, and research groups, concrete principles and techniques for linking computers passed to the commercial world. History shows that computer-mediated

communications involved many people in the project. Technology design and functioning were consciously crafted and adjusted in that social and political context in response to the social wants, functions, and performs of the time. During the 1960s, future networking needs and the practical needs of computer scientists and military planners concerned with broader issues were pressing at the same time. They faced the practical necessity of communicating efficiently and quickly because they were dispersed across so many elite research centers. The response was a program demonstrated by Ray Tomlinson in 1972, sending electronic messages within computers joined to the ARPANET. The Planning Network (PLANET), a communication tool designed for the ARPANET, was another computer conferencing system that technologists and administrators used to discuss topics and make decisions. Notepad eventually evolved out of PLANET, a more user-friendly system aimed at better supporting coordination in larger groups adopted across several industries.

As far back as this point in time, computer conferencing has been the predominant computer-mediated communication model and focuses on intense technical and social experimentation. Researchers social psychologist Roxanne Hiltz and computer engineer Murray Turoff wrote "The Network Nation". They forecast seismic changes in social roles and cultural practices. Ironic for its timing, published in 1978, between the invention of the personal computer and the Internet. It is the first work where the computer-mediated communication term was used and alluded to as a new form of human communication and a potential cultural game-changer. Several years before the publication, Turoff managed to develop an experimental computer-conferencing system

for the Office of Emergency Preparedness of the US Government. Ironically, during the height of the Nixon wage-price freeze, Turoff's conferencing system, developed initially as a side project, showed itself as an effective crisis management mechanism. Turoff's communication system proved to be exactly what officials and decision-makers required to talk, plan, and carry out their responses to the ever-changing situations. That was raised since it withstood trial, and greater time was invested in its ongoing construction and application. In the 1970s, a desire emerged amongst administrative and corporate players interested in conferencing platforms like EMISARI and how they might reinvent the emerging information economy and society's central processes. Later research supported by the US National Science Foundation led to the Electronic Information Exchange System (EIES), a system for conducting online seminars funded by the US National Science Foundation. Roxanne Hiltz and Murray Turoff's study on EIES brought into being a new academic field appropriately dubbed "computer-mediated communication." In that area, there was supposed to be an intersection between technological innovation and the search for answers to questions about our interaction with each other, human communication, computer-related technology, how actors responded to it, and how this would influence the creation of social interactions.

Discussion

Lu, Li, Chen, Kim and Serikawa (2018) deduced that AI technologies are capable of affecting many aspects of society and have now become a fundamental part of modern life. The most recent AI technology models based on information communication technology mainly depend on big data and not easy to use. Thus they are working to

develop intelligence cognition technology, otherwise known as beyond artificial intelligence. Artificial life with an imaginative function will be able to develop new ideas about events without having experienced them through this beyond artificial intelligence. Lu, Li, Chen, Kim and Serikawa's idea supporting, Shiatori, Takahashi, Sugawara, and Kinoshita (1992) advocate incorporating technologies from artificial intelligence into a designed system as a problem solver to construct a user-friendly communication system in computing. In their opinion, computers cannot solve many issues without being self-motivated. Although a design is done using the traditional method, it will remain inadequate for the same reason. As a result, this requires a special skill set. An artificial intelligence-based system provides several advantages: it allows modeling the communication systems design as a problem-solving task whose solution is the system's design. Skill designers can capture their design expertise in expert systems that will help designers with varying design expertise levels. The system they developed is called a knowledge-based design support system. This makes it easier for novices to build advanced communication systems like intelligent networks and large-scale distributed computing systems. Guzman and Lewis (2020) contend that virtual agents, social bots, and language generation software are the medium of interaction between people and artificial intelligence. However, they argue that communication theories tend to be limited to human-human communication, whereas communication technologies have been ignored. They draw a Human-Machine Communication (HMC) because people can understand Artificial Intelligence devices and recognize them as communicators. Artificial intelligence has relational dynamics and capacities to associate with people and

other beings. Artificial intelligence technologies create a surrounding of humans, machines, and communication. They claimed people converse with machines and use technology for answers, such as Alexa, Siri, Peer News Production Systems, and Writing. In the past, people used machines as a medium of communication to establish communication between them and to make it useful. However, due to the increasing power of artificial intelligence, devices are taking humans' place in human-to-human interaction. Although Ciobanu (2019) clarified the debate on artificial intelligence's benefits and downsides in the modernized world. However, it is now seen as a driver for economic growth and a factor in total productivity. Besides, there is much discussion about how artificial intelligence is displacing labor. Artificial intelligence has both positive and negative effects on competition in the market, remodeled human decisions, and threatens individual freedom and choice. For service rendering, Kankanhalli (2019) argues that artificial intelligence could aid government applications being developed using internet data and government bodies acquiring knowledge based on this; it is known as computer-mediated communication. The public sector can benefit immensely from artificial intelligence and the internet of things. Berendt, Littlejohn and Blakemore (2020) explore artificial intelligence is used not only in the public or private sector but also in the education sector to make the learning process easier, personalized, engaging, and inclusive. There are many artificial intelligence tools and platforms available for educating people in a more effective manner, online and virtually, for making this possible. For that reason, Artificial Intelligence defines it as the ability of a computer to perform duties that typically require human intelligence, such as visual perception,

speech recognition, decision making, and translating languages. Conversely, McKelvey and MacDonald (2019) discovered the Canadian government's assertion that said artificial intelligence is an ongoing revolution. It is inspiring new possibilities for innovation and is creating numerous new jobs in industries through big data. Artificial intelligence is an intersection between big data and automation. Machine learning, artificial intelligence that improves through experience, and one of the most discussed in Canada, requires massive amounts of training data to optimize its algorithms, a passive issue. After artificial intelligence is trained, it needs to be properly implemented. It should only be used when experts deem it acceptable. It is apparent from the discussion that some researches are focused on expanding the technology market, others on economic market control, and others on opening up better services. Some scholars choose the design because people wanted a change in their lives, while others decided on it for communication reasons. I consider AI communication as a sub-field of communication studies worth investigating to explore more about that communication field.

Chapter Three

Methodology

This study aimed to find out how Artificial Intelligence-Mediated Communication (AIMC) is and will be intriguing as an integral part of communication studies today and in the days to come. I use five research questions here to explore the field from different perspectives of the scholars involved. I mainly used scholarly texts to make connotations that significantly impacted figuring out an area of communication studies that requires more attention. To accomplish this, the five research questions guided my research and critical analysis. These are: (1) What is the proper characterization of Artificial Intelligence? (2) What is the appropriate description of Artificial Intelligence-Mediated Communication (AIMC)? (3) What are the factors playing vital roles to know AIMC? (4) Who is regulating communication, man or machine? (5) How does Artificial Intelligence negotiate interaction using technologies? This textual study sets out to address these research questions at developing a critical investigation.

This study aims to provide an interactivity lens for exploring artificial-intelligence mediated interfaces in the communication domain. I will also explore men and machine relationships and how they work in our personal and collective lives. For instance, when I am driving to return home with my seven-year-old son, he realized that his father is busy with driving, he needs to share his emotions and talk to someone, but a conversation with his father can be damaging that time. That is why, unmindfully, he initiates interaction with google; hey google, how are you? Where are you from? What is the distance

between the sun and earth? Which company producing the world's highest speedy racing car? Which song is on the top chart this week? Can you play this song for me? Google is continuously answering his questions. These are talking between my son and google. He is doing communication continuously because it is human nature that people cannot realize his existence without others' interactions. This communication or interaction is essential to him or her to announce the person's world's aliveness. First, people rely on natural communication; if they fail to find this out, they look to find an alternative option to initiate an interaction. This alternative option of communication potentially could be artificially created as if communicating with the human brain. This artificial human brain is mediating communication that is known as artificial intelligence.

My research methodology requires organizing a sample of documents that finally pertain to my investigation. The data sources comprise only scholarly articles published in communication journals. The area of essays was confined to the field of Artificial Intelligence-Mediated Communication in the field of communication studies. These, only US-based academic journal articles have been taken for this investigation. These tell about the sub-field of communication studies, assuming that it has a future communication challenge and the information and communication technology-driven world's prospects.

The criteria for selecting my research sample was firstly holistic, including all kinds of academic artifacts about communication. My research makes the source limited to only Artificial Intelligence Mediated-Communication. Additionally, my research is

narrow downing to academic journals or scholarly articles, mainly focusing on AI-Mediated Communication in communication publications.

Using the Textual Analysis method with the Media Richness Theory (MRT) and Interaction Theory (IT) lens, I analyze the scholarly artifacts using a thematic study approach. This approach is primarily qualitative. I also examine the common factors that contribute to figuring out the identification of artificial intelligence facilitated communication and the aspects closely associated with exploring this kind of communication agent's identity. For evaluating the messages, I analyze the texts using five categories (1) what the texts say, (2) what the authors intend to say and explain (3) what kind of inputs they tend to use to produce outputs to a certain audience (4) what sorts of realities the texts describes, and (5) what the structures they use to make a meaningful message are. My research, assessing their texts and findings, compile a list of understanding areas that significantly help to know the communication field, artificial intelligence, artificial intelligence communication, and the potentiality for futures.

Richard L. Daft and Robert H. Lengel's Media Richness Theory (MRT) (Daft,1986) has guided this communication research, and Shaun Gallagher's suggested proposition for social cognition that labeled as Interaction Theory (Gallagher, 2001) as well. Significantly, the MRT was originally designed for describing and assessing organizational communication media. Daft and Lengel presented the media richness theory in an attempt to reduce communication challenges such as unclear, confusing, conflicting messages of interpretations. Besides, other communication scholars have examined the idea in order to make it better. New media communication techniques, such

as video conferencing, social networking, and online coursework, have been incorporated into Media Richness Theory in recent years. Even though media richness refers to media choice rather than media use, empirical studies of the idea tend to focus on what medium a manager chooses to use, rather than the effects of that choice (Dennis & Kinney, 1998). Conversely, Gallagher maintained that mainstream mindreading approaches overlook the interactive contexts in which social cognition is embedded, thus ignoring embodied and extended processes engaged in interactions essential to social cognition (Trevarthen, 1979).

List of Essays Examined:

1. Hancock, J. T., Naaman, M., & Levy, K. (2020). AI-Mediated Communication: Definition, Research Agenda, and Ethical Considerations. Journal of Computer-Mediated Communication, 25(1), 89-100.

2. Guzman, A. L., & Lewis, S. C. (2020). Artificial intelligence and communication: A Human–Machine Communication research agenda. New Media & Society, 22(1), 70-86.

3. Gunkel, D. J. (2012). Communication and artificial intelligence: Opportunities and challenges for the 21st century. communication+ 1, 1(1), 1-25.

Chapter Four

Findings

The purpose of this chapter is to outline the findings from the study. The research

questions were used to answer the questions that constituted the research. This study

illustrates how most researchers view the idea of artificial intelligence-assisted

communication in the context of communication studies. I use textual analysis categories,

including (a) what the text says, (b) the writer's intention to say it, (c) the writer's input to

make the text comprehensive, (d) whatever the writer mentions, and (e) the structure and

cohesion schemes used by the writer. Following the answers of this textual categories, the

study examined the following five major areas in this essay: the general characterizations

of AI, the characterizations of AIMC, the factors involved in validating AIMC, along

with the questions of man versus machine, and also the differences of AI through the

application of technologies. Then in this chapter, I present the fundamental tenets of this

communication that were investigated after reading the three communications scholarly

articles.

AI is an Intelligent Agent of Communication

Scholars mostly evaluate Artificial Intelligence, which they call an "intelligent

agent" to operate as a replacement for human intelligence. Hancock, Naaman, and Levy

(2020) examine artificial intelligence's behavior to characterize artificial intelligence

explicitly. They utilize the interpretation while studying the definition of AI from the

description of Russell and Norvig (2010), who identifies as a computational "rational

agent" that acts as given inputs to achieve the best-expected outcome. Based on their study, these researchers suggest this definition depicts AI in terms of agent behavior and does not focus on how the agent reasons. According to the explanation, they indicated that "we use AI to refer broadly to computational systems that involve algorithms, machine learning methods, natural language processing, and other techniques that operate on behalf of an individual to improve a communication outcome (p. 90)."

Gunkel (2012) extended the rational agent concept as a procedure in communication as he asserted that whether it was revealed or not, communication is intrinsic to both the theory and apply of artificial intelligence (AI). Yet, Guzman and Lewis (2020) acknowledge that artificial intelligence and human communication do not match easily within established standards of communication as insight by virtual agents, social bots, and language generation software. They believe that the term artificial intelligence (AI) is polysemic (Broussard, 2018), comprising attempts to understand human intelligence by reconstructing a mind within the computer and developing techs that perform behaviors connected with some level of human intelligence (Frankish & Ramsey, 2014). Within this article, AI is reflective of the latter definition, concentrated on pragmatic goals such as those associated with the communication processes previously carried out by humans. For example, what scholars label "communicative AI" includes conversational or talking agents, social robots, and automated-writing software. According to Gunkel (2012), the primary drive behind Turing's essay is that of communication. Supposedly, Turing views this question as meaningless: "Can machines think?", so he replaces it with a question concerning communicative abilities.

AIMC refers to Communicator

Hancock, Naaman, and Levy (2020) asserted that the emergence of AIMC immediately raises further questions regarding communication and our use of technology and requires us to review its impacts and necessitates to form new theories, and frameworks. Hancock, Naaman, and Levy's (2020) inquiry isolates AIMC in the camp of interpersonal communication. What they deduced is an intelligent agent acts on behalf of a principal by communicating with another agent and manipulating the message's content to accomplish the goals that the principal specified or the principal inferred that he wishes to accomplish. These authors combine these AI and CMC concepts to define AIMC as mediated interaction between people in which a computational agent acts on behalf of one of the communicators by enhancing, simplifying, or generating messages to achieve communication or interpersonal goals. For clarification of the reality, they also define some examples of what a computer program is not likely to be considered AIMC as we have defined it here. To be more specific, the most closely related concept is that of human-computer interaction, which explores human interactions with pieces of computer software that do not represent human individuals but nevertheless act and think as if they were human. An example could be Apple's Siri or Amazon's Alexa. This extent, sometimes called Human-Machine Communication, coincides with the span of AIMC. However, the stimulating enquiries involve introducing AI that functions on communication between people. For example, a person could make use of an AIMC bot to interact personally with more people. AIMC could be more broadly conceptualized as any algorithm that mediates human communication like the Facebook "Newsfeed" and

other content ranking, recommendations, classifications algorithms based on algorithms that support human communication.

Guzman and Lewis (2020) explain that human-machine communication concentrates on interactions between people and technologies designed as communicative subjects instead of objects participating in the communication process. Starting with this concept of the computer as a communicator, they present a framework for investigating the questions emerging about people's communication with AI that works as a communicator.

The experiments conducted by Gunkel (2012) illustrate that machines can successfully communicate with human users across a diversity of contexts in ways that are often undifferentiated from another person. He points out that although Computer-Mediated Communication (CMC) has made an outstanding contribution to communication, this approach has missed a crucial opportunity inherent in Alan Turing's foundational insights—that the machine is a participant in communication.

Guzman and Lewis (2020) recently wrote that technology has traditionally been viewed as a medium by communication theory, while people have been understood as communicators. According to them, the concept of artificial intelligence has shifted as well to AI communicative technologies, which they see as a communicator that enables human-machine interaction to take a new shape after their studies. To make this assumption on the HMC framework, they employ three boundaries-- functional, relational, and metaphysical implications of AI communication technologies.

A Thought-provoking domain: Man, Machine and Communication

If we know what Marshall McLuhan explained in his book "Understanding Media: The Extensions of Man," the wheel is an extension of the foot, the telephone an extension of the ear, and the television an extension of the eye. In this illustration, technical devices have been recognized as instruments or prosthetics through which various human abilities are amplified beyond the original scope or capacity. In the technological advancement communication era, it would be quite reasonable for the questions to confound our minds about the factors playing significant roles that need to be examined for AICM. It was pointed out (Guzman & Lewis, 2020) that artificial intelligence and communication have been studied independently for over 70 years. Research involving AI has concentrated on reproducing human intelligence, including communicating within the machine (Frankish and Ramsey, 2014). By contrast, communication traditionally has been considered principally a human process influenced by technology; research in this discipline has paid attention to how people exchange communication with one another and the cultural consequences of such interactions. With the ever-expanding information and technology-reliant contemporary society, it becomes imperative to study these two under one communication shade to make this communication more suitable.

Researchers in the artificial intelligence and machine learning communities will need to investigate psychological, linguistic, relational, policy, and ethical questions regarding the introduction of AI into human-human communication, as Hancock, Naaman, and Levy (2020) pointed out. With the introduction of AI in interactions among

people, there is a possibility for a transformation in communication, upending

assumptions around agency and mediation, and introducing new ethical questions. CMC

is under development to include Artificial Intelligence-Mediated Communication

(AIMC): interpersonal communication that is not merely an end-result of technology but

stems from it and is formulated and modified to achieve communication goals.

Computational agents can analyze messages, history, personal info, or any other form of

data crafted by a human. The agent may then propose, modify, intensify, or construct

messages based on achieving an assumed outcome. Thurlow, Lengel and Tomic (2004)

defines CMC as the study of how people interact through network-connected digital

gadgets that exchange messages (e.g., email and text messaging, social network site

interactions, videoconferencing). We align with Walther and Parks (2002) focus on social

scientific analyses of the interpersonal dynamics of human-to-human communication via

technology.

Communication: Man vs. Machine

As Walther and Parks (2002) explain, the foundation of social science

interpretation of CMC is based on modeling and understanding the ways in which users

employ the technology of the medium as a mediator for the purposes of interpersonal

interaction. Guzman and Lewis asserted (2020) this interpretation more explicitly as they

noted the recent advances in AI technology had generated more powerful and robust AI

systems used in daily life. A Pew Research Center study in 2017 showed that many

people frequently chat with the digital assistants built into Amazon's Alexa and Apple's

Siri (Olmstead, 2017) in their daily life. Rainie and Anderson's (2017) research also

indicates that interactions with smart devices will increase as the Internet of Things becomes more prevalent. According to Marconi and Siegman (2017), news providers such as the Associated Press adopt artificial intelligence technology to produce and distribute their news within the industry.

The area of interest for AIMC sits at multiple intersections beyond communication alone, covering interactions with technologies conceived to mediate and communicate (Grudin, 2012). HMC, on the other hand, focuses on communication as it relates to technologies designed to enable more effective communication (Guzman & Lewis, 2020). HMC scholars have also drawn upon research traditions in the discipline that emphasize the importance of the medium and the cultural values embedded within the system to interrogate its effect on social relationships. However, a paradigm shift from a machine is seen as a means of communication to a communicator that ultimately reconstructs the idea that AI-used communication is regulating the communication that humans desire.

AI Understand Communicator's Goal

As we increasingly utilize AI, robots, and digital assistants to communicate with one another, how do we answer the question that Turkle (1984) posed four decades ago; How do we assess ourselves in terms of our interactions with these devices? Technology has always played an integral role in the formation of self; scholars of the contemporary human-machine relationship are only now realizing that the human-like entities that are

appearing at the end of interactions with AI will seldom if ever, conform to our expectations for interacting with a real human being (Turkle, 1984; Zhao, 2006).

Discussing the advent of computer-mediated communication (CMC), Herring (2002) contends that CMC revolutionized interpersonal communication, providing individuals with various forms and systems to exchange messages and interact beyond time and place. Walther and Parks (2002) remarked on how the medium and its properties influence the way actors use technology to accomplish interpersonal goals. Agency is attributed to the communication agent: generally views the communicator as a self-presentation and impression management tool. Likewise, it is expected that the message receiver acknowledges and accepts that agency. Hancock, Naaman, and Levy (2020) integrate AI and CMC concepts to delineate AIMC as mediated communication between people in which a system administered by an agent modifies, augments, or generates messages to satisfy that person's communication or interpersonal goals. For instance, AI has advanced text-based communication from the auto-correct, predictive text, and grammar correction to smart replies, auto-completion, and auto-responses, as well as auto-insertion of emojis.

From this above discussion, we contemplate that people can interact with AI communication technologies that work together and assume they know precisely the human or machine communicator's goal. However, AI technologies vary in how they work as communicators, functioning as intermediaries or content producers. For example, a voice assistant like Alexa answers human questions and requests (Guzman & Lewis, 2020). In verbal and non-verbal communication, people interact with embodied robots

(Peter & Kuhne, 2018). About text communication, automated computer systems called bots to enter into text-based social media exchanges posing as human conversational partners, influencing these interactions' tone and substance (Ferrara, 2016). Media also using AI technologies, news writing applications consist of narrative-writing programs that convert raw data into stories that can sometimes be indistinguishable from human-produced stories reported by humans (Clerwall, 2014; Graefe, 2018).

Chapter Five

Discussion

In this chapter, my study will be summarized by a discussion of its results. The question I am attempting to answer throughout this study is whether Artificial Intelligence-Mediated Communication (AIMC) is a possibility in the field of Communication Studies. The five research questions I asked guided my analysis. This chapter presents an overview of the findings in exploring AIMC, this study's limitations, and future research possibilities.

Discussion of Results

This study explores explicitly five more comprehensive areas that are logically expected to seize attention separately in communication studies. Previous communication scholars have discussed and analyzed this area of knowledge differently over time, but this paper presents a new approach in describing its nature. Suppose this study explores Artificial Intelligence as an Intelligent Agent. Scholars simply came to know this when they asked themselves whether machines can be intelligent. The question of "Can Machine Think" (Turing, 1999) laid the foundation stone of this scientific breakthrough. Thinking ability indicates the ability to communicate since thinking ability comes from communication ability. If the question of machine's ability to think is exclusively related to its communication skills, it is very logical to consider studying intelligent agents in communication. Turing's examination was the basic thing because if a machine can respond like a human, the machine needs to be considered intelligent. Even in cases

where the questioner asks questions without assuming gender-biased questions, common

sense is used to assign gender identity. The machine answers the questions based on any

form of reasoning, that is, calling thinking capacity, so machine is intelligent; Turning's

the conclusion from the early stage of AI. Thus, we can point out the relationship

between AI and communication from the inception of AI. Gunkel (2012) more precisely

affirmed that "Whether it is explicitly acknowledged or not, communication is

fundamental to both the theory and practice of artificial intelligence (p.2)."

Today's communication trends are very different from those of a few decades ago.

For instance, written correspondence is considered the most appropriate, authoritative

form of official communication. It could be an email or letter of a physical copy of a

message. Nowadays, email, text, or letter through email or other means of

communication technology mostly affects our decision-making processes in

organizational communication. Once, we hardly expect a physical copy of a letter that

determines the communication mode we operated. In ancient times, people used to send

messages through carrier pigeons. Now, through the aid of information communication

technologies, we are experiencing new forms of communication. Besides, this study

identified AI, which serves as a communication agent. So the communication paradigm

has been changed by an intelligent agent from traditional to a new one. Gunkel (2012)

also explores the ability of AI technologies to communicate successfully with human

users in a variety of contexts. Guzman and Lewis (2020) deduced machines as an

alternative to human in human-human communication. That is why they define AIMC as

interpersonal communication. Interpersonal communication is a fundamental component of communication, and the study acknowledges this.

At the initial phase of the discussion, this study categorized AI's activity as an activity of intelligent agent activity. The idea becomes more meaningful when AIMC illustrates several dimensions that broadly describe human communication intention, communication by AIs as a form of communication instrument, and communication functionality. AIMC demonstrated its characterization of the magnitude of an AI agent's involvement by advising to change words in online communication of a communicator. It is giving a sense that Man, machine, and communication are interdependently mediating their communication modes. The study of interpersonal dynamics of human-to-human communication via technology would be very timely; this study explores.

Guzman and Lewis (2020) mentioned that recent advances in AI technology have made it possible to generate more powerful and robust AI systems, which are currently used in daily life. The Pew Research Center has reported that many people frequently chat with the digital assistants built into Amazon's Alexa and Apple's Siri in their daily life. Rainie and Anderson's (2017) research also suggests that our interactions with smart devices will increase as the Internet of Things becomes more prevalent. Guzman and Lewis (2020) have found that AI powerfully effects people's communication, while Olmsted (2017) concluded that people are interacting with digital assistants and Rainie and Anderson's (2017) indication implies that communication between man and machine is significant for communication studies.

In addition, this paper explores how AI has the capability to understand the intention of a communicator. Finally, the AI agent role orientation is significant. Although current instantiations of Artificial Intelligence in communication tools are sender-oriented, we expect receivers to use such systems more often. Google Translate uses artificial intelligence to act as an intermediary between the sender and receiver, allowing them to communicate directly. One can envision other tools that promise to help users, such as by extracting social cues or detecting emotion, deception, and lays from real-time speech. We expect this set of dimensions to evolve as AIMC research continues.

Ethical Concerns

All along, I have noticed how Artificial Intelligence Mediated Communications has dramatically impacted human life. Nowadays, users are adequately informed about the impact AI communicative technologies have in the internet era. Google, Facebook, and Amazon are some of the most significant examples of AI-enabled communication technologies. Recent years have seen AI being increasingly used across various industries, from manufacturing to service delivery and disease detection to healthcare rendering. Particularly during the COVID 19 pandemic, the promise that these technologies held in changing human communication patterns was seen by millions of people worldwide. I believe, at this point, we need to consider three major ethical issues – privacy and surveillance, bias and discrimination, and human judgment role.

Meanwhile, the market for artificial intelligence continues to increase day by day. It is expected that $110 billion in market size will be reached by 2024 from the current $ 50 billion. The concept of communicating with artificial intelligence is not only about the ability to grow a business or provide more service in less time without human assistance, but there are a number of ethical issues ingrained in people's minds that need to be addressed more. AI mediated communication lessons and discussions require to incorporate human privacy, security, inequality, biases, and, on the other hand, these fundamental issues to provide a guideline for resolving them. On the other hand, from the beginning of artificial intelligence, one question that has been stirring the world of human knowledge very strongly is whether artificial intelligence will take human beings' place. Since technology is creating and using people for human beings' benefit, my examination demands a detailed discussion of human intelligence and well-being, and what could be a threat to human beings for logical reasons.

Future AIMC

In 1960, Herbert Simon expressed his assertiveness. He made a forecast: "machines will be capable, within twenty years, of doing any work a man can do" (Simon, 1965, p.96). Marvin Minsky continued Simon's thought and addressed, "within a generation, the problem of creating 'artificial intelligence' will substantially be solved" (Minsky, 1967, p. 109). This research anticipates that future AIMC will customize messages for interpersonal outcomes such as conveying reliability. Moreover, new technologies are emerging which optimize communications: how a recipient prefers to be

addressed based on their social status and responsibly uses AI to advise email writers about how to beat the appropriate tone when emailing seniors or juniors.

Limitations and Directions for Future Research

The limitations of this study must be taken into account. The first thing that restricted the scope of the study was the small number of texts. Only two of the three articles are more recent; two from 2020 and another from 2012; I know the most recent scholarly articles considered most up to date with brand-new insights. The number of items is significantly less than average regarding other areas of communication studies, except for communication and artificial intelligence.

By definition, each aspect of this list--the communication, the computer-mediated communication, the artificial intelligence-mediated communication would retain its merit. However, my intent in discussing all three more fundamental has been to provide academics with an overview of the implications of communication-facilitating AI for the study of communication. I perceive that each component of AIMC is interconnected, like just the practical, relational, and characterization aspects of AI-mediated communication are interlinked; thus, these components are intertwined within AIMC. Therefore, experts in communication must undertake particular questions within each specific area and more massive vital questions about how they all interconnect. In final remarks, the examination intends to give communication learners an opening point to articulate both old and new communication thoughts. AI and previous technologies have dominated recent

communication research; this study offers the fundamental and historical framework to

evaluate the idea of scholarship in communication.

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