# Technological Advancements and Language Evolution: A Historical Approach

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#### **Abstract**

Language, as a fundamental aspect of human communication, has been subject to continuous evolution throughout history. This paper examined the complex interrelationship between language evolution and technological developments, exploring the historical background of how inventions have influenced and still influencing language use. The study investigates how the structure and use of languages have been influenced by technology including writing systems, the printing media, telecommunication, and the internet, and how each industrial revolution has left an indelible mark on English Language and expanded its vocabulary with the inclusion of many linguistic innovations. It recommends that language planners, policy makers and linguists should embrace synergy and multidisciplinary approach to dealing with linguistic innovations.

**Keywords:** Linguistics Innovations, Language Evolution, Historical background, Industrial Revolutions

#### Introduction

Taylor & Francis (2013) posits that the foundation of human communication has constantly change over time to meet the shifting demands and capacities of societies. The development of technology has had a significant impact on this progression. Language has evolved along with technology, both in terms of usage and structure (R Kern, 2015). Human intellect and social interaction are characterized by language, a special system that has enabled our species to interact, communicate, and pass on information to future generations. Technological developments have always had a significant influence on how human language has developed over time. Language is a continuous phenomenon, its adaptive, evolving and fits for every situation and spheres of life. Its dynamism has been studied by researchers in the bid to unravel the complex relationships between language and technology (McCulloch, 2020). It goes without saying that technology has had a huge impact on the language. Some words which have recently been coined have become immensely popular and are in the queue for acceptance in the mainstream English language. Language changes itself very slowly but technology has accelerated this change which is more frequently practiced by those who are techno-savvy. Technology has had an astonishing effect on the way we communicate especially written language, where it has got its biggest impact (Njenga, 2021).

Chomsky has it that language is a crucial component of human communication and has been evolving continuously over time. Rapid technological development in recent years has fundamentally altered the way people communicate, upending established linguistic conventions and introducing fresh theories of language evolution. This study takes a historical perspective to understand the impact of different technological turning points on linguistic

development in order to explore the complex relationship between technical development and the development of human language.

Through a survey of recent references and scholarly research, this paper attempts to present a historical perspective to understanding how language and technology have influenced each other, from early writing systems to the digital age.

The historical development of language will be explored in this study along with significant technical developments that have influenced how people communicate today. It will examine how language dynamics, usage, and structure have been impacted by the development of writing systems, printing presses, telecommunications, and the digital revolution. This study aims to shed light on the complex interactions between technology and language by tracking the effects of these technical advancements through historical records, linguistic analysis, and the inspection of written and digital artifacts.

In order to better understand how our linguistic systems adapt and change in response to the rapidly evolving technological environment, this research aims to shed light on some of the complex relationships between technological development and language evolution. Finally, the results of this study will shed light on the historical causes of the linguistic changes we currently observe, providing important information for linguists, historians, and academics interested in the nexus between technology and human communication.

#### **Literature Review**

The way we read, write, and communicate has changed dramatically throughout time due to technological breakthroughs that no one could have imagined. According to linguists and lexicographers, technology is by far the most important factor changing the English language at this time (Al-Shehri, 2020). The younger generation, in particular, has the belief that languages that do not undergo change are "dead" languages. English is therefore "alive and active" since it changes on a regular basis (Crystal, 2006). The usage of "Old English," "Middle English," "Early Modern English," and finally "Modern English" has gradually expanded. Several ancient civilizations, such as China, Egypt, and England, had well-organized postal systems that used carrier pigeons or horses to convey messages to various parts of their empires. The printing press was created in 1439 by Johannes Gutenberg and brought to England in 1476 by William Caxton, marking the beginning of the 15th century (Williams, 2015).

Philipsen (2000) posits that language develops and changes constantly as we create new, better terms that better capture our culture or society. Specifically, it reflects the intricacy of our lives' integration with technology. Our language changes at a rate that is faster than ever before due to advancements in technology. Because, similar to technology, we work to optimize language so that we can effectively and with the least amount of ambiguity communicate complicated ideas. With almost half of the world's population now online, we see massively increased levels of communication. Ideas, words, and phrases are being generated and circulated at a staggering rate. Whereas it used to take years for specialized language to make the transition from developer to the general public, social media use and the growing influence of technology on the economy have made it possible for technical jargon to become commonplace very quickly. Many experts believe that the amount of technical vocabulary and slang we use in everyday life is currently growing faster than ever before (McCulloch, 2020).

The primary function of language is communication. With the rapid growth of technology, communication modes have undergone significant changes (Y Jiang, et. al, 2021). Accordingly, the English language has evolved to better align with these new forms of

communication, ensuring efficiency and effectiveness. Recent research in the field of linguistics and technology has shed light on the intricacies of language evolution in the digital age. Crystal (2011) examines the impact of the internet on language in his book "Internet Linguistics," while Baron (2015) explores how digital communication is affecting writing in "Words Onscreen." Additionally, research by Danesi (2016) discusses the role of emojis and visual language in online communication.

# Methodology

The study will use a diachronic method, following the historical progression of technological innovations and their impact on language evolution. To provide a complete understanding of the reciprocal link between technology and language across different historical periods, primary sources, archival materials, and linguistic artefacts will be analysed.

#### **Theoretical Framework**

# Media Ecology Theory (Marshall McLuhan)

Marshall McLuhan's "Media Ecology Theory" is a framework for understanding the impact of media and communication technologies on human culture and society. This theory was developed by McLuhan, a Canadian philosopher and communication theorist, in the 1950s and 1960s. McLuhan's famous remark captures the core concept of Media Ecology Theory: "The medium is the message."

McLuhan's renowned theory serves as a guiding framework, emphasising how developments in communication technologies operate as catalysts for changes in society structures and cultural norms. This hypothesis, when applied to the context of language evolution, contends that the advent of new technologies, from the printing press to the internet, affects the medium through which language is conveyed, hence changing linguistic forms and communication dynamics.

# **Principles of Media Ecology Theory**

# 1. The Medium is the Message

"The medium is the message" is a phrase created by Marshall McLuhan meaning that the form of a medium embeds itself in the message, creating a symbiotic relationship by which the medium influences how the message is perceived. McLuhan argued that the characteristics of the medium through which information is transmitted are more influential than the content of the message itself. Different media have unique qualities that shape how information is perceived and received.

#### 2. Tetrad of Media Effects

McLuhan's tetrad serves as a framework for analysis, consisting of a set of four effects to examine media in their historical context and present environment as well as the characteristics and attributes of the medium itself. These effects include: enhancement, obsolescence, retrieval, and reversal.

**Enhancement**: What does the medium amplify or intensify? **Obsolescence**: What does the medium render obsolete?

**Retrieval:** What does the medium recover or bring back that was previously lost?

**Reversal**: What happens when the medium is pushed to its limits, and its effects are reversed?

#### 3. Global Village

McLuhan anticipated that electronic media, particularly television, will collapse spatial and temporal distances, resulting in the creation of a global village. This idea indicates a sense of global connectivity and interdependence.

#### 4. Hot and Cool Media

McLuhan categorized media as either "hot" or "cool" based on their level of participation required from the audience:

**Hot Media**: High-definition, low-participation media with a lot of information but little possibility for interpretation (e.g., radio).

**Cool Media:** Low-definition, high-participation media that necessitates more effort from the viewer to fill in the blanks (e.g., television).

# **Applications of Media Ecology Theory**

# 1. Understanding Technological Change

Media Ecology Theory provides a framework for understanding how changes in communication technologies influence societal structures, values, and cultural norms. It helps explain the societal impact of new media technologies, such as the internet and social media.

# 2. Cultural Analysis

The theory is often applied to analyze the cultural implications of media. Scholars use the tetrad to explore how different media affect our perceptions, behaviors, and social interactions.

#### 3. Education and Communication Studies

Media Ecology Theory has been used in education to better understand the function of media in changing the learning environment. It is also used in communication studies to examine how the media affects public discourse and social dynamics.

#### 4. Media Literacy

The necessity of media literacy is emphasized by Media Ecology Theory, which encourages people to critically assess and comprehend the impact of media on their life. It raises awareness of the medium's impact on perception and behaviour.

Media Ecology Theory continues to be prominent in media studies and communication theory, providing a useful framework for investigating the enormous effects of media and technology on the human experience.

## **Internet Linguistics (David Crystal)**

Drawing on Crystal's work in Internet Linguistics, this study explores the impact of digital communication on language evolution. By examining language use in online spaces, social media platforms, and digital communication tools, the research seeks to identify novel linguistic features and communication norms that have emerged with the advent of the internet.

Internet Linguistics, as a field of study, focuses on the linguistic aspects of online communication and the impact of the internet on language. David Crystal, a renowned linguist, has made significant contributions to the understanding of internet linguistics. His work in this area encompasses the analysis of language use in online environments, the development of internet-related language features, and the examination of the implications of digital communication for language evolution.

# Key Aspects of Internet Linguistics as Explored by David Crystal

# 1. Netspeak and Online Communication

David Crystal has studied the unique language characteristics of online communication, which are commonly known as "netspeak." This encompasses phenomena like emoticons, emojis, acronyms, abbreviations, and other creative ways to convey meaning in digital contexts. Researchers and Linguists interested in comprehending the language dynamics of the digital age have a solid basis because to David Crystal's contributions to online linguistics, which have helped shape the subject. His work promotes an all-encompassing investigation of language use on the internet, taking into account both the new linguistic aspects that appear in the online sphere and the linguistic continuity with traditional language.

# 2. Digital Discourse Communities

Crystal has studied how online users create digital discourse groups with particular language practices and norms. To set themselves apart from other online communities, these communities could create distinctive vocabularies, slang terms, or style norms.

# 3. Language Evolution on the Internet

In the context of the internet, Crystal has discussed the dynamic aspect of language evolution. He investigates the emergence of new vocabulary, idioms, and linguistic forms in online contexts, frequently as a result of the quick speed of technological advancement and the demand for clear and effective communication.

# 4. Multimodality in Online Communication

Multimodal communication in which text is blended with pictures, videos, and other non-verbal elements is made possible by the internet. Crystal has studied the ways in which these multimodal characteristics support expression and meaning in digital communication.

# 5. Globalization and Online Language Use

Global interaction is made easier by the internet, and Crystal has studied how language use is impacted by this globalisation. People with different linguistic backgrounds can communicate thanks to the digital environment, which encourages language interaction, borrowing, and adaptation.

## 6. Identity and Online Language

Crystal has studied how people use language to create and convey their identities in virtual environments. This covers online personas, identity negotiation within digital networks, and the use of language to signal social identity.

#### 7. Norms and Variations in Online Language:

Crystal has studied how language usage patterns emerge and change on the internet. Examining the evolution of linguistic standards on certain social media platforms, digital communication tools, and online platforms is part of this.

## **Discussion**

Linguistic evolution has always been connected to technological progress. Written language was changed, for example, when Johannes Gutenberg invented the printing press in the fifteenth century. According to Smith (2019), linguistic convergence was aided by the widespread distribution and standardization of language brought about by the enormous

manufacturing of books. The internet and the development of technology have caused English to change more quickly than it did in the past. English has changed over the past years due to the increased number of individuals who are learning it and incorporating their cultural influences (Mohan, 2022).

The dissemination of knowledge was drastically transformed when Johannes Gutenberg invented the printing press in the fifteenth century. The widespread printing of books promoted linguistic uniformity by making literature more widely available. Language evolution has been influenced by the dialect that was employed in printed works, which served as the foundation for present standard languages (Crystal, 2011). English became more uniform as a result of the printing press's ability to produce large quantities of the same material in the same format. Even in its day, the amount and accessibility of texts contributed to the rise in literacy rates in Europe and other third-world nations.

Before the invention of the printing press, ideas were lost and then found again at various periods and locations. All texts were meticulously handwritten. At first, mass-produced books appeared cheap and only appropriate for the lower and middle classes due to the upper class's fondness for the exquisite handwriting and terminology found in hand-inked books, which to them represented grandeur (Angel & Rarr, 2019). But soon, printed materials took over as the main means of disseminating knowledge, facilitating the dissemination of scholarly ideas for the intellectual and scholarly community's benefit. Books and literature are now more widely available because writing became a broadcast medium through the printing press, allowing writers and academics to create new expressions and distribute their work widely.

A significant turning point in the evolution of language was the invention of writing systems. Writing facilitated the transmission of ideas and the preservation of information in prehistoric societies like Mesopotamia and Egypt. Language structure was influenced by early scripts like cuneiform and hieroglyphics, which introduced the idea of using standardized symbols to represent words and concepts.

People have progressed from quill to ink to pencil, from papyrus to vellum to paper, and from a typewriter to a word processor to a networked computer, thanks to technological advancements. These developments have permanently altered the writing craft. Writing is a tool that is always adapting to its users in order to best serve them. Still, writing in the digital age is not the same as writing in the previous twenty-five years or so. Everything in writing has been impacted, even the little paragraph (Elby, 2023).

From the telegraph to the telephone, there were major advancements in communication during the 19th and 20th centuries. The amount of time it took for communications to travel across large distances was significantly decreased by these technologies. Telegraphic language was created as a result of the language having to alter quickly to accommodate the rapid flow of information. Telegraphic language has to be clear and succinct.

The younger generation of today, on the other hand, is still committed to staying current with the evolving lexicon of "Telecommunication." Evidence supporting the impact of telecommunications is the fact that most people these days prefer texting to face-to-face conversation. It is now easy to avoid unwelcome interactions with other individuals because of this invention. Even so, waiting for a phone call that goes unanswered these days is one of the most annoying experiences, even though it may be resolved with a quick text message.

The English language has also undergone significant change since the advent of cell phones, emails, and instant messaging. The original cell phone was unknot mobile when it was invented in 1956, but as time has gone on, phones have become more compact and

portable, allowing for continuous use. Even nevertheless, compared to traditional writing, the vocabulary employed in "online" communication is often more flexible. Its faster delivery time and lower chance of interception are still unmatched (Reed, 2019). Our daily environment now shapes the phrases we use more frequently. The English language currently changes based on how we interact with technology since most written materials may now be found on the screens of our computers, cellphones, or tablets. Various "online" acronyms have been developed to suit this. A tiny percentage of people continue to use the language in its archaic form, despite the fact that even the elder generation has come to terms with using emails and cell phones (Walters, 2015). It makes sense to assume that they just use these gadgets to stay in touch with other people.

The relatively new technological phenomena of the internet has resulted in a multitude of linguistic alterations. New forms of communication have emerged as a result, including social media, instant messaging, and email, each with its own set of linguistic rules. Emoji usage, text message brevity, and the emergence of internet vernacular have all changed how people communicate online.

The advent of search engines and online encyclopedias in the twenty-first century has also had an impact on how modern English sentence structures should be constructed and how "correct" grammar and vocabulary should be used (Trotta, J. 2010). Since to Google" has now gained widespread recognition as a verb and because many nations are still creating their own slang terms, the internet needs to be able to adapt to the diversity of regional tongues (BBC News, 2019). It is now simpler to translate and use other languages without first learning them in school because of programs like "Google Translate." Although, there is no denying the usefulness of "Google Translate" and related software programs, some bookworms, such as Douglas Hofstadter, believe that "there is still a deep misunderstanding in the methodology being conveyed by machine translation' (Hofstadter, 2019).

The large social media audience of today consistently uses various word and symbol combinations to denote "Modern day English." Social media is changing quickly, from coining new terms to giving old ones new meanings (Hanna, R., Rohm, etal 2011). According to Crystal (2006), social media's "user-generated content" was changing "increasingly through platforms like MySpace, Twitter now "X", and Facebook." There will always be arguments for and against the "dumbing down" of English in modern media, but without it, English as it is spoken today would not exist. The way words and abbreviations are presented is one instance of this change in everyday use. Examples of modern shorthand include "selfie," "images," "unfriend," "LOL" (laugh out loud), "OMG" (oh my god), and "TTYL" (talk to you later). These simplified methods of expression place less emphasis on language use overall and instead emphasize conveying ideas quickly and effectively in both written and spoken daily conversations.

The term "selfie," which was originally used in an Australian online conversation in 2002, gained popularity in 2013 and was eventually selected as the Oxford Dictionary's Word of the Year (Favilla, 2019). However, the act of deleting an individual from your list of friends on Facebook is referred to as "un-friending." In addition to the addition of words and acronyms, there is a new belief that a writer's tone may be inferred from their usage of the computer keyboard's 'CAPS' button even when they are not physically there (López Fogués, R. 2017). To shed more light on this discovery, it's thought that lower case writing is the appropriate style for everyday conversation, while phrases put in higher case indicate shouting or rage.

The foundation of human society, language, has undergone many evolutionary changes over time. Now that technology is taking center stage in our world, language

evolution is set to undergo yet another revolutionary change. Since artificial intelligence (AI) is at the vanguard of this technological revolution, language evolution will play a critical role in determining the direction of human communication in the future. The basic assumption of language evolution in our technologically advanced society is that it must serve to lessen bias, improve precision, and accommodate rapidly emerging technological trends (Iain, 2023).

The ability to overcome linguistic obstacles in communication is one of the most important effects of AI language progress. Effective communication has long been hampered by language, but AI language models are gradually removing this obstacle. AI-powered translation services can now translate text in real time, facilitating smooth communication between speakers of different languages. This has far-reaching effects for international trade, diplomacy, and interpersonal relationships (Marcin, 2023).

Social media is largely to blame for the creation of numerous new terms. For example, "Tweet" used to refer to bird chirping, but it now also refers to a lengthy message posted on the well-known website "Twitter now X." The phrase "check in" refers to more than just checking into a hotel or using the counter at the airport; it also indicates that someone has "checked in," which is akin to sharing your whereabouts with the public on a website. In the 1950s, "wireless" signified a radio. Nowadays, unless you belong to a specific generation or are attempting to be satirical, it is quite uncommon to discuss radios as wireless. (Lloyd, D. 2015). This is according to Fiona Macpherson, senior editor of the Oxford English Dictionary. The verb "to Google" has gained widespread acceptance.

The development of language has always been significantly influenced by technological breakthroughs. The system of language is dynamic and flexible, reflecting the shifting requirements and capacities of its users. Along with changing the way we interact, technology has also sparked the development of whole new languages and communication channels.

**Vocabulary Expansion:** New terms and ideas have entered our common language as a result of technology. For example, a few decades ago, words like "internet," "smartphone," and "selfie" were essentially nonexistent. The swift velocity of technological advancements demands that our lexicon continuously expand and evolve.

**Abbreviations and Acronyms:** In text messaging and online communication, abbreviations and acronyms like "LOL" (laugh out loud) and "BRB" (be right back") are frequently used as a result of the digital age. These linguistic short cuts show how technology has pushed language efficiency and brevity.

**Emojis and Emoticons:** The introduction of emoticons and emojis has given textual communication a whole new meaning. We can express feelings, expressions, and nuances with these visual symbols that might be difficult to convey with words alone. Emojis have transcended language barriers and have become a universal language in and of themselves.

**Global Communication:** Thanks to technology, geographical boundaries are no longer an obstacle to real-time communication worldwide. The spread of English as a universal language can be attributed to the necessity for individuals with diverse linguistic backgrounds to communicate with one another. Furthermore, apps for language learning and computer translation have made it simpler for people to overcome language barriers.

**Natural Language Processing and Machine Translation:** The advancement of these fields has revolutionized how humans communicate with one another through language. Language boundaries can now be overcome, promoting cross-cultural dialogue and opening up material to a worldwide audience thanks to these technologies.

#### Conclusion

This essay has looked at the relationship that has existed historically and currently between language evolution and technology advancements. Recent writers have made significant contributions to our understanding of the intricate relationship between language and technology by highlighting the revolutionary effects of tools and technologies on language usage, development, and structure.

Technological innovations have had a major impact on the evolution of language. They have introduced new language, altered the way we communicate, and enlarged the spectrum of linguistic tools at our disposal. Language is a dynamic system that changes to meet the demands of a changing society. Technology plays a major role in this constant change. Language will unavoidably continue to change as a result of our continued development of new technologies.

It is essential to think about the ethical ramifications of these developments as we enter a more digitally advanced era and work toward a harmonious cohabitation of language and technology. Language evolution and the rapidly evolving field of technical advancements are closely related, and it is crucial for academics, educators, and society at large to comprehend this dynamic interaction.

In conclusion, a dynamic and reciprocal relationship between language evolution and technical advancements can be seen by using a historical perspective. Alongside the advancement of writing systems, the printing press, telephony, and the internet, language has changed. Recent studies offer insightful perspectives on language in our technologically advanced environment, both now and in the future. We must never stop researching and comprehending the ways that technological advancements impact language-based communication and self-expression.

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