Exploring the Origins of Language

Jeffrie Butterfield

Abstract

Language is what sets humans apart from other species, and it has played a crucial role in the creation of advanced civilizations. Given its profound significance, its origins and evolution have increasingly attracted scholarly attention and become a central focus of research in recent years. Researchers seek to understand why only humans possess complex language and what evolutionary forces facilitated its development. Since spoken and gestural language leave no physical record, determining exactly how, when, and why language began remains difficult, prompting the development of various theories. This article introduces several leading theories on the origin of language, exploring how and when it emerged, and the factors that influenced its development and led to speech becoming our primary mode of communication.

I . Introduction

Humans use language to communicate thoughts, emotions, and aspirations, to make requests, tell stories, and so on. We use it to discuss the past, present, and future, as well as things in our immediate vicinity and things that are out of sight. Language enables us to teach, learn, and pass on knowledge, traditions, and customs. Words can be used in infinite combinations to express preexisting concepts and ideas and can be used to convey new concepts and ideas. Sometimes a single word suffices; other times, grammar and multiple words are needed to form sentences and convey information about complex ideas, situations, and subject matter. Language allows humans to tell mythological stories, talk about people, their environment, relationships, hunting, survival, and religion. Human communication is multimodal: it consists of speech, gestures, body movements, and writing. With the advent of the internet, the way that people communicate has drastically changed; we now communicate through text messages, social networking sites, video chats, and online forums.

Before we communicate externally, we think internally using what is often referred to as mentalese,

which Collins Dictionary (2025) defines as "a hypothetical mental system, resembling language, in which concepts can be pictured and combined without the use of words." This differs from the language we use to communicate with others, which is sometimes called our public language. There is a clear link between language and thought; we must externalize our thoughts through gestures and words. Speech and gestures can be seen as auditory and visual representations of thoughts. Berwick and Chomsky (2017) challenge the mainstream belief that language exists for communication, suggesting instead that language is primarily used for thinking and that the original function was probably to think about the real world. Chomsky (2002) notes that because language contains ambiguity and is not always concise, it may not be ideal for what we use it for.

Over time, humans began to give meaning to words, symbols which formed the foundation of language and were used to build communities, societies, and civilizations. Archeological discoveries sometimes serve as the basis of various theories about the origin of language. Although language itself leaves no fossil record, artifacts such as tools are used to infer the cognitive sophistication of early humans, which some researchers argue is undeniably synonymous with the ability to communicate using complex language. As societies evolved, the need for new words and more complex language arose. Grammar, though not necessary for basic communication, helps convey complex and detailed information and is a distinguishing feature of human language. One school of thought argues that grammar is something embedded in human DNA, not something created or learned, but rather an innate knowledge that humans are born with.

The importance of language to human civilization cannot be overstated. As Deutscher (2005) states, "Compared to language, all other inventions pale in significance, since everything we have ever achieved depends on language and originates from it" (p. 1). According to Bickerton (2009), language is perhaps the only trait that distinguishes us from other species. For centuries, the origin of language was not a focus of serious academic inquiry, largely because many people believed that language was something bestowed upon them by a divine power. In the 1700s, Jean-Jacques Rousseau wrote *On the Origin of Languages*, beginning by emphasizing the significance of language and stating, "Speech distinguishes man among the animals" (Rousseau, 1852/1966, p. 5). In 1866, the Linguistic Society of Paris included a ban on inquiries into the subject of the origin of language in its founding statutes (Aitchison, 1996), which discouraged scholarly investigation into the topic.

Since Rousseau, some thinkers have attempted to address the origin of language, but it was not until the late 20th century that the topic gained traction in mainstream scholarship. Researchers from fields such as paleontology, linguistics, archaeology, and neuroscience began publishing works in hopes of shedding light on how language came to be. As Chomsky (2002) remarked, "more has been learned about language in the last twenty years than in the preceding 2,000 years" (p. 95).

Because of the importance of language, scholars continue to seek to understand its origins, including when, why, and how it came into being, drawing from a broad range of disciplines.

This article introduces key theories and research on the origin of language and explores when, why, and how humans came to possess it. Whether language began with gestures, vocalizations, or both is still debated. While we may never know definitively which came first, many researchers aim to understand how human language evolved from basic forms of communication, perhaps resembling that of other great apes, to today's complex, predominantly spoken communication system. The next section provides a brief overview of our evolutionary past and explores theories on how, when, and why humans developed the ability to speak.

Ⅱ. Theories on the Origins of Language

Of all the great apes that have existed since about 15 million years ago, our closest relatives are the chimpanzees and bonobos. It is estimated that hominins diverged from these species between approximately 5 and 6 million years ago. Since the other great apes do not have language, it is highly probable that hominins began to develop language following our separation from them (Corballis, 2002). While other great apes do not have language, chimpanzees, for example, use a variety of gestures to communicate in ways similar to humans. Lieberman (2010) notes that that the abilities found in chimpanzees were probably also present in the shared ancestor of apes and humans from millions of years ago.

Some researchers argue that the human capacity for language is linked to brain size. Australopithecines had a relative brain size that was only marginally bigger than that of modern apes. Brain size increased moderately in Homo habilis and Homo erectus, though tool advancements remained limited. Homo erectus crafted symmetrical handaxes, which represented their most advanced technology. The rapid advancement of human tools began approximately 40,000 to 50,000 years ago (Maynard Smith & Szathmáry, 1999). Consistently creating something with symmetry requires conscious thought of the desired result and the ability to execute it with a certain degree of skill. The tools used by Homo erectus and Homo sapiens suggest that their level of intelligence and creativity increased compared to that of previous species of the genus Homo. Some scholars propose that language emerged relatively recently in human history due to a genetic mutation. Dawkins and Wong (2017), however, argue that "a few mutations to a single gene are unlikely to suddenly produce a new and highly adaptive function, such as the ability to learn language" (p. 85). Chomsky (1981) introduced the theory of universal grammar, the idea that humans possess a congenital knowledge of the rules of language. He proposes that because language is so complicated, humans most likely have something in them that allows them to acquire it. According to this theory, people are able to acquire a language because all languages generally

share the same building blocks, the basic components of language. Chomsky (2002) writes:

> It is hard to avoid the conclusion that a part of the human biological endowment is a specialized 'language organ,' the faculty of language (FL). Its initial state is an expression of the genes, comparable to the initial state of the human visual system, and it appears to be a common human possession to close approximation. (p. 85)

He argues that despite having very little input, children are able to attain high levels of linguistic proficiency, suggesting that language originates from within and not from an external source.

We know that language has been around for a minimum of about 5,000 years, which is the estimated age of the oldest known written texts (Janson, 2012). Spoken language predates writing by a vast amount of time, but we do not know when it began. Estimates vary widely, ranging from tens of thousands to millions of years. Corballis (2002) posits that language with grammatical functions may have started approximately 2 million years ago and mainly consisted of gestures. He suggests that the biological adaptations necessary for speech may have appeared slowly starting approximately 2 million years, eventually reaching completion before the emergence of Homo sapiens around 170,000 years ago.

Everett (2017) argues that language emerged more than one million years ago with Homo erectus. Planer and Sterelny (2021) propose that language may have emerged earlier than Everett's estimate, suggesting that linguistic units resembling words could have existed as far back as 1.7 million years ago. Gärdenfors (2006) estimates that speech probably appeared somewhere in the range of 200,000 to 300,000 years ago. McWhorter (2003) believes that it is highly likely that the earliest humans who spoke language in a form similar to what we use today resided in East Africa approximately 150,000 years ago. Berwick and Chomsky (2017) assert that "human language and the Basic Property must have arisen between these two fixed spots in time, between 200,000 years ago at the earliest and 60,000 years ago at the latest, but presumably well before the African exodus" (p. 150).

Complex gestural and spoken communication could have developed because of changes in physical environments. If language originated from gestures and not vocalizations, bipedalism would have played a critical role in its development as it would have allowed early humans to use their hands more freely. Theories about why hominins became bipedal vary. Humans are a product of their environment and bipedalism may have been an adaptation to the ever-changing physical environments of our forebears. It is theorized that bipedalism helped hominins to run for long distances, or allowed them to carry food, water, or children.

Humans have most likely possessed the biological capacity for speech for hundreds of thousands,

if not millions, of years, but this ability may have been activated as a result of increasingly complex social environments and relationships. During the cognitive revolution, which lasted between 70,000 and 30,000 years ago, there were advances in how humans thought and communicated. The reasons for the cognitive revolution, however, remain unclear（Harari, 2011）. Did improved cognition lead to language or did a preexisting biological capability become activated by environmental or social factors? The answers to these questions also remain undetermined.

Complex societies and social relationships most likely led to higher processing demands on the brain, which resulted in gradual improvements in cognitive ability. Language is necessary for intricate social interaction and the social cooperation needed for the joint creation of language would have stretched the cognitive abilities of early humans. The increased demand on cognitive capacity could have led to incremental cognitive improvements and eventually to complex language with syntax and grammar. For example, displaced reference, talking about things not in our immediate vicinity, would have required the use of symbols. Creating and understanding symbols would require much greater cognitive capacity than icons or indexes. It is possible that language came about as a result of several factors, not just a genetic mutation, or human cognitive capacities slowly being stretched because of societal and environmental factors. In the following section I will explore the first form of human language, sometimes referred to as protolanguage, which was a rudimentary form of the current human communication system that lacked structural complexity.

Ⅲ. Protolanguage

Planer and Sterelny（2021）describe protolanguages as “communicative tools that are language-like in having a lexicon, for utterances are strings of wordlike items. But they have little or no overt morphology or syntax”（p. 7）. Corballis（2002）characterizes protolanguage as something that is “generative, allowing the production and comprehension of novel utterances—although it does not provide anything like the flexibility and narrativity of a full-fledged language”（p. 37）. Because there is no universally accepted definition of protolanguage, it is difficult to determine at what point a protolanguage evolved into a language defined by more advanced features such as grammar and syntax.

When protolanguage first appeared in its most rudimentary form, it likely had severe limitations in expressive range. While it may have been sufficient for the needs of people at that time, increasing societal complexity would have necessitated a more expansive vocabulary and communicative flexibility. Nouns and verbs are fundamental building blocks of human society. Protolanguage, whether gestural, vocal, or both, likely began with nouns, later evolving into noun-verb combinations. However, without grammar words and verb tenses, communicating about past and future events

would have been difficult, thereby creating the need for verb conjugation and grammar words.

It is estimated that there are currently more than 6,000 languages in the world. Some researchers suggest that many of these were created in isolation without any influence from other languages as people migrated, while others theorize that all languages derive from one single source. If the latter were true, one might expect more similarities. However, some languages do not even contain what are considered to be the fundamental elements of grammar, such as adverbs, adjectives, articles, and prepositions (Corballis, 2017). Just as many languages exist today, it is likely that numerous protolanguages existed in the past, whether or not they originated from a common source. It is plausible that protolanguages emerged independently as human groups migrated. Various groups could have had their own protolanguages, which evolved at different speeds and in different forms due to selective pressures.

Like modern language, protolanguage likely spread throughout society via unconscious imitation and the shared negotiation of meaning. People tend to mimic those that they interact with regularly, and early humans would have acquired protolanguage in a similar manner. Children likely learned protolanguages from their parents and the people around them, much as they do today. Initially, protolanguages would have been crude, but as cognitive capacity increased and societies became more complex, protolanguages too would have gradually become more complex and refined.

For communication to be effective, interlocutors must share a mutual understanding. If language began with iconic gestures resembling referents, such as using hands movements to depict a flame, how did these gestures evolve into arbitrary words? A likely scenario is that early gestures were gradually paired with arbitrary vocalizations, such as a grunt, lip click, or something resembling an animal call. Over time, these sounds became more distinct and widely recognized within communities. As this process continued, proper pronunciation and recognition would have become advantageous, facilitating communication at night or across long distances if interlocutors were not next to each other.

The earliest language was likely driven by instinct and shaped by necessity. It would have initially been chaotic and unsystematic. As new needs for expression arose, new words and structures would have been developed through trial and error. As human societies began to expand and become more complicated following the agricultural revolution, social constructs such as beliefs, standards, and rules which helped to maintain societal stability began to become more intricate (Harari, 2011). These intricacies would have created the necessity for a larger vocabulary and a more complex communication system. The need for greater linguistic precision would have spurred the development of grammatical systems. Once basic grammatical patterns, such as verb conjugation, were in place, people could apply those patterns to other words, leading to a more systematic communication system. Human infants are not explicitly taught grammatical rules, yet they are able to apply certain patterns to a variety

of words. Although complete uniformity would have been unlikely, it would have slowly given rise to a structured linguistic system.

Ⅳ. Gestures First, Vocalizations First, or a Combination of Both?

It is often debated whether language originated from gestures, vocalizations, or a combination of both. Some researchers（e.g., Armstrong & Wilcox, 2007; Kendon, 2004）support the gesture-first theory, the idea that language did not originate with speech, but rather with gestures. This theory assumes that humans initially used gestures to communicate, and that as speech emerged, it gradually became the dominant form of communication due to some evolutionary advantages. Others argue that gestures and speech were equiprimordial, that is, they existed simultaneously from the outset. This view holds that speech and gestures are interdependent and equally important.

It is possible that the human capacity for language initially developed largely through gestural communication, with spoken language being a relatively recent addition（Tomasello, 2010）. Corballis（2002）suggests that language progressed incrementally, beginning first with gesturing apes, and then possibly evolving in the genus Homo as brains grew in size, allowing for the creation of syntax and eventually vocalizations. If communication started with gestures, but later evolved into speech possibly due to some selective pressure, why didn't speech entirely replace gestures? One possibility is that the current system is not optimal, which is why humans continue to use speech and gestures concurrently. In conversation, modern humans use a combination of speech, sounds, and gestures to express ideas and emotions. Each of these layers has its own communicative function and contributes to richer, more complex communication. McNeill（2012）challenges the gesture-first theory, arguing that it fails to take the interconnectedness of speech and gestures into account. He states that "Gestures are components of speech, not accompaniments but actual integral parts of it"（p. 2）.

Some researchers draw parallels between language evolution and child language acquisition. Infants typically begin communicating by making sounds, then using gestures, eventually combining the two before developing clear speech. This development sequence mirrors the gesture-first theory. If language began with gestures, but was eventually replaced by speech as the primary mode of communication, what drove this shift? What benefits did vocal communication offer? The development of speech reflects an ongoing evolutionary shift toward liberating the hands to use tools and carry things（Lieberman, 1991）. Speaking would have allowed early humans to multitask and carry things while communicating. In addition, speaking does not require visual contact; you do not need to see the person you are communicating with（Kenneally, 2007）. This would have enabled people to communicate at night, which would have been extremely beneficial as it is dark approximately half of the day.

It is very likely that gestures were the precursor to spoken language. Simple, spontaneous gestures may have gradually evolved into more systematic and structured forms of communication. Gestural communication, unlike speech, requires that interlocutors are in the same vicinity and can see each other. Vocal communication would have provided practical benefits for early humans engaged in activities like hunting or gathering, where being physically separated was common. It is widely believed that spoken language emerged as a result of natural selection. As Pinker (2015) points out, "selection does not need great advantages. Given the vastness of time, tiny advantages will do" (p. 365). Over long evolutionary periods, small advantages can accumulate into significant ones. This can be said of language. While gestural communication can convey complex information, there must have been environmental or social pressures that favored the development of spoken language.

Great apes, who share a common ancestor with modern humans, use gestures for simple communication. As Lieberman (1998) explains, "Both anatomy and brain had to evolve from the primate base of the human-ape common ancestor to make human speech, language, thought, and culture possible" (pp. 17-18). Great apes, like humans, use gestures to convey a variety of emotions, which lends credibility to the idea that our shared ancestor used a protolanguage that at least consisted of gestures, possibly accompanied by basic sounds or calls that gradually evolved into spoken language. It is possible that other great apes are capable of complex communication that humans have yet to decipher because of its complexity and intricacy. Although their communication resembles human language in certain ways, human language is undeniably more complex in structure and function.

Other animal communication systems also exhibit similarities to human language. Vervet monkeys, for example, use distinct alarm calls for various predators (Maynard Smith & Szathmáry, 1999). This is comparable to human language, where different words or sounds signify specific threats or entities. Like humans, birds also demonstrate a critical period for learning vocalizations. Songbirds must be exposed to a song early on for them to be able to learn it. Songbirds produce sounds for a variety of reasons; for example, to express emotion, to attract the interests of others, and to inform others of imminent danger (Corballis, 2002). These functions closely mirror human uses of vocal communication. Some researchers have speculated about a common ancestor between humans and birds, though it is more likely a coincidental result of convergent evolution, where different species possessing analogous traits that evolved independently over a significant period of time. Everett (2017) asserts that:

> Language did not begin with gestures, nor with singing, nor with limitations of animal sounds. Languages began via culturally oriented symbols. Humans ordered these initial symbols and formed larger symbols from them. At the same time symbols were accompanied by gestures and pitch modulation of the voice: intonation. (p. xvii)

Whether language began with gestures, vocalizations such as grunts or clicks, or a combination of the two, will likely remain an open question. What is evident is that great apes with which we share a common ancestor communicate through gestures, and that human infants begin communicating with gestures before transitioning to speech. Both observations lend support to the idea that early humans likely began communicating through gestural means before spoken language became dominant.

Ⅴ. Conclusion

Some scholars argue that language is innate, something encoded in our DNA, and too complicated to learn. Others challenge this idea, viewing language as a socially constructed system that likely developed over a long period of time due to environmental and social factors. Spoken language may have arisen in response to social and environmental factors that created a selective pressure for verbal communication, with mentalese developing as a byproduct. A synergistic relationship may have emerged between internal thought and external communication, each reinforcing each other and pushing the cognitive boundaries of early humans and contributing to brain development. It remains unclear whether humans developed the ability to speak due to increased brain size after diverging from other great apes, enhanced cognitive capacity, a genetic mutation, or because it is an innate human trait. What is known is that language emerged after our evolutionary split from other great apes and gradually developed into the complex systems we now recognize as human language. Numerous theories exist about when language first emerged, but no consensus has been reached. Estimates vary widely, with some suggesting it appeared tens of thousands, hundreds of thousands, or even millions of years ago.

Many scholars continue to debate whether human language began with gestures, vocalizations, or a combination of both. Observing how infants acquire language may offer insights; they begin by producing sounds, then incorporate gestures, and eventually the sounds evolve into articulate words often accompanied by gestures. Similarly, great apes, our closest living relatives, use both gestures and sounds to communicate, suggesting that early human language may have followed a similar trajectory. If language began with gestures, the transition from gestural to vocal communication was likely gradual, driven by environmental factors such as the need to communicate across distances or in darkness. Over tens of thousands, hundreds of thousands, or perhaps millions of years, early protolanguages likely evolved from rudimentary systems into complex languages, encompassing gestures and speech. The origin of language remains one of the most enduring mysteries in science. We may never fully understand when, why, or how humans first developed language. However, continued interdisciplinary research may bring us closer to uncovering the biological and cognitive foundations of human language.

References

Aitchison, J. (1996). *The seeds of speech: Language origin and evolution*. Cambridge University Press.
Armstrong, D., & Wilcox, S. (2007). *The gestural origin of language*. Cambridge University Press.
Berwick, R. C., & Chomsky, N. (2017). *Why only us. Language and evolution*. MIT Press.
Bickerton, D. (2009). *Adam's tongue: How humans made language, how language made humans*. Hill and Wang.
Chomsky, N. (1981). *Lectures on government and binding*. Mouton de Gruyter.
Chomsky, N. (2002). *On language and nature* (A. Belletti & L. Rizzi, Eds.). Cambridge University Press.
Corballis, M. C. (2002). *From hand to mouth*. Princeton University Press.
Corballis, M. C. (2017). *The truth about language. What it is and where it came from*. University of Chicago Press.
Collins Dictionary. mentalese. In Collins Dictionary. Retrieved April 11, 2025.
https://www.collinsdictionary.com/dictionary/english/mentalese
Dawkins, R., & Wong Y. (2017). *The ancestor's tale: A pilgrimage to the dawn of life*. Weidenfeld & Nicolson.
Deutscher, G. (2005). *The unfolding of language: An evolutionary tour of mankind's great invention*. Picador.
Everett, D. (2017). *How language began: The story of humanity's greatest invention*. Profile Books.
Gärdenfors, P. (2006). *How Homo became sapiens: On the evolution of thinking*. Oxford University Press.
Harari, Y. N. (2011). *Sapiens: A brief history of humankind*. Penguin Random House.
Janson, T. (2012). *The history of languages: An introduction*. Oxford University Press.
Kendon, A. (2004). *Gesture; Visible action as utterance*. Cambridge University Press.
Kenneally, C. (2007). *The first word: A search for the origins or language*. Penguin Books.
Lieberman, P. (1991). *Uniquely human: The evolution of speech, thought, and selfless behavior*. Harvard University Press.
Lieberman, P. (1998). *Eve spoke: Human language and human evolution*. Norton.
Lieberman, P. (2010). The creative capacity of language, in what manner is it unique, and who had it? In R. K. Larson, V. Déprez, & R. Yamakido (Eds.), *The evolution of human language: Biolinguistic perspectives* (pp. 163-175). Cambridge University Press.
McNeill, D. (2012). *How language began: Gesture and speech in human evolution*. Cambridge University Press.
McWhorter, J. (2003). *The power of babel: A natural history of language*. Parennial.
Maynard Smith, J. & Szathmáry, E. (1999). *The origins of life*. Oxford University Press.
Pinker, S. (2015). *The language instinct: How the mind creates language*. Penguin Books.
Planer, R. J., & Sterelny, K. (2021). *From signal to symbol*: The evolution of language. MIT Press.
Rousseau. J-J. (1966). Essay on the origin of languages (J. H. Moran & A. Gode, Trans.). In *Two essays on the origin of language* (pp. 2-74). The University of Chicago Press. (Original work published 1852).
Tomasello, M. (2010). *Origins of human communication*. MIT Press.