FUTURE SCIENCE

HOW LANGUAGE WORKS: A BEGINNER'S GUIDE TO LINGUISTICS

Editor :
Dr. Baiatun Nisa, M.Pd

Penulis :
Dwi Indarti I Loso Judijanto I Muhammad Yazidus Syukri
Paramita Kusumawardhani I Nurhayati S. I Nurul Fitriani
Prapti Wigati Purwaningrum I Abd. Hakim Muslim
Mutia Nasution I Akhmad Hairul Umam
Stefanus Angga B. Prima I Andreas Noreewec

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PREFACE

Language is one of the most powerful tools that humans possess. It shapes our thoughts, connects us across cultures, and allows us to make sense of the world. But have you ever wondered how language actually works? What systems lie beneath the surface of the words we use every day?

How Language Works: A Beginner's Guide to Linguistics is written for readers who are new to the field of linguistics. The content has been carefully curated and refined to ensure that key concepts are presented in a clear, engaging, and accessible manner. Whether the reader is a university student, a language educator, or simply a curious learner, this guide is designed to provide a structured introduction to the fundamental areas of linguistic study.

The chapters explore the core components of language, including phonetics, phonology, morphology, syntax, semantics, pragmatics, sociolinguistics, psycholinguistics, and discourse analysis. Each chapter is structured to build understanding progressively, enriched with real-world examples that highlight the relevance of linguistic principles in everyday life.

Our goal is not only to provide knowledge but to foster curiosity. Language is a dynamic and evolving phenomenon, and through this book, we hope to inspire readers to think more deeply about how language shapes human experience.

May this guide be a useful and stimulating starting point in your journey into the fascinating world of linguistics.

Malang, September 2025

Editor

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CHAPTER 1
WHAT IS LINGUISTICS? AN OVERVIEW

Dwi Indarti
Universitas Bina Sarana Informatika, Jakarta
E-mail: dwi.diw@bsi.ac.id

INTRODUCTION TO LINGUISTICS

Language is one of the most distinctive features of human life. It allows us to convey ideas, express emotions, ask questions, tell stories, and build societies. Although we often use language without consciously thinking about it, the system behind how language work is complex. This is where linguistics comes in. Linguistics is the scientific study of language. It seeks to understand the structure of language, how it is used, how it is learned, and how it changes over time (Denham & Lobeck, 2021). As a field of study, linguistics explores the universal properties of language as well as the unique characteristics of individual languages spoken around the world (Anderson, 2021). At its core, linguistics aims to describe and analyze the patterns found in human language. Rather than prescribing how people *should* speak, linguists focus on how people *actually* use language in real-life contexts (Bauer, 2023). Linguistics is not merely mastering many languages; instead, it is about analyzing how languages work, both individually and collectively (Denham & Lobeck, 2021). This includes exploring spoken and written forms of language, as well as sign languages, which are fully developed systems of communication with their own rules and structures (Crystal, 2020). The field encompasses a wide range of interests, including how children acquire language, how languages relate to thought and culture, and how languages evolve and influence one another (Coulmas, 2019).

Understanding linguistics is important for some reasons. First, it gives us insight into human cognition. Language is closely tied to how we process information and interact with the world, and studying linguistics can deepen our understanding of the human mind (Anderson, 2021). Linguistic is also crucial in education and language learning. Insights from linguistics research inform language teaching methods, curriculum design, and assessment practices (Denham & Lobeck, 2021). Moreover, in an era of rapid globalization and digital communication, linguistic knowledge is essential for effective cross-cultural communication, translation, and technology development, including speech recognition and artificial intelligence (Coulmas, 2019). By better understanding the relationship between language and power, linguistics helps promote more inclusive and equitable communication (Bauer, 2023). Despite its relevance, linguistics is often misunderstood. One common misconception is that linguists are simply polyglots, people who speak many languages. While many linguists do know more than one language, their expertise lies in analyzing language systems rather than memorizing vocabulary or grammar rules (Denham & Lobeck, 2021). Another frequent misunderstanding is that linguists act as grammar enforces, judging people's speech for correctness. In reality, linguists are not concerned with labeling certain forms of speech as "right" or "wrong". Instead, they study how language varies across regions, communities, and situations, and how all forms of language use are systematic and meaningful in their own contexts (Crystal, 2020). It is also mistakenly believed that some languages are inherently better or more advanced than others. In truth, every natural language is equally capable of expressing complex ideas (Bauer, 2023). All languages are governed by rules and exhibit creativity and structure. Another myth is that children learn language purely by imitating adults. Research shows that

language acquisition requires an innate ability to grasp and apply grammatical rules. Children often produce sentences they never heard before, which suggests that language learning is deeply rooted in human cognition (Denham & Lobeck, 2021).

The formal study of language has a rich history, with contributions from various cultures and thinkers throughout the centuries. One of the earliest known linguistic scholars was Panini, an Indian grammarian who lived around 500 BCE. His work on Sanskrit grammar, especially in the *Ashtadhyayi*, represents one of the most comprehensive and systematic accounts of a language ever written. Panini developed a formal set of rules that closely resemble modern approaches to language analysis, making him a foundational figure in linguistic field (Bauer, 2023). Fast forward to the early 20th century, when the Swiss linguist Ferdinand de Saussure introduced a groundbreaking perspective on language structure. Saussure emphasized the importance of studying language as a system of signs, where meaning arises from the relationships between elements rather than from isolated words. He distinguished between langue (the underlying system of a language) and parole (individual acts of speech), shifting linguistic inquiry from historical comparisons to the structural analysis of language at a given point in time (Anderson, 2021). His ideas laid the foundation for structuralism, influencing not only linguistics but also other fields such as anthropology and literary theory. In the mid-20th century, Noam Chomsky, an American linguist, revolutionized the study of language with his theory of generative grammar. Chomsky argued than humans are born with an innate knowledge of language. This idea challenged the behaviorist view that language learning is solely the result of conditioning and imitation. Instead, Chomsky proposed that children naturally construct grammatical rules based on limited input, suggesting that language is a biologically

determined capacity (Denham & Lobeck, 2021). His work positioned linguistics as a branch of cognitive science and opened new avenues for exploring the mental processes involved in language use.

Since then, linguistics has expanded in numerous directions, often intersecting with other disciplines. Scholars now use large digital text databases (corpora) to study real-life language use, investigate how language reflects social identities, and use brain imaging techniques to study how language is processed neurologically (Crystal, 2020). The rise of computational linguistics has also brought linguistics into the realm of technology, contributing to machine translation, text analysis, and human-computer interaction (Coulmas, 2019). Linguists today work across academia, education, healthcare, government, and industry, applying their knowledge to real-world challenges and innovations (Bauer, 2023). In conclusion, linguistics is not merely about words and grammar rules; it is about understanding one of the most fundamental aspects of human life: our ability to communicate through language. It explores how language shapes thought, identity, and society, and how it evolves across time and cultures (Anderson, 2021). By studying linguistics, we gain valuable tools to better understand ourselves and others, to bridge cultural divides, and to engage more thoughtfully with the world around us.

MAJOR BRANCHES OF LINGUISTICS

Linguistics is a multidisciplinary field that investigates the structure, use, and development of human language. As a broad and evolving discipline, it is traditionally divided into several major branches, each focusing on distinct aspects of language. These core branches include phonetics, phonology, morphology, syntax, semantics, and pragmatics. Beyond these, applied branches such as sociolinguistics, psycholinguistics, and

computational linguistics extend the reach of linguistic inquiry into practical and interdisciplinary domains. Each branch offers unique insights and addresses specific goals and questions, contributing to a comprehensive understanding of language in both theoretical and applied contexts.

PHONETICS

Phonetics is the study of physical properties of speech sounds. It examines how speech sounds are produced (articulatory phonetics), transmitted (acoustic phonetics), and perceived (auditory phonetics). The goal of phonetics is to describe and classify the sounds of human speech in a systematic manner. Key questions in phonetics include: How are different speech sounds produced across languages? What are the acoustic characteristics that distinguish one sound from another? For example, the International Phonetic Alphabet (IPA) serves as a tool to transcribe the sounds of any spoken language based on their articulatory features. Phonetic research continues to be enriched by technological advances. According to Ladefoged & Johnson (2021), developments in speech analysis software have improved the precision of acoustic measurements, making phonetics more data-driven and accessible to various language-related applications, including forensic linguistics and language acquisition studies.

PHONOLOGY

Closely related to phonetics, phonology focuses on the abstract, cognitive aspects of sounds in language. It studies the sound systems and the rules that govern sound patterns in particular languages. While phonetics is concerned with the physical realization of sounds, phonology investigates how sounds function in a given linguistic system. The primary goal is to understand how sounds are organized in the mind and how

they interact within a language. Key questions include: What sound contrasts are meaningful in a language? How do phonological rules vary across languages and dialects? For instance, English distinguishes between /p/ and /b/ as separate phonemes, while other languages may not. Contemporary research, such as Odden (2022), explores phonological patterns in lesser-studied languages to contribute to typological generalizations and theoretical models, including Optimality Theory.

MORPHOLOGY

This branch examines the internal structure of words and the rules by which words are formed. It analyzes morphemes (the smallest units of meaning) and their combinations. The goals of morphology include understanding how words are built from morphemes and how morphological process vary across languages. Key questions include: How do inflection, derivation, and compounding operate in different linguistic systems? How does morphology interact with syntax and phonology? For example, the English word *unhappiness* consists of three morphemes: *un-*, *happy*, and *-ness*. Aronoff & Fudeman (2022) highlight that morphological typology (e.g., isolating, agglutinative, fusional languages) informs our understanding of linguistic diversity and cognitive processing in language production and comprehension.

SYNTAX

This branch is concerned with the rules that govern the structure of sentences. It studies how words are combined to form phrases and clauses, and how these units are hierarchically organized. The primary goal is to uncover the underlying grammatical structures shared across languages and their theoretical representation. Key questions include: What are the

universal principles of sentence structure? How do syntactic structures differ across languages? For instance, the basic word order Subject-Verb-Object (SVO) is common in English, while Subject-Object-Verb (SOV) is dominant in Japanese. Syntactic theories, such as Chomsky's (1995) Minimalist Program, aim to model language as an optimal and economical computational system. Recent developments in syntax, as noted by Adger (2023), focus on the interface between syntax and other domains such as semantics and morphology, and emphasize the role of syntactic structure in language acquisition and processing.

SEMANTICS

Semantics involves the study of meaning in language. It seeks to explain how words, phrases, and sentences convey meaning and how these meanings are structured and interpreted. The goals of semantics are to construct formal representations of meaning and to identify universal and language-specific features of meaning. Key questions include: How do linguistic expressions refer to entities, events, and concepts? How are ambiguities and entailments resolved? For example, the sentence *All students passed the test* implies that no student failed, which is an entailment derived from its semantic structure. Heim & Kratzer (2019) argue that formal semantics, using tools such as predicate logic and type theory, provides a rigorous framework for analyzing compositional meaning. Recent semantic research also intersects with cognitive linguistics, exploring how conceptual structures and metaphor shape meaning (Evans, 2020).

PRAGMATICS

Pragmatics, on the other hand, studies meaning in context. It focuses on how speakers use language in social interactions and how listeners infer meaning based on contextual cues. The

goal of pragmatics is to understand how language users manage meaning beyond the literal interpretation of utterances. Key questions include: How do speakers convey intentions? How is implied meaning (implicature) interpreted? How do context and shared knowledge influence communication? For instance, saying *Can you open the window?* Is often interpreted as a polite request, not merely a question about ability. Pragmatics is also concerned with phenomena such as speech acts, deixis, and politeness strategies. As reported by Yule (1996), pragmatic competence is essential for effective communication and is increasingly important in second language acquisition, intercultural communication, and digital discourse.

SOCIOLINGUISTICS

In addition to these core branches, sociolinguistics examines the relationship between language and society. It investigates how social factors such as region, class, gender, age, and ethnicity influence language use. The goals of sociolinguistics include understanding language variation, language attitudes, and the social meanings encoded in language. Key questions include: How do dialects and sociolects emerge and change? How do language ideologies shape linguistic identity? An example of sociolinguistic variation is the use of non-standard grammar in certain speech communities, such as *ain't* in Africa American Vernacular English (AAVE). Recent research by Tagliamonte (2021) highlights how sociolinguistic patterns can reveal broader issues of inequality, identity construction, and linguistic change.

PSYCHOLINGUISTICS

This branch bridges linguistics and psychology to study how language is processed in the brain. It explores how individuals comprehend, produce, and acquire language. The

goals of psycholinguistics include modeling the cognitive mechanisms underlying language use and understanding language disorders. Key questions include: How is language stored and accessed in the mind? How do children acquire their first language? What are the effects of bilingualism on cognition? For example, eye-tracking experiments have shown that listeners anticipate upcoming words during sentence comprehension. Researchers such as Altmann & Mirkovic (2022) emphasize the integration of behavioral, neuroimaging, and computational approaches to study the time course and mental architecture of language processing.

COMPUTATIONAL LINGUISTICS

This is an interdisciplinary field combining linguistics and computer science, focuses on the computational modeling of natural language. Its goals include developing algorithms and systems for automatic language processing, such as speech recognition, machine translation, and sentiment analysis. Key questions include: How can linguistic knowledge be formalized for computational implementation? What models best represent learning and use? A practical example is the use of large language models, such as BERT and GPT, which perform various tasks such as question answering and text summarization. According to Jurafsky & Martin (2023), recent advances in deep learning have significantly improved performance in natural language understanding, though challenges remain in areas such as contextual inference, bias mitigation, and linguistic explainability.

Moreover, emerging interdisciplinary areas continue to expand the scope of linguistics. For example, neurolinguistics investigates how language is represented in the brain, often through the study of aphasia and brain imaging techniques. Corpus linguistics involves the analysis of large databases of

real-world text to study patterns of language use. Critical Discourse Analysis (CDA) applies linguistic tools to investigate how language constructs social power and ideology, often in media and political discourse (Wodak & Meyer, 2021). These developments show how linguistics is not only a theoretical science but also a practical and socially relevant field.

APPLIED LINGUISTICS: DEFINITION, SCOPE, AND FIELDS OF APPLICATION

DEFINITION AND SCOPE

Applied linguistics is an interdisciplinary field concerned with solving real-world problems related to language. It draws from core areas of linguistics, such as syntax, phonology, semantics and pragmatics, and applies them in domains such as education, law, technology, and communication (Cook, 2003). According to the British Association for Applied Linguistics (BAAL), applied linguistics involves "the theoretical and empirical investigation of real-world problems in which language is a central issue" (Mohamed, 2023). Historically emerging after World War II, the field gained momentum through institutions like BAAL, the American Association for Applied Linguistics (AAAL), and the International Association of Applied Linguistics (AILA). Unlike theoretical linguistics, which seeks to describe language systems, applied linguistics is problem-driven and focuses on practical outcomes. It incorporates diverse methodologies, qualitative, quantitative, mixed-methods, and computational approaches, making it suitable for tacking issues ranging from classroom language learning to AI-generated authorship attribution.

FIELDS OF APPLICATION

Language Teaching and Learning (TESOL, SLA)

In the field of language teaching, especially Teaching English to Speakers of Other Languages (TESOL) and Second Language Acquisition (SLA), applied linguistics informs curriculum design, methodology, and assessment. A key development has been Task-Based Language Teaching (TBLT), which positions tasks as the central unit of planning and instruction. TBLT is grounded in sociocultural theory and complex dynamic systems, emphasizing learning through communication in meaningful contexts (Jackson, 2024). TBLT helps learners acquire language skills by engaging them in real-life problem-solving activities. Dorathy & Mahalakshmi (2016) emphasize that TBLT maximizes both teaching efficiency and learner autonomy. In adult education contexts, input-based tasks have been designed to create form-meaning connections, especially for learners with limited prior education (Beaulieu & Fortier, 2024). Another important concept is translanguaging, which allows learners to leverage their full linguistic repertoire, including first languages, in learning English. This approach not only enhances comprehension and engagement but also promotes equity in linguistically diverse classrooms.

Language Assessment

Language assessment is another major area within applied linguistics. It encompasses the design, development, and evaluation of tools to measure language proficiency, performance, and usage. Modern developments in psychometrics, corpus linguistics, and cognitive linguistics have enhanced the validity and reliability of tests. Vocabulary assessment tools increasingly use Rasch scaling and item response theory to improve measurement accuracy. Moreover,

corpus-based studies of learner language have led to the creation of indices for syntactic complexity and lexical richness, used in writing assessments to objectively evaluate proficiency (Lu, 2017). In addition, with the rise of AI-generated texts, psycholinguistic methods and stylometric tools are being integrated into language assessment to differentiate between human-and AI-written language.

Language Policy and Planning

Applied linguistics also plays a critical role in shaping language policy and planning. Issues of language status, rights, preservation, and education fall under this domain. Increasingly, applied linguists promote translanguaging not only as pedagogical tool but as a policy approach to support linguistic diversity and equity. For example, studies on Jordanian graduate students in English-speaking countries reveal how language policies impact integration, identity formation, and academic success. In K-12 classrooms, particularly in science education, integrating students' home languages fosters a better understanding of complex concepts and bridges cultural gaps. Policymakers are now encouraged to co-create curricula with educators and communities to promote inclusive, multilingual learning environments (Sciedu Press, 2023).

Translation and Interpretation

Translation and interpretation involve applying principles to cross-language communication. Applied linguistics contributes to this field by providing theoretical frameworks and empirical tools to analyze equivalence, pragmatics, and cultural nuances in translation. In recent years, the field has expanded into corpus-based translation studies, where digital corpora are used to compare source and target texts for features like idiomaticity and syntactic fidelity. Cognitive studies using eye-tracking and

keystroke logging help identify the mental processes behind interpreting and post-editing machine translation. Ethical considerations are also gaining prominence, especially in interpreting for public institutions.

Forensic Linguistics

Forensic linguistics applies language analysis to legal contexts. It includes authorship attribution, voice identification, threat analysis, and detecting deceptive speech. One emerging challenge is distinguishing human-generated from AI-generated text, which is now relevant in cybercrime, academic misconduct, and digital forensics. Forensic linguistics is a specialized branch of applied linguistics that explores the intricate relationship between language and the law. It involves the analysis of spoken or written texts in legal and criminal investigations, helping uncover truths and ensure justice. One of its core areas is authorship attribution, where experts determine the likely writer of an anonymous or disputed text, such as threatening letters or ransom notes, through stylistic and lexical analysis. Forensic linguists also examine how language is used in legal settings, such as police interrogations, courtroom discourse, and legal documents, revealing power dynamics, manipulation, or misunderstandings. The field extends to forensic phonetics, where voice recordings are analyzed to identify or eliminate suspects based on speech patterns, accent, or intonation. In addition, linguists study the clarity of legal language, such as contracts or warnings, to assess whether it is comprehensible to the general public. Forensic linguistics also plays a crucial role in detecting plagiarism, resolving trademark disputes, and analyzing suicide or threat notes for signs of authenticity or deception. Pioneers like Malcolm Coulthard and John Olsson have contributed significantly to the field, using linguistic expertise in real-life criminal cases. Notable examples include

the Unabomber case, where linguistic evidence helped identify Ted Kaczynski, and the discovery of J.K. Rowling's pseudonymous authorship of *The Cuckoo's Calling*. Through tools like corpus linguistics, discourse analysis, and stylometry, forensic linguistics bridges language and law, highlighting how words can serve as powerful tools in the pursuit of truth and justice.

CONSLUSION

Linguistics is a dynamic and interdisciplinary field that offers profound insights into one of the most fundamental aspects of human life. From its roots in ancient grammar traditions, such as Panini's work on Sanskrit, to the groundbreaking theories of Saussure and Chomsky, linguistics has evolved into a multifaceted discipline that not only explains how language works but also how it shapes our understanding of the world. As demonstrated in this overview, linguistics encompasses both theoretical domains, such as phonetics, phonology, morphology, syntax, semantics, and pragmatics, and applied branches like sociolinguistics, psycholinguistics, and computational linguistics. These diverse areas collectively help us understand how language is structured, how it is used in different social contexts, and how it is processed by the human mind.

In addition to theoretical exploration, applied linguistics plays a critical role in addressing real-world issues. Whether through enhancing language teaching and assessment, informing language policy, guiding translation practices, or contributing to legal investigations through forensic linguistics, the field of linguistics extends far beyond academic theory into practical, everyday applications. The rise of digital technologies and artificial intelligence has further expanded the scope of linguistics, creating new opportunities and challenges in fields

such as machine translation, natural language processing, and voice recognition.

Understanding linguistics not only enhances our cognitive and cultural awareness but also fosters empathy and effective communication in an increasingly globalized world. It allows us to appreciate linguistic diversity, challenge misconceptions, and advocate for more equitable language practices across societies. Far from being limited to grammar rules or multiple language proficiencies, the true essence of linguistics lies in uncovering the systems, patterns, and purposes that govern human communication. In sum, studying linguistics equips us with the tools to analyze, interpret, and appreciate the complexity of language. It bridges scientific inquiry with human experience, offering a lens through which we can better understand ourselves, others, and the intricate web of communication that connects us all.

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AUTHOR'S PROFILE

Dwi Indarti

The author residences in Kabupaten Tangerang, Banten, but her most current activities take place in Jakarta area. She is now undergoing Doctoral degree majoring in Applied English Linguistics at Catholic University of Indonesia Atma Jaya, Jakarta. Her research fields covering applied linguistics, literature, translation, and corpus linguistics. She has published research articles in national accredited journals, such as Studies in English Language and Education (SiELE) journal (SINTA 1, Scopus Q1), Journal of Languages and Language Teaching (JOLLT) journal (SINTA 2), Lingua Cultura journal (SINTA 2), and more.

CHAPTER 2
THE SOUNDS OF LANGUAGE: INTRODUCTION TO PHONETICS

Loso Judijanto
IPOSS Jakarta
E-mail: losojudijantobumn@gmail.com

INTRODUCTION

Phonetics is the scientific study of speech sounds, focusing on their physical production, acoustic properties, and perceptual characteristics. It examines how humans use anatomical structures like the tongue, lips, and vocal cords to generate sounds, how these sounds travel as sound waves, and how listeners decode them. This field forms the foundation for understanding the mechanics of spoken language, bridging the gap between abstract linguistic concepts and tangible sound patterns(Farkhadovna, 2022; Kizi, 2023).

Why Study the Sounds of Language?

Studying phonetics is essential for unraveling the complexities of human communication. It provides insights into how sounds differentiate meaning-for example, distinguishing "*pat*" from "*bat*" through subtle articulatory variations. This knowledge is pivotal for language learners striving to master unfamiliar sounds, such as the English "th" or Spanish rolled "r," and for reducing accents to enhance clarity. Beyond language acquisition, phonetics informs speech therapy, helping individuals overcome articulation disorders, and drives advancements in speech recognition technology(Kurniawan et al., 2022).

Phonetics vs. Phonology: A Brief Distinction

While phonetics analyzes the physical aspects of speech, phonology focuses on how sounds function systematically within a language. Phonetics deals with concrete sound production (e.g., the airflow obstruction in "t"), whereas phonology investigates abstract patterns, such as why certain sounds never occur together in a language. For instance, phonetics might describe the acoustic properties of a vowel, while phonology explains why that vowel changes in plural forms (e.g., "*mouse*" vs. "*mice*")(Maharani et al., 2023).

Subfields of Phonetics

Phonetics is divided into three branches:

1. **Articulatory phonetics**: Studies how speech organs produce sounds (e.g., the role of the glottis in voicing).
2. **Acoustic phonetics**: Analyzes sound waves, measuring properties like frequency and amplitude using tools like spectrograms.
3. **Auditory phonetics**: Explores how listeners perceive and neurologically process sounds(Lubis et al., 2023).

Interdisciplinary Applications

Phonetics intersects with fields such as linguistics, psychology, and technology. For example, it aids in developing synthetic speech systems by modeling human articulation. It also reveals cross-linguistic differences, showing how Japanese speakers perceive English "l" and "r" as a single sound. Such findings underscore the adaptability of phonetic systems across cultures(Cushing & Hellmuth, 2016).

The Relevance of Phonetic Research

Modern phonetic research challenges earlier assumptions of universal sound production, demonstrating that languages

occupy distinct "*phonetic spaces*". For example, Spanish and English vowels differ acoustically even when transcribed similarly. These discoveries highlight the need for nuanced approaches in language teaching, clinical practice, and AI-driven speech technologies(Kizi, 2023).

THE NATURE OF SPEECH SOUNDS

Speech sounds emerge from a coordinated interplay of anatomical structures and physiological processes. The human vocal apparatus transforms breath into complex acoustic signals through precisely timed movements, with each organ contributing distinct elements to phonetic production.

How Humans Produce Speech

Human speech production relies on three interconnected systems: respiration, phonation, and articulation. The lungs generate airflow, which passes through the larynx, causing the vocal cords to vibrate and produce sound waves. These waves are then shaped by the oral and nasal cavities, along with articulators like the tongue and lips, to form recognizable speech sounds(Anderson, Bjorkman, Denis, et al., 2022). This process involves both voluntary muscle control and subconscious adjustments to achieve precise phonetic outcomes.

The Anatomy of Speech: Key Organs Involved

Lungs

As the primary power source for speech, the lungs regulate airflow through controlled exhalation. Subglottal air pressure created by the lungs determines vocal intensity and enables sustained phonation. During speech, diaphragmatic contractions maintain steady airflow, allowing continuous sound production

without frequent pauses for inhalation(Anderson, Bjorkman, Denis, et al., 2022).

Vocal Cords (Larynx)

Located within the larynx, the vocal cords act as biomechanical oscillators. When adducted, their vibration converts airflow into the audible phonation, a process fundamental to voiced sounds like vowels. The cords' tension and mass adjust dynamically through laryngeal muscles, enabling pitch modulation from 60 Hz in deep voices to over 1,000 Hz in falsetto. Voiceless consonants (/s/, /f/) occur when the cords remain abducted, allowing turbulent airflow without oscillation(Sakinah et al., 2024).

Oral and Nasal Cavities

These resonating chambers modify laryngeal sounds through acoustic filtering. The oral cavity's shape determines vowel quality, while nasal cavity coupling (controlled by the velum) produces nasal consonants (/m/, /n/). Cavity volumes affect formant frequencies, with larger spaces lowering resonant frequencies to create "*darker*" timbres(Anderson, Bjorkman, Denis, et al., 2022).

Tongue, Lips, Teeth, and Palate

Articulators create consonant constrictions:

- **Tongue**: Alveolar (/t/, /d/) and palatal (/j/) sounds via contact with the upper mouth
- **Lips**: Bilabial stops (/p/, /b/) and rounded vowels through protrusion
- **Teeth**: Dental fricatives (/θ/, /ð/) via tongue contact
- **Palate**: Velar stops (/k/, /g/) using the tongue's posterior(Sakinah et al., 2024)

Precise articulator coordination achieves speech rates exceeding 15 phonemes per second, with coarticulation allowing smooth transitions between sounds(Yani Lubis et al., 2025).

Physiological and Cultural Influences

While speech anatomy is universal, pronunciation patterns reflect linguistic and social factors. The vocal tract adapts to language-specific phonemes through neuromuscular training in childhood, leading to accent formation. For instance, French speakers develop habitual velar lowering for nasal vowels, while Arabic phonology requires precise uvular control(Sakinah et al., 2024). These adaptations demonstrate the interplay between biological capacity and cultural linguistic norms.

THE BRANCHES OF PHONETICS

Articulatory Phonetics: How Sounds Are Made

Articulatory phonetics examines how humans produce speech sounds using the vocal tract. This branch focuses on the precise movements of the tongue, lips, velum, and other articulators to create consonants, vowels, and other phonemes. For example, the distinction between /t/ (as in "*tap*") and /k/ (as in "*cap*") arises from the tongue contacting the alveolar ridge versus the velum, respectively (Ladefoged & Johnson, 2021). Researchers use tools like ultrasound and electropalatography to visualize these movements, offering insights into cross-linguistic sound patterns and speech disorders.

A key concept in articulatory phonetics is the manner of articulation, which classifies sounds based on airflow obstruction. Stops (e.g., /p/), fricatives (e.g., /s/), and approximants (e.g., /w/) each involve distinct configurations. For instance, fricatives require turbulent airflow through a narrow channel, while stops involve a complete closure

(Johnson, 2022). Such distinctions help explain why certain sounds are more prevalent in global languages or challenging for language learners.

Acoustic Phonetics: The Physical Properties of Sound

Acoustic phonetics analyzes the physical characteristics of speech sounds, such as frequency, amplitude, and duration. Using instruments like spectrograms, researchers visualize sound waves to identify formants-resonant frequencies that distinguish vowels (Stevens, 2000). For example, the vowel /i/ (as in "*see*") has higher formants than /ɑ/ (as in "*father*"), reflecting differences in tongue position.

This branch also explores how environmental factors, like background noise, alter sound transmission. A study found that whispered speech reduces high-frequency acoustic cues, complicating vowel perception (Hillenbrand, 2011). Such findings inform technologies like speech synthesis and noise-canceling algorithms, bridging linguistics with engineering.

Auditory Phonetics: How We Perceive Sounds

Auditory phonetics investigates how the ear and brain decode speech signals. The cochlea separates sounds into frequency components, which the auditory nerve transmits to the brain for processing (Moore & Malicka, 2013). A phenomenon like categorical perception-where listeners group continuous acoustic variations into discrete categories (e.g., /b/ vs. /p/)-highlights the brain's role in interpreting speech (Samuel, 2020).

Individual differences in hearing sensitivity or cognitive processing also affect perception. For example, tonal language speakers show enhanced pitch discrimination compared to non-tonal speakers (Bidelman et al., 2020). Additionally, the McGurk effect demonstrates how visual cues (e.g., lip

movements) override auditory input, revealing the multisensory nature of speech perception (Vainio et al., 2014).

Interdisciplinary Connections

These branches intersect in real-world applications. Articulatory data improve text-to-speech systems, acoustic analyses aid forensic linguistics, and auditory research shapes hearing aid design. For instance, formant synthesis-rooted in acoustic principles-enables natural-sounding synthetic voices (Klatt, 1987).

Challenges and Future Directions

Advances in neuroimaging and machine learning are reshaping phonetics. Researchers now use fMRI to map brain regions involved in speech production and perception (Hickok & Poeppel, 2007). Meanwhile, AI models trained on articulatory and acoustic data promise breakthroughs in automatic speech recognition, though challenges like dialectal variation persist (Zhang et al., 2022).

CLASSIFYING SPEECH SOUNDS

Human speech sounds are organized into two primary categories: consonants and vowels. Consonants involve partial or complete obstruction of airflow in the vocal tract, while vowels allow unrestricted airflow, creating resonant tones(Salamah & Setiawati, 2024). This distinction forms the foundation for analyzing speech production.

Consonants vs. Vowels: The Two Main Categories

Consonants are defined by controlled airflow obstruction, producing sounds like /p/ or /s/, whereas vowels rely on open vocal tract configurations to create sustained tones like /i/ or /u/.

This binary classification enables systematic analysis of articulation mechanics across languages(Wiranda et al., 2023).

Describing Consonants

Place of Articulation refers to where airflow is restricted. Key locations include:

- **Bilabial**: Both lips (e.g., /p/, /b/)
- **Alveolar**: Tongue against alveolar ridge (e.g., /t/, /d/)
- **Velar**: Back tongue against soft palate (e.g., /k/, /g/) .

Manner of Articulation describes how airflow is modified:

- **Plosives**: Complete closure followed by explosive release (e.g., /k/, /g/)
- **Fricatives**: Narrow passage creating turbulence (e.g., /s/, /f/)
- **Nasals**: Airflow through nasal cavity (e.g., /m/, /n/).

Voicing distinguishes sounds using vocal cord vibration:

- **Voiceless**: No vibration (e.g., /p/, /t/)
- **Voiced**: Vibration present (e.g., /b/, /d/)(Wiranda et al., 2023).

Describing Vowels

Tongue Height categorizes vowels by vertical tongue position:

- **High**: Tongue near palate (e.g., /i/ in "beat")
- **Mid**: Intermediate position (e.g., /e/ in "bet")
- **Low**: Jaw open, tongue lowered (e.g., /æ/ in "bat").

Tongue Position indicates horizontal placement:

- **Front**: Tongue toward teeth (e.g., /i/)
- **Central**: Neutral position (e.g., /ə/ in "about")
- **Back**: Tongue retracted (e.g., /u/ in "boot").

Lip Rounding affects vowel quality:

- **Rounded**: Lips protruded (e.g., /u/)
- **Unrounded**: Lips relaxed (e.g., /i/)(Anderson, Bjorkman, Jenis, et al., 2022).

This framework enables a precise description of speech sounds, essential for understanding phonetic diversity across languages. By analyzing these parameters, linguists decode how subtle articulatory adjustments create distinct phonological systems.

THE INTERNATIONAL PHONETICS ALPHABET (IPA)

The International Phonetic Alphabet (IPA) is a standardized system of symbols designed to represent every speech sound found in human languages. Developed in the late nineteenth century by the International Phonetic Association, its primary goal is to provide linguists, language teachers, and students with a consistent and universal method for transcribing the sounds of any language. Unlike conventional writing systems, which often have ambiguous or inconsistent relationships between letters and sounds, the IPA assigns a unique symbol to each distinct sound, or phoneme, ensuring clarity and precision in phonetic transcription (International Phonetic Association, 1999).

The importance of the IPA extends far beyond academic linguistics. In language education, for example, it helps learners accurately perceive and produce unfamiliar sounds, which is crucial for achieving native-like pronunciation. Research has shown that explicit instruction using IPA symbols can significantly improve learners' awareness of subtle phonetic distinctions, such as the difference between the English "th" sounds /θ/ (as in "*think*") and /ð/ (as in "*this*"), which are often challenging for non-native speakers (Setter & Jenkins, 2005). Additionally, speech therapists and clinicians use the IPA to

diagnose and treat speech disorders, as it allows for a detailed and systematic representation of speech patterns (Ball & Muller, 2015).

Reading IPA symbols requires some initial study, but the system is logical and systematic. Consonant symbols, such as /p/ and /b/, are based on familiar Latin letters, but each symbol represents a single, specific sound. For example, /p/ is always a voiceless bilabial stop, as in the initial sound of "*pat*," while /b/ is its voiced counterpart, as in "*bat*." Vowel symbols are arranged according to the position of the tongue and lips during articulation; for instance, /i/ represents a high front vowel, as in "*see*," and /ɑ/represents a low back vowel, as in "*father*." Diacritics are small marks added to symbols to indicate variations such as nasalization, aspiration, or length, allowing for even greater precision in transcription (Ladefoged & Johnson, 2021).

To illustrate how the IPA is used, consider the English word "*photograph*." In broad transcription, which captures only the essential phonemes, it is written as /ˈfoʊ.tə.græf/. A narrow transcription, which includes more phonetic detail, might be [ˈfoʊ̯.tʰə.gɹæf], marking the aspiration of the /t/ and the exact quality of the diphthong in the first syllable. The IPA can also reveal differences between dialects or languages; for example, the Spanish word "niño" is transcribed as /ˈni.ɲo/, highlighting the palatal nasal /ɲ/ that does not exist in English (Ladefoged & Maddieson, 1996; Maddieson, 2013).

One of the strengths of the IPA is its ability to capture subtle differences in pronunciation that are not reflected in ordinary spelling. For instance, the English "t" sound is pronounced differently in "*top*" ([tʰɑp], with aspiration) and "*stop*" ([stɑp], without aspiration), and in American English, the "t" in "water" is often realized as a flap [ɾ], which sounds similar to the "d" in "*ladder*." These distinctions are crucial for

understanding regional accents, language change, and the mechanics of speech production (Wells, 2006).

Mastering the IPA opens up new possibilities for both language learners and researchers. It allows for accurate pronunciation guides, supports the documentation and preservation of endangered languages, and aids in the development of speech recognition technologies. By providing a universal framework for representing the sounds of the world's languages, the IPA remains an essential tool for anyone interested in the scientific study of language (Ball & Muller, 2015; International Phonetic Association, 1999).

SOUNDS ACROSS LANGUAGES

Human languages exhibit remarkable diversity in their sound systems, yet they also share underlying patterns shaped by biological, cognitive, and environmental factors. This section explores the interplay between universal tendencies and unique phonetic features across languages.

Universal and Unique Sounds

All spoken languages use consonants and vowels to form meaningful units, but the specific sounds they prioritize vary widely. Certain sounds, like the nasal /m/ or the vowel /a/, appear in nearly all languages due to their articulatory simplicity and acoustic salience(Kurniawan et al., 2022). These universals reflect biomechanical constraints, such as the ease of producing bilabial stops (e.g., /p/, /b/) compared to linguolabial clicks(Chodroff, 2025). Conversely, rare sounds like the bilabial trill /ʙ/ (found in Pirahã, an Amazonian language) or the labial-velar stops /k͡p/ and /g͡b/ (common in West African languages) demonstrate how cultural and historical factors shape unique phonological inventories(Kurniawan et al., 2022).

Examples of Sounds Not Found in English

English lacks several widespread sounds. The voiceless velar fricative /x/, heard in German *Bach* or Scottish *loch*, is absent in most English dialects(Kurniawan et al., 2022). Similarly, nasalized vowels (e.g., French *un* /œ̃/) and pharyngeal consonants (e.g., Arabic /ħ/ and /ʕ/) are rare in Indo-European languages but common elsewhere(Chodroff, 2025). Tonal distinctions, which alter word meaning through pitch (e.g., Mandarin's four tones), highlight how languages exploit suprasegmental features differently(Chodroff, 2025; Duyen, 2024).

How Sound Inventories Differ Between Languages

Languages vary dramatically in sound inventory size. While Rotokas (Papua New Guinea) uses just 11 phonemes, Ubykh (a now-extinct Northwest Caucasian language) had 84 consonants alone. These differences often correlate with environmental or social factors; for instance, ejective consonants (e.g., /k'/) are prevalent in high-altitude languages, possibly due to reduced air pressure affecting speech production(Chodroff, 2025). Additionally, sign languages like American Sign Language (ASL) replace auditory contrasts with manual and facial gestures, illustrating modality-specific adaptations(Kurniawan et al., 2022).

The Role of Phonetic Universals

Crosslinguistic studies reveal systematic patterns, such as high vowels (/i/, /u/) having shorter durations than low vowels (/a/). These "*intrinsic vowel duration*" effects arise from articulatory mechanics, as tongue movement for high vowels requires more time. Similarly, voiceless stops (e.g., /p/, /t/) universally exhibit longer voice onset times (VOT) than their

voiced counterparts (/b/, /d/), a phenomenon tied to laryngeal coordination(Chodroff, 2025).

Rare Sounds and Linguistic Evolution

Some sounds emerge through language-specific innovations. The Pirahã language's bilabial trilled affricate /t͡ʙ̥/ combines a dental stop with a lip trill, a complex articulation that limits its global prevalence2. Conversely, sound loss occurs when distinctions become communicatively redundant; Old English's dental fricatives (/θ/, /ð/) merged into stops in some modern dialects. Such changes reflect a balance between articulatory effort and perceptual clarity(Chodroff, 2025).

Implications for Language Learning

Understanding sound inventory differences aids learners in overcoming phonetic interference. For example, English speakers often struggle with Mandarin's retroflex consonants (/ʈʂ/, /ɖʐ/), which require tongue curvature absent in alveolar stops. Conversely, Spanish learners must master vowel nasalization absent in their native phonology3. Awareness of these contrasts underscores the adaptive nature of human speech(Chodroff, 2025).

SUPRASEGMENTALS: BEYOND INDIVIDUAL SOUNDS

Suprasegmentals are features of speech that extend beyond individual consonants and vowels, shaping the rhythm, melody, and meaning of language. These elements-including stress, pitch, intonation, length, and tone-operate at the level of syllables, words, or entire phrases, influencing both linguistic structure and communicative intent. Their role in distinguishing meanings and conveying subtleties makes them indispensable to understanding spoken language(Aziz et al., 2022).

Stress, Pitch, and Intonation

Stress refers to the emphasis placed on specific syllables or words through increased respiratory effort, pitch variation, and duration. In English, stress can alter grammatical categories: compare the noun *"an IN-sult"* with the verb *"to in-SULT"*. Pitch and intonation, meanwhile, govern the melodic contour of speech. Rising intonation in English often signals a question (*"You're cold?"*), while falling intonation indicates a statement (*"You're cold."*)(Tria Arini et al., 2024). Intonation patterns also convey emotions, such as surprise or sarcasm, and help structure discourse by marking boundaries between phrases(Nabila Zuhairya et al., 2024).

Length and Tone

Length distinctions involve variations in the duration of sounds. Languages like Finnish and Japanese use long vowels or consonants contrastively, for example, Finnish *"tuli"* (fire) versus *"tuuli"* (wind). Tone, a suprasegmental feature in tonal languages like Mandarin Chinese, uses pitch to differentiate word meanings. The syllable *"ma"* can mean "mother" (high level tone), "*hemp*" (rising tone), "*horse*" (falling-rising tone), or "*scold*" (falling tone). In Navajo, tone interacts with stress and duration, illustrating how these features co-occur to create phonological complexity(Tria Arini et al., 2024).

How Suprasegmentals Affect Meaning

Suprasegmentals can transform meaning at lexical, grammatical, and pragmatic levels. In Spanish, stress distinguishes *"término"* (term) from *"terminó"* (he terminated). Similarly, English contrastive stress shifts focus: *"I want a RED pen"* emphasizes color over other attributes1. Intonation patterns also signal speaker intent; a flat intonation in statements versus a rising-falling contour in commands can alter listener

interpretation. Misplaced stress or tone errors-common among language learners-can lead to misunderstandings, as shown in studies of English learners struggling with word stress and intonation contours(Aziz et al., 2022).

Educational and Cross-Linguistic Implications

Mastering suprasegmentals is critical for language proficiency. Research highlights that learners who neglect prosodic hierarchy and intonation patterns often face challenges in natural communication(Nabila Zuhairya et al., 2024). Pedagogical methods, such as imitation exercises and visual pitch tracking, have proven effective in improving stress and intonation accuracy(Aziz et al., 2022). Cross-linguistically, languages prioritize different suprasegmental features: Mandarin relies on tone, Finnish on length, and English on stress and intonation.

PHONETICS IN EVERYDAY LIFE

Phonetics, the scientific study of speech sounds, extends far beyond academic theory. It shapes how we communicate, learn languages, and address challenges in speech production and recognition. Below, we explore its practical applications in accents, speech disorders, and modern technology.

Accents and Pronunciation

Accents arise from systematic variations in pronunciation tied to geography, social identity, or language background. Phonetics analyzes these differences by examining *phoneme inventories* (the set of sounds a language uses) and *allophonic variation* (subtle sound changes in specific contexts). For example, the distinction between rhotic accents (e.g., American English, where "*car*" retains the /r/ sound) and non-rhotic accents (e.g., British English, where "*car*" loses the /r/) hinges

on phonetic rules(Kinanti et al., 2024). Forensic phonetics leverages these patterns to identify speakers in criminal investigations, such as profiling regional accents in hoax recordings. Similarly, language learners use the International Phonetic Alphabet (IPA) to master challenging sounds, like differentiating /θ/ (as in "*think*") from /ð/ (as in "*this*")(Lubis et al., 2023).

Speech Disorders and Phonetics

Phonetics is indispensable in diagnosing and treating speech sound disorders (SSDs). Conditions like childhood apraxia of speech (CAS) or dysarthria involve disruptions in articulatory planning or motor execution. Therapies like *Integrated Phonological Awareness* combine phoneme manipulation with letter-sound knowledge to improve sound production. For example, children with SSDs may struggle with voicing contrasts (e.g., /p/ vs. /b/), which *Metaphon therapy* addresses by teaching "*noisy*" (voiced) versus "*quiet*" (voiceless) distinctions(Longman & Schwartz, 2025). Phonetic transcriptions allow clinicians to compare a patient's speech to normative models, enabling targeted interventions(Namasivayam et al., 2020).

Applications: Language Learning, Speech Technology, Forensics

In language education, phonetic symbols bridge the gap between spelling and pronunciation. Learners studying English, for instance, use IPA transcriptions to decode irregular spellings like "*through*" (/θruː/) or "*colonel*" (/ˈkɜːrnəl/) (Lubis et al., 2023). Speech recognition systems rely on phonetic principles to map audio inputs to phonemes. For example, the word "*cat*" is parsed into /k/, /æ/, and /t/, with algorithms accounting for accents and background noise. Forensic phonetics analyzes

voice recordings for legal cases, examining acoustic features (e.g., pitch, formants) to verify speaker identity or clarify disputed utterances(Preston & Koenig, 2011).

Speech Technology and Innovation

Advances in artificial intelligence (AI) integrate phonetic data to enhance natural language processing. Systems like virtual assistants use phoneme-based models to interpret diverse accents, improving accessibility for non-native speakers7. Similarly, text-to-speech engines synthesize lifelike voices by replicating prosodic features (stress, intonation) derived from phonetic research(Rallo Fabra, 2022).

Forensic Phonetics in Action

High-profile cases, such as the "Yorkshire Ripper" hoax tape, demonstrate how phonetic analysis deciphers speaker identity. Experts identified the perpetrator's Sunderland accent through vowel qualities and intonation patterns, despite the recording's poor quality(White et al., 2022). Such applications underscore phonetics' role in both justice and linguistic profiling.

CONCLUSION

Phonetics, as the scientific study of speech sounds, bridges theoretical linguistics and practical language use. Its three core branches-articulatory**,** acoustic, and auditory phonetics-provide a holistic framework for analyzing how sounds are produced, transmitted, and perceived. Articulatory phonetics, for instance, reveals the intricate coordination of vocal organs in forming consonants like the alveolar /t/ and vowels like the high-front /i/. Acoustic phonetics deciphers the physical properties of sound waves, such as frequency and amplitude, which underpin distinctions between voiced and voiceless sounds (e.g., /z/ vs.

/s/). Auditory phonetics, meanwhile, explores how listeners decode these acoustic signals into meaningful linguistic units, a process influenced by contextual and prosodic cues like pitch and stress.

The practical applications of phonetics are vast. In language education, phonetic training-such as minimal pair drills (*pin* vs. *bin*) and IPA transcription-enhances learners' pronunciation accuracy and listening comprehension. Clinical phonetics aids in diagnosing speech disorders by analyzing deviations in articulation or voice quality, while computational phonetics drives advancements in speech recognition technologies, enabling systems to parse natural speech with increasing precision. Cross-linguistic studies further demonstrate how phonetic principles explain dialectal variations, such as rhoticity in English (*car* as /kɑːr/ vs. /kɑː/) or the palatal nasal /ɲ/ in Spanish.

Key takeaways include the interdependence of phonetic subfields and their role in demystifying language acquisition, technological innovation, and sociolinguistic diversity. Mastery of phonetics equips learners and researchers alike to navigate the complexities of human communication, from mastering foreign accents to developing AI-driven language tools.

The 21st century has ushered in transformative advancements in phonetic research, driven by interdisciplinary collaboration and cutting-edge technology. Artificial intelligence and machine learning now enable real-time analysis of large speech corpora, identifying patterns in sound change and dialectal variation that were previously imperceptible. For example, neural networks can model the acoustic evolution of vowels across generations, offering insights into linguistic shifts in multilingual communities. Tools like Praat and Automatic Speech Recognition (ASR) are increasingly integrated into

language classrooms, providing learners with instant feedback on pronunciation and intonation.

Emerging fields like neurophonetics and sociophonetics are expanding the discipline's scope. Neurophonetics investigates the neural mechanisms underlying speech production and perception, using fMRI and EEG to map brain activity during phonological processing. Sociophonetics, meanwhile, explores how social identity influences phonetic variation, such as the adoption of vocal fry among younger speakers or the erosion of tonal distinctions in urban dialects. These intersections with neuroscience and sociology promise richer understandings of language as both a cognitive and cultural phenomenon.

Looking ahead, challenges and opportunities abound. Speech technologies must address ethical concerns, such as biases in ASR systems that disproportionately misrecognize non-native accents or regional dialects. Innovations in emotional speech recognition aim to decode subtle vocal cues like tremor or pitch variation, with applications in mental health diagnostics and human-computer interaction. Additionally, the push to document endangered languages using phonetic databases ensures the preservation of linguistic diversity in an increasingly globalized world. As phonetics continues to evolve, its integration with fields like genomics (studying the biological basis of speech) and quantum computing (modeling acoustic phenomena) will redefine its frontiers, solidifying its centrality to the study of human language.

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AUTHOR'S PROFILE

Loso Judijanto
is a public policy researcher who works at the research institution IPOSS Jakarta. He was born in Magetan on January 19, 1971. He completed his Master of Statistics at the University of New South Wales, Sydney, Australia, in 1998 with the support of ADCOS (Australian Development Cooperation Scholarship) from the Government of Australia. He had completed his Master of Management Program at the University of Indonesia in 1995 with the support of Bank Internasional Indonesia Scholarship. His undergraduate was

completed at the Bogor Agricultural University (IPB University) in Bogor, majoring in Statistics of the Faculty of Mathematics and Science in 1993 with the support of KPS-Pertamina Scholarship. The author had accomplished his elementary education up to high school in Maospati, Magetan. Along with his career, he has been assigned as member of Board of Commissioners or Supervisors and/or Audit Committee on various companies or institution operating in various sectors such as sea-port management, cellular telecommunications, banking, infrastructure financing, securities and brokerage, plantation, coal mining, property and recreations, and plantation fund management. The author has very strong interests in conducting research in the area of public policy, economics, finance, human capital, and corporate governance. He can be reached at the e-mail address: losojudijantobumn@gmail.com.

CHAPTER 3
SOUND PATTERNS AND SYSTEMS: THE BASICS OF PHONOLOGY

Muhammad Yazidus Syukri
Politeknik Negeri Bandung, Bandung
E-mail: yazidus@polban.ac.id

INTRODUCTION

Phonology, a core subfield of linguistics, investigates how sounds function within languages as structured systems. While phonetics focuses on the physical properties of speech sounds, phonology is concerned with the mental organization of these sounds and the rules that govern their combination and variation. Understanding sound patterns is essential not only for linguistic theory but also for applications in language learning, speech technology, and communication sciences (Odden, 2020).

From the above definition, it can be defined as a core area of linguistics, the study that focuses on the systematic organization of sound in languages. It deals with the abstract, cognitive aspects of sounds as opposed to the physical production, which is studied in phonetics. This chapter delves into the foundational concepts and contemporary insights into phonological systems and sound patterns, drawing on recent research to illuminate these elements.

DEFINITIONS: PHONOLOGY, SOUND PATTERNS, PHONOLOGICAL PROCESSES, AND PHONOLOGICAL SYSTEM

Phonology encompasses various sound-related phenomena, including phonemes, intonation, stress patterns, and rhythm. Phonemes, as the smallest sound units distinguishing meaning,

are central to phonological analysis (Johnson, 2020). This section outlines the distinction between phonetics and phonology, emphasizing their interaction in language production.

Meanwhile, sound patterns in phonology involve the recurrence and arrangement of phonemes within a language. According to Zsiga (2019), sound patterns emerge from phonotactic constraints that govern permissible sound combinations in a language. This section explores key concepts such as syllable structure and moras, illustrating how they shape the auditory profile of languages.

However, phonological processes describe systematic changes affecting speech sounds. These processes include assimilation, dissimilation, deletion, insertion, and metathesis. Kang and Davis (2021) illustrate how such processes lead to allophonic variations essential for fluent speech. The section also highlights the roles of underlying representations and surface forms, bridging theory and empirical data.

In addition, a phonological system is the set of phonemes shared by speakers of a particular language. Magdaleno et al. (2023) discuss how languages manifest diverse phonological systems despite sharing universal phonological principles. Topics such as features, natural classes, and markedness guide the exploration of these systems across languages.

It can be concluded that understanding phonology is crucial for comprehending language structure's complexity and intricacy. As this chapter explores, sound patterns and systems offer a window into the cognitive understanding of language. Advancements over the past five years underscore the dynamic nature of phonological research and its implications for broader linguistic theory.

THE FOUNDATIONS OF PHONOLOGY

Phonology is the branch of linguistics dedicated to understanding how speech sounds function systematically within a particular language or across languages. While phonetics examines the physical production and acoustic properties of sounds (articulation and acoustics), phonology investigates the abstract, cognitive patterns and rules that govern how these sounds are organized, combined, and perceived to convey meaning. It answers questions like: Why do certain sound sequences occur while others are forbidden? Why do sounds change in specific contexts? How do speakers know which sound differences signal a change in word meaning? This chapter lays the groundwork for understanding these fundamental principles.

Phonemes and Allophones

The central unit in phonological analysis is the phoneme, defined as the smallest sound unit capable of distinguishing meaning in a language. For example, the English words *pat* /***pæt***/and *bat* /***bæt***/ differ by a single phoneme /***p***/ versus /***b***/, resulting in different meanings. Each phoneme may be realized differently depending on phonological context; these variations are known as allophones. For instance, the phoneme /***t***/ in English can be aspirated [***t***^{h}] as in *top*, unreleased [t̚] as in *cat*, or flapped [ɾ] as in *butter*. These allophones do not change word meaning and are perceived as the sae phonemes by native speakers. Phonological analysis identifies whether variations are predictable (in complementary distribution) or occur interchangeably (in free variation) (Zheng, 2024). This differentiation helps define how language-specific rules govern sound realization.

Minimal Pairs and Phonemic Contrast

Minimal pairs are pairs of words differing by only one phoneme in the same position, such as *sip* /***sɪp***/ and *zip* /***zɪp***/. They provide evidence for phonemic contrast in a language. By testing for minimal pairs, linguists determine which sounds function contrastively in a given phonological system (Odden, 2020). In language acquisition and second-language learning, the ability to perceive and produce such contrasts is a critical component of phonological development (Leung et al., 2025).

Distinctive Features

Phonemes can be described using distinctive features, a set of binary (+/−) properties that categorize sounds across languages. Common features include:

- → [+voice] vs. [−voice]: /***b***/ vs. /***p***/
- → [+nasal] vs. [−nasal]: /***n***/ vs. /***d***/
- → [+continuant]: /***s***/, /***f***/
- → [+consonantal]: /***b***/, /***d***/, /***k***/

These features allow phonologists to group sounds into classes and form rules that explain systematic phonological behaviour (Fernández-Otoya et al., 2022).

Phonological Rules and Processes

Phonological rules describe how phonemes are systematically transformed in specific contexts. These include:

- → Assimilation: One sound becomes more like a nearby sound.
  - ✓ *in-* + *possible* → *impossible*
- → Deletion: A sound is omitted.
  - ✓ *family* → /***fæmli***/
- → Insertion (epenthesis): A sound is added.
  - ✓ *athlete* → /***æθəlit***/

→ Metathesis: Sounds switch places.
  ✓ *ask* → /***æks***/

These processes are often automatic and unconscious, revealing the hidden structure of linguistic knowledge.

Syllable Structure

Syllables are structural units composed of an onset, nucleus, and coda:

→ Onset: Initial consonant(s)
→ Nucleus: Typically, a vowel (mandatory)
→ Coda: Final consonant(s)

The combination of the nucleus and coda is called the rime. English allows complex syllable structures such as CCVCC (*plant*), while languages like Japanese predominantly use CV syllables (Odden, 2020). Syllable constraints influence phonotactics—the permissible combinations of sounds in a language—and are critical for literacy and second-language pronunciation instruction (Leung et al., 2025).

Suprasegmentals

Phonology also encompasses suprasegmental features, which include:

→ Stress: Emphasis on a syllable (e.g., ***REcord*** vs. ***reCORD***)
→ Intonation: Variation in pitch across a sentence
→ Tone: Pitch used to distinguish lexical meaning, as in Mandarin

These features contribute to rhythm, emotion, and pragmatic meaning. In tonal languages, tone is phonemic, altering the meaning of otherwise identical syllables (Azzahra, 2025).

Cross-Linguistic Variation in Phonological Systems

Languages exhibit considerable diversity in their phonological inventories:

- → English has about 44 phonemes.
- → Hawaiian has just 13.
- → !Xóõ, a Khoisan language, includes over 100 consonants, many of them clicks.

Moreover, some languages use nonlinear phonology, such as root-and-pattern morphology in Arabic, where consonantal roots interweave with vowel patterns to generate meaning (Odden, 2020). Such variation underscores the flexibility and diversity of human linguistic systems.

Phonological Awareness in Language Learning

Phonological awareness—the ability to recognize and manipulate sound structures—is a key predictor of literacy and language acquisition. In early education, it supports decoding and spelling, while in second-language contexts, it aids pronunciation and listening comprehension (Fernández-Otoya et al., 2022).

Research shows that digital tools and structured interventions can improve phonological awareness in both first and second-language learners (Azzahra, 2025).

THE PHONEME: THE BASIC UNIT OF CONTRAST

The central concept in phonology is the phoneme. A phoneme is an abstract mental unit that represents a class of speech sounds perceived as the same by native speakers and capable of distinguishing meaning.

Minimal Pairs

The primary method for identifying phonemes is through minimal pairs. These are pairs of words that differ in meaning and differ by only one sound segment in the same position.

Example: English */pɪn/* ("***pin***") vs. */bɪn/* ("***bin***") vs. */tɪn/* ("***tin***") vs. */dɪn/* ("***din***") vs. */kɪn/* ("***kin***"). The sounds */p/*, */b/*, */t/*, */d/*, */k/* are distinct English phonemes because substituting one for another changes the word's meaning.

Contrast

Phonemes are said to be in *contrastive distribution*; their occurrence distinguishes words.

Abstract Nature:

A phoneme is not a single sound but an abstract category. It is realized in actual speech by different phonetic variants called *allophones*.

Allophones: Contextual Variations

Allophones are the predictable, context-dependent phonetic variants of a single phoneme. They do not change word meaning.

Complementary Distribution

Allophones of the same phoneme typically occur in mutually exclusive environments. The occurrence of one allophone predicts the absence of the others.

Example: English /*t*/

a. Aspirated [***tʰ***] occurs at the beginning of stressed syllables (e.g., "*top*" [***tʰap***]).
b. Unaspirated [t] occurs after /s/ (e.g., "*stop*" [***stap***]).
c. Flap [ɾ] occurs between vowels when the preceding vowel is stressed (e.g., "*butter*" [ˈ***bʌɾɚ***]).

d. Glottal stop [ʔ] occurs before syllabic nasals or in final position in some dialects (e.g., "*button*" [ˈ***bʌʔn̩***]).
e. Free Variation: Sometimes, different pronunciations of a sound occur in the same environment without changing meaning (e.g., final /t/ released [***t***] or unreleased [***t̚***] in "***cat***"). These are also allophones.

DISTINCTIVE FEATURES: THE BUILDING BLOCKS

Phonemes are not indivisible units. They are composed of smaller, universal properties called distinctive features. These binary (+/-) features describe the articulatory or acoustic characteristics that distinguish one phoneme from another.

Function: Features allow us to define natural classes of sounds (sounds sharing one or more features) and state phonological rules more economically. Rules often apply to entire natural classes.

a. Common Feature Sets (Illustrative):
b. Major Class Features: [±consonantal], [±sonorant], [±syllabic]
c. Place of Articulation: [±labial], [±coronal], [±anterior], [±distributed], [±dorsal], [±high], [±low], [±back], [±round]
d. Manner of Articulation: [±continuant], [±nasal], [±strident], [±lateral]
e. Laryngeal Features (Voicing/Glottal State): [±voice], [±spread glottis] (aspiration), [±constricted glottis] (glottalization)

   Example: The difference between /p/ and /b/ in English is primarily the feature [±voice] ([+voice] for /b/, [-voice] for /p/). The difference between /p/ and /t/ is primarily Place features ([+labial] for /p/ vs. [+coronal] for /t/).

Phonological Rules: Capturing Sound Patterns

Phonological rules describe the predictable changes sounds undergo in specific phonological contexts. They formalize the relationship between underlying phonemic representations (stored in the mental lexicon) and surface phonetic representations (actual pronunciation).

a. Rule Format (Simplified): A → B / X __ Y

   Meaning: Sound A becomes (or is realized as) B when it occurs between sound (or environment) X and sound (or environment) Y.

   Example Rule (English Aspiration):* /***p***, ***t***, ***k***/ → [***pʰ***, ***tʰ***, ***kʰ***] / # __ V (where # = word boundary, V = vowel)

   Meaning: The voiceless stops /p, t, k/ are pronounced with aspiration when they occur at the beginning of a word before a vowel (e.g., "*pat*" [***pʰæt***], "*top*" [***tʰap***], "*key*" [***kʰi***]).

b. Types of Common Rules:

   1. Assimilation: A sound becomes more like a neighboring sound (e.g., nasal place assimilation: /***ɪn***/ + "*possible*" → [***ɪm ˈpasəbl̩***] "*impossible*").
   2. Dissimilation: A sound becomes less like a neighboring sound (less common).
   3. Insertion (Epenthesis): Adding a sound (e.g., English insertion of [***ə***] in "*hamster*" often pronounced [ˈ***hæməstə***˞]).
   4. Deletion (Elision): Removing a sound (e.g., deletion of /***t***/ or /***d***/ in consonant clusters like "*facts*" [***fæks***]).
   5. Metathesis: Reversing the order of sounds (e.g., historical "*ask*" /***æsk***/ vs. dialectal /***æks***/ "*aks*").

Syllables: Organizational Units

Sounds are not strung together linearly; they are organized into higher-level units called syllables. Syllables are crucial for understanding phonotactics and many phonological processes.

Syllable Structure:

a. Onset (O): Optional consonant(s) at the beginning.
b. Nucleus (N): Obligatory vowel or syllabic consonant (the core, peak of sonority).
c. Coda (Co): Optional consonant(s) at the end.
d. Rime (R): The nucleus + coda.
e. Sonority: Syllables typically follow a sonority sequencing principle, where sonority (loudness/perceptual prominence) rises towards the nucleus and falls towards the coda (e.g., "*cat*" [***kæt***]: low sonority [***k***], high sonority [***æ***], low sonority [***t***]).

Phonotactics: The set of constraints governing permissible sound sequences and syllable structures within a language. These define what constitutes a "possible word." (e.g., English allows /***sp***/ onset ("*spin*") but not /***ps***/ onset; allows /***ŋ***/ in coda ("*sing*") but not in onset).

Suprasegmentals: Features Beyond the Segment

Phonology also deals with phenomena that extend over more than one sound segment:

a. Stress: The relative prominence (often involving pitch, duration, and loudness) given to a syllable within a word. It can be contrastive (e.g., English "*CONtent*" (noun) vs. "*conTENT*" (adjective)).
b. Tone: The use of pitch (high, low, rising, falling, etc.) on syllables to distinguish lexical meaning or grammatical function. Essential in tone languages like Mandarin Chinese or Yoruba (e.g., Mandarin: ***mā*** **(**妈, mother - high level), ***má*** (麻, hemp - rising), *mǎ* (马, horse - falling-rising), *mà* (骂, scold - falling)).

c. Intonation: The use of pitch variation over phrases and sentences to convey meaning (e.g., questions vs. statements, emphasis, attitude).
d. Length: The duration of a sound (vowel or consonant) can be contrastive in some languages (e.g., Finnish: "*tuli*" [***tuli***] (fire) vs. "*tuuli*" [***tuːli***] (wind)).

CONCLUSION

Phonology provides the framework for understanding the systematic organization of sounds in human language. By identifying phonemes, their allophonic variations, the distinctive features that define them, and the rules governing their behavior in different contexts and structures (syllables, words, phrases), we gain insight into the complex cognitive system that allows speakers to produce and perceive meaningful speech. This foundation is essential for exploring language acquisition, dialect variation, historical sound change, and applications in speech technology.

Phonology also reveals the underlying structure of language sounds, moving beyond articulation to analyze abstract patterns and mental representations. By studying phonemes, features, rules, and suprasegmentals, we uncover the system that speakers unconsciously use to interpret and produce speech. Recent studies underscore phonology's relevance not only in linguistic theory but also in applied fields like education, speech technology, and second-language acquisition.

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AUTHOR'S PROFILE

Muhammad Yazidus Syukri
A Young Professional English Lecturer from Politeknik Negeri Bandung (Bandung State Polytechnic) West Java Province in Indonesia, with excellent communication skills, passion for Community Services, and expertise in teaching English to young and adult learners with high innovation in content-based instruction, English for Businesses, English for Reading and Writing, Listening for Sound Differences and Simple Information, Listening for various Talks, Speaking for Communication at Work, Reading Comprehension, Academic Writing, English for Occupational Purposes, English for Specific purposes, and general up to professional training on public speaking and translation studies with high motivation on the organizational skill, leadership, and professional development. (https://yazidus.wixsite.com/yzds)

CHAPTER 4
WORD FORMATION PROCESSES – THE STUDY OF MORPHOLOGY

Paramita Kusumawardhani
Universitas Bina Saana Informatika, Jakarta
E-mail: paramita.pmi@bsi.ac.id

INTRODUCTION

Word formation processes refer to the mechanisms by which new words are created in a language. These processes involve modifying existing words or combining them to form new words with different meanings or functions. Word formation is the process by which a lexeme or a combination of lexemes is changed morphologically into a word. (Fitria, 2022).

Morphology is important because it helps understand word structure and formation, enhances language comprehension and production, facilitates language learning and teaching, provides insights into language evolution and change and supports linguistic research and analysis

Morphology study has practical applications in language documentation, language teaching, and linguistic research.

There are two kinds of morphemes, free and bound morpheme. A free morpheme is a morpheme that can stand alone as a word, has a clear meaning and is not bound to another morpheme. While bound morpheme is a morpheme cannot stand alone as a word does not have a clear meaning and it must attach to another morpheme.

There are some parts of Word Formation Processes, they are (1) adding prefixes or suffixes: adding prefixes or suffixes to existing words to change their meaning or function, (2) compounding: Combining two or more words to form a new

word, (3) conversion: Changing the part of speech of a word (e.g., from noun to verb), (4) blending: Combining parts of two words to form a new word.

Morphology has also importance of Word Formation Processes as (1) Creating new words: Word formation processes allow languages to create new words to describe new concepts, ideas, or objects, and (2) Expanding vocabulary: These processes help to expand the vocabulary of a language, making it more expressive and nuanced.

Based on the explanation above word formation processes are essential for the development and evolution of languages, enabling them to adapt to changing contexts and needs. There are several kinds of word formation processes:

1. Affixation
    - Prefixation: Adding a prefix to a word (e.g., "un-" + "happy" = "unhappy")
    - Suffixation: Adding a suffix to a word (e.g., "run" + "-ner" = "runner")
2. Compounding
    - Noun + Noun: Combining two nouns to form a new word (e.g., "book" + "shelf" = "bookshelf")
    - Adjective + Noun: Combining an adjective and a noun to form a new word (e.g., "black" + "board" = "blackboard")
3. Conversion
    - Verb to Noun: Changing a verb to a noun (e.g., "run" -> "runner")
    - Noun to Verb: Changing a noun to a verb (e.g., "table" -> "to table")
4. Blending
    - Combining parts of two words to form a new word (e.g., "smoke" + "fog" = "smog")
5. Clipping

- Reducing a word to a shorter form (e.g., "telephone" -> "phone")

6. Acronymy
   - Forming a new word from the initial letters of a phrase (e.g., "National Aeronautics and Space Administration" -> "NASA")
7. Back-formation
   - Removing a supposed affix from a word to form a new word (e.g., "editor" -> "edit")
8. Reduplication
   - Repeating a word or part of a word to form a new word (e.g., "walk" -> "walk-walk")

These word formation processes help to create new words and expand the vocabulary of a language.

AFFIXATION

Affixation is a word formation process that involves adding a prefix or suffix to a base word or root word to form a new word. Affixes are morphemes that are attached to a base word to change its meaning, grammatical function, or both. Based on (Wirahmi Bay, Widyarti Ali, & Dehi, 2023) said that Affixation's positional categorization involves prefixes ("unhappy"), infixes ("blinking" in some languages), suffixes ("doer" from "do"), and circumfixes ("redoing" with both prefix and suffix).

Types of Affixes

1. Prefixes: Added to the beginning of a word (e.g., "un-" + "happy" = "unhappy")
2. Suffixes: Added to the end of a word (e.g., "run" + "-ner" = "runner")

Functions of Affixation

1. Changing meaning: Affixes can change the meaning of a word (e.g., "un-" + "happy" = "unhappy")
2. Changing part of speech: Affixes can change the part of speech of a word (e.g., "run" (verb) + "-ner" = "runner" (noun))

Examples of Affixation

1. Prefixation: "un-" + "happy" = "unhappy"
2. Suffixation: "run" + "-ner" = "runner"

Affixation is a productive way to form new words in many languages, allowing speakers to express nuanced meanings and create new vocabulary.

COMPOUNDING

In the morphological process, there are many ways to create words, such as inflection, derivation, and compounding. Compounding is a word formation process that involves combining two or more words to form a new word. The resulting word is called a compound word. Based on (Restu & Maulidia, 2022), “Compounding or composition consists of the combination of two words into new lexemes. It can often be challenging to tell whether a statement is made up of a phrase or a compound when trying to grasp it”.

Types of Compounding

1. Noun + Noun: book + shelf = bookshelf
2. Adjective + Noun: black + board = blackboard
3. Verb + Noun: pick + pocket = pickpocket

Characteristics of Compounding

1. New meaning: Compound words often have a new meaning that is different from the individual words.

2. Single unit: Compound words function as a single unit, with a single stress pattern and pronunciation.

Examples of Compounding
1. Bookshelf
2. Blackboard
3. Toothbrush
4. Birthday

Compounding is a common way to form new words in many languages, allowing speakers to create new vocabulary and express complex ideas.

CONVERSION

Conversion, also known as zero-derivation or functional shift, is a word formation process where a word changes its part of speech or grammatical function without any change in its form. Conversion includes all cases of word formation in which we are dealing with translation of the foundations of one part of speech into another by including these bases in another paradigm without the use of any other word-formative tools, and then, with the change of paradigms, a new name is being formed, "which as a result of the transposition receives new categorical signs and new lexical characteristics, (Panferova & Kim, 2021).

Examples of Conversion
1. Noun to Verb: light (noun) -> to light (verb)
2. Verb to Noun: run (verb) -> run (noun)
3. Adjective to Adverb: fast (adjective) -> fast (adverb)

Characteristics of Conversion
1. No change in form: The word's form remains the same.

2. Change in part of speech: The word's part of speech or grammatical function changes.

Examples
1. Light: The room needs more light. (noun) -> Can you light the candles? (verb)
2. Run: I love to run. (verb) -> The run was exhausting. (noun)

Conversion is a common process in language, allowing words to be used in different contexts and with different meanings.

BLENDING

Blending is a word formation process that involves combining parts of two words to create a new word. The resulting word is often a mix of the sounds, meanings, or both of the original words. Blending is way to combine two or more forms by clipping and or overlapping. Blends can also be categorized on the basis of factors other than their structure, that is whether they are associative or syntagmatic, (Nuatica Abby H, 2022).

Examples of Blending
1. Smog (smoke + fog)
2. Brunch (breakfast + lunch)
3. Motel (motor + hotel)
4. Infomercial (information + commercial)

Characteristics of Blending
1. Combining parts: Blending involves combining parts of two words.
2. New meaning: The resulting word often has a new meaning.
3. Informal: Blending is often used in informal language.

Blending is a creative way to form new words, and it is commonly used in advertising, marketing, and everyday language.

CLIPPING

Clipping is a word formation process that involves reducing a word to a shorter form, often by removing one or more syllables. ((Hilpert, Saavedra, & Rains, 2023) explained that Clippings have a relatively greater tendency to appear in texts with contextual elements that reflect text production in which the speaker shows a high degree of involvement, for example by making reference to the listener and to themselves.

Examples of Clipping

1. Phone (from telephone)
2. Doc (from doctor)
3. Lab (from laboratory)
4. Ad (from advertisement)

Characteristics of Clipping

1. Shortening: Clipping involves shortening a word.
2. Informal: Clipping is often used in informal language.
3. Convenience: Clipping makes words easier to pronounce and remember.

Clipping is a common process in language, especially in informal contexts, and it can help to create more efficient and convenient communication.

ACRONYMY

Acronymy is a word formation process that involves creating a new word from the initial letters of a phrase or a series of words. (Pujiyanti & Nur Ardini, 2019) said that

acronym is a word formed from the initial letter or letters of each of the successive parts of major parts of a compound term.
Examples of Acronymy

1. NASA (National Aeronautics and Space Administration)
2. SCUBA (Self-Contained Underwater Breathing Apparatus)
3. UNICEF (United Nations Children's Fund)
4. LASER (Light Amplification by Stimulated Emission of Radiation)

Characteristics of Acronymy

1. Initial letters: Acronyms are formed from the initial letters of a phrase.
2. New word: The resulting acronym is a new word.
3. Convenience: Acronyms are often used to shorten long phrases or names.

Acronymy is a common process in language, especially in formal and technical contexts, and it can help to create more efficient and convenient communication.

BACK-FORMATION

Back-formation is a word formation process that involves removing a supposed affix from a word to form a new word. Based on (Elma Miniri, 2023), “Back-formation is one of the word-formation processes that is generally considered to be on the lower level. Back-derivation, retrograde-derivation, and deaffixation are a few additional names for this process”.
Examples of Back-formation

1. Edit (from editor)
2. Burgle (from burglar)
3. Diagnose (from diagnosis)

Characteristics of Back-formation

1. Removing affix: Back-formation involves removing a supposed affix.
2. New word: The resulting word is a new word.
3. Reversal: Back-formation is often seen as a reversal of the normal process of word formation.

Back-formation is a less common process in language, but it can help to create new words and expand vocabulary.

REDUPLICATION

Reduplication is a word formation process that involves repeating a word or part of a word to form a new word. Reduplication occurs in the English language and how it happened to change both the meaning, identity and class of words within English, (Habibi, 2021).

Examples of Reduplication

1. Walk-walk (emphasizing walking)
2. Chit-chat (casual conversation)
3. No-no (something that is not allowed)

Types of Reduplication

1. Exact reduplication: Repeating the exact same word (e.g., "bye-bye")
2. Rhyme reduplication: Repeating a word with a similar sound (e.g., "walkie-talkie")

Functions of Reduplication

1. Emphasis: Reduplication can emphasize or intensify the meaning of a word.
2. Playfulness: Reduplication can create a playful or informal tone.

Reduplication is a creative way to form new words and add emphasis or playfulness to language.

EXAMPLES OF ADDING PREFIXES AND SUFFIXES

Reduplication is a word formation process that involves repeating a word or part of a word to form a new word.

Examples of Reduplication

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Reduplication is a creative way to form new words and add emphasis or playfulness to language

EXAMPLES OF COMPOUNDING

Here are some examples of compounding:

Noun Compounds

1. Bookshelf (book + shelf)
2. Toothbrush (tooth + brush)
3. Birthday (birth + day)

Adjective Compounds

1. Blackboard (black + board)
2. Full-time (full + time)

Verb Compounds

1. Pickpocket (pick + pocket)

Compounding creates new words by combining two or more words, often resulting in a new meaning or concept.

EXAMPLES OF CONVERSION

Here are some examples of conversion:

Noun to Verb

1. Light (noun) -> to light (verb)
2. Table (noun) -> to table (verb)

Verb to Noun

1. Run (verb) -> a run (noun)
2. Paint (verb) -> a paint (noun)

Adjective to Adverb

1. Fast (adjective) -> fast (adverb)

Conversion changes the part of speech or grammatical function of a word without changing its form.

BLENDING

Here are some examples of blending:

1. Smog (smoke + fog)
2. Brunch (breakfast + lunch)
3. Motel (motor + hotel)
4. Infomercial (information + commercial)
5. Bromance (brotherly + romance)

Blending combines parts of two words to create a new word, often with a new meaning.

THE IMPORTANCE OF WORD FORMATION PROCESSES

Creating New Words

Here are some examples of creating new words:

Examples

1. Selfie (self-portrait photograph)
2. Hashtag (word or phrase preceded by #)
3. Vlog (video blog)
4. Infodemic (excessive amount of information)
5. Netizen (citizen of the internet)

New words can be created through various word formation processes, such as blending, compounding, or derivation, to describe new concepts, technologies, or ideas.

Expanding New Vocabulary

Here are some examples of expanding vocabulary:

Examples

1. Neologisms: New words like "selfie", "hashtag", or "vlog" expand vocabulary to describe new concepts or technologies.
2. Borrowing: Words borrowed from other languages, like "sushi" (from Japanese) or "café" (from French), expand vocabulary.
3. Derivation: Adding prefixes or suffixes to existing words, like "unhappy" or "happiness", expands vocabulary.
4. Compounding: Combining words, like "bookshelf" or "toothbrush", expands vocabulary.

Expanding vocabulary helps to:

- Describe new ideas or concepts

- Enhance communication
- Increase expression and nuance

Vocabulary expansion is an ongoing process that reflects changes in culture, technology, and society.

CONCLUSION

Word formation processes are vital for language evolution, enabling the creation of new words and expansion of vocabulary. By understanding these processes, we can appreciate the dynamic nature of language and its ability to adapt to changing contexts.

Word formation processes are essential for creating new words and expanding vocabulary. These processes include:

1. Clipping
2. Acronymy
3. Back-formation
4. Reduplication
5. Prefixation and suffixation
6. Compounding
7. Conversion
8. Blending

These processes help to create new words to describe new concepts or ideas, enhance communication and expression, reflect changes in culture, technology, and society, understanding word formation processes can help you better comprehend and utilize language.

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PROFIL PENULIS

Paramita Kusumawardhani was born in Surabaya, September 25. She took her undergraduate educational Indraprasta PGRI University, English Education study program in 2002. Then, she continued her Master's education at the same campus and the same department in 2012. In 2021, she continued her Doctorate with an Indonesian Education Scholarship at the Indonesian Education University. Paramita can be contacted at paramita.pmi@bsi.ac.id and HP. WA 087808999314.

CHAPTER 5
UNDERSTANDING SYNTAX

Nurhayati S.
Universitas Bina Sarana Informatika, Jakarta.
E-mail: nurhayati.nhi@bsi.ac.id

INTRODUCTION

People effortlessly create and understand countless sentences daily, from simple statements like "The cat purred" to intricate ones such as "The linguist, who had spent years studying ancient dialects, finally deciphered the cryptic inscription found deep within the forgotten tomb." This ability to form meaningful word sequences is crucial for human communication. But how do we accomplish this complex task, and what underlying principles govern how words combine into coherent phrases, clauses, and sentences? The answer lies in syntax.

Derived from the Greek words *sun* ("together") and *taxis* ("arrangement"), syntax literally means 'arrangement together.' In linguistics, it is the systematic study of the rules and principles that dictate how words are combined to form grammatically correct phrases, clauses, and sentences within any given language (Carnie, 2013). Essentially, syntax acts as language's architectural blueprint, defining the permissible sequences and relationships between linguistic units necessary for clear communication. Without these foundational syntactic rules, language would devolve into a jumbled collection of individual words, unable to convey complex thoughts or subtle meanings.

The importance of syntax goes beyond merely identifying grammatically correct sentences. It explores how speakers

intuitively generate and comprehend an infinite number of new sentences, and how these structures connect to the brain's cognitive language processes. This chapter will lay a vital groundwork for understanding key syntactic concepts. It will also examine the fundamental units used in syntactic analysis—ranging from single words to intricate sentences—with the aim of offering clearer insight into the underlying structure of sentences.

THE CONCEPT OF SYNTAX

Etymologically, the word "syntax" originates from the Ancient Greek words *sun* (together) and *taxis* (arrangement), literally translates to 'arrangement together'(*Syntax*, n.d.).

A highly influential linguist, (Chomsky, 1965) defines that Syntax is concerned with investigating the rules and methods used to build sentences in specific languages. (Fromkin, V., Rodman, R., & Hyams, 2014) stated that the part of grammar that represents a speaker's knowledge of sentences and their structures is called syntax. This perspective leans towards the cognitive aspect of syntax, acknowledging that speakers unconsciously know and apply these rules. They also emphasize that syntactic rules reveal the grammatical relations among words, their order, and hierarchical organization.

(Carnie, 2013)) stated that Syntax is the branch of linguistics that unpacks how sentences are built. Essentially, it investigates the layer of language that sits between individual words and the overall meaning someone intends to convey. Think of it as the crucial mediator: it takes the sounds a speaker makes (which are organized into words) and arranges them into structures that allow for a complete and understandable message.

(Radford, 2009) explained that Traditionally, grammar is broken down into two interconnected fields: morphology and

syntax. Morphology focuses on how words are built from smaller parts called morphemes. It asks how morphemes combine to form complex words, like understanding the pieces and construction of "antidisestablishmentarianism." In contrast, syntax examines how words are arranged to create phrases and sentences.

THE CORE UNIT OF ANALYSIS

Understanding the units of analysis in syntax is crucial for dissecting the intricate structure of sentences. Syntactic analysis doesn't just look at individual words in isolation; rather, it examines how these words combine and relate to each other at various levels to form larger, meaningful structures. These hierarchical units allow linguists to systematically describe and explain the grammatical patterns of a language. The primary units of analysis in syntax include:

1. Words

(Hambali, Muslih and Mirizon, 2017) stated that words are categorized in two main ways. Lexical category (or word class) tells us what type of word it is and its basic function, like whether it's a noun, verb, or adjective. On the other hand, grammatical category refers to changes in a word's form (inflection) that show its relationship to other words in a sentence, such as whether it's plural, its tense, number, gender, case, or degree.

According to Fries (1964), as cited by (Abdullah, 2023), words are primarily categorized into two main groups based on their form: class words and function words.Class words, also known as the traditional parts of speech, are further divided into four types: nouns, verbs, adjectives, and adverbs.In contrast, function words lack independent lexical meaning and are used alongside class words to construct phrases. These function

words include determiners, auxiliaries, intensifiers, prepositions, conjunctions, and question words.

(Greenbaun, S., and Nelson, 2002) say word classes are commonly referred to as parts of speech. However, there isn't a universally agreed-upon or fixed number for these word categories. English parts of speech are divided into nine, namely: noun, pronoun, adjective, adverb, verb, conjunction, preposition, determiner, and auxiliary verbs. (Finegan, 2004) however, contends that English has only eight parts of speech, as he does not classify auxiliary verbs as a separate category.

a. Nouns

(Hambali, Muslih and Mirizon, 2017)\ define a noun as a word that names individuals, objects, animals, or locations, providing examples like "Bob" (people), "table" (things), "crocodile" (animals), and "house" (places). Expanding on this, Altenberg and Vago (2010) categorize nouns referring to things into two types: animate (living entities such as trees, cats, and crocodiles) and inanimate (non-living items like paper, stone, and typewriters).

According to (Huddleston, Rodney, & Pullum, 2002), nouns are defined as "a grammatically distinct word category, which includes words denoting all kinds of physical objects, such as people, animals, and inanimate objects."

(Hambali, Muslih and Mirizon, 2017) say pr are considered a specific type of noun, encompassing several categories such as personal, interrogative, relative, demonstrative, reflexive, reciprocal, and indefinite pronouns.

b. Verbs

A verb is a word that denotes actions, sensations and states (Fromkin, 2001, p. 598). A verb is a word that is a constituent of sentence structure (Greenbaun, S., and Nelson, 2002)

Regarding their primary forms, English verbs are categorized into four main parts: the simple present, simple past, past participle, and present participle.(Azar, 2009)

When classifying verbs, (Miller, 2002) identifies six distinct types: transitive, intransitive, ditransitive, transitive directional verbs, intransitive locational verbs, and copula (or intensive) verbs. It's noteworthy, however, that copula or linking verbs like 'be' primarily serve to convey tense rather than providing the main semantic content of a sentence regarding an event or situation (Pavey, 2012). Additionally, there's a category known as helping verbs, which encompass modals (such as *can, may, must, shall, will, could, might, ought to, should, would*) and auxiliaries (including *is, was, been, being, did, have, are, be, were, do, does, has, had*) (Azar, 2009). These helping verbs frequently combine with main verbs to construct a verb phrase.

c. Adjectives

An adjective functions to describe either a noun or a pronoun. These words can occupy various positions when they modify nouns. An adjective's placement relative to the noun it describes determines its function: it is considered attributive when it precedes and modifies the noun (e.g., "the *red* car"), and predicative when it follows a linking verb and modifies a noun that came before it (e.g., "The car *is red*") (Huddleston, Rodney, & Pullum, 2002; Radford, 2009).

Examples:

1. The mall is busy. (predicative)
2. The busy mall is full of people. (attributive)

Descriptive adjectives fall into two categories: common adjectives and participial adjectives. Common adjectives are basic, root words typically found in a dictionary, such as "busy," "clever," or "dark." In contrast, participial (or verbal) adjectives

are derived from verbs; they can be present participles (ending in "-ing") or past participles (Hambali, Muslih and Mirizon, 2017). For example: ***standing*** man (present participle); ***broken*** chair (Past participle).

d. Adverbs

(Aarts, 2001) categorizes adverbs into three primary subclasses: circumstantial, degree, and sentence adverbs. Circumstantial adverbs furnish details about the circumstances of an action, typically indicating either its frequency (e.g., *sometimes, never, often*) or its manner (e.g., *slowly, diligently, interestingly*). Degree adverbs, on the other hand, quantify the intensity of the adjectives they modify (e.g., *extraordinary, pretty, very*). Lastly, sentence adverbs serve to connect or introduce sentences, often expressing a speaker's attitude or probability (e.g., *probably, perhaps, however*).

(Hambali, Muslih and Mirizon, 2017) define an adverb as a word that describes or modifies a verb, an adjective, or another adverb (Hambali, Muslih and Mirizon, 2017). They typically provide information about how, when, where, or to what extent an action is performed or a quality exists.

Most adverbs in English are formed by adding the suffix "-ly" to an adjective (e.g., *slowly, quietly, carefully*). However, some adverbs are derived from nouns with the suffix "-wise" (e.g., *clockwise, weather-wise*), and a few have the same form as adjectives (e.g., *hard, early, fast*) or are irregular (e.g., *well* from *good*).

e. Prepositions

A preposition, as defined by (Hornby, 2002), is a word or group of words that precedes a noun or pronoun to indicate relationships of place, position, time, or method. These words typically connect with either an adjective or a verb. English

features a substantial number of prepositions; for instance,(Azar, 2009) lists 45 common examples, including words below:

to, at, behind, beneath, throughout, from, beside, around, after, despite, up, off, for, over, among, into, like, down, till, by, near, through, across, towards, upon, above, with, until, beyond, since, before, in, below, out, on, without, during, between, against, along, within, of, besides, under.

f. Conjunctions

A conjunction is simply defined as a word that joins words, phrases, or clauses (Hambali, Muslih and Mirizon, 2017). There are three kinds of conjunction: coordinating, subordinating, and correlative conjunction.

Coordinating conjunctions connect elements (words, phrases, or clauses) that are of equal grammatical rank or importance (Carnie, 2013). Common Examples (FANBOYS mnemonic)- for, and, not, but, or, yet, so.

Correlative conjunctions are pairs of conjunctions that work together to connect grammatically equivalent elements (words, phrases, or clauses) (Carnie, 2013). Common Examples: both...and, either...or, neither...nor, not only...but also, whether...or, as...as.

Subordinating conjunctions connect a dependent (subordinate) clause to an independent (main) clause, establishing a specific logical relationship between the two (Huddleston, Rodney, & Pullum, 2002; Radford, 2009). Common Examples: after, although, as, because, before, even though, if, since, though, unless, until, when, whenever, where, wherever, while, why, so that, in order that, whether.

g. Determiners

A determiner is defined as "a part of a word class that usually modifies a noun" (Hambali, Muslih and Mirizon, 2017). (Nugues, Pierre, 2006) does not include determiner in parts of speech and he uses the term 'participle' for adjective.(Greenbaun, S., and Nelson, 2002) add numerals as a different word class instead of determiner. Articles (a,an, the); demonstratives (this, that, these, those), numerals (one, two, three, etc.) , quantity (some, several, much, etc), interrogative determiner (which, whose, what) and possessive adjectives (my, your, his, her, our, their, its) are referred to be called genitive determiners.

PHRASE AND CLAUSE STRUCTURES

1. Phrases

Within a sentence's structure, a phrase is essentially a sequence of words that operates as a single grammatical unit (Burton-Roberts, 2011). Traditionally, a phrase is understood as a group of related words that lacks both a subject and a predicate, thus requiring at least two words. However, in the context of syntactic analysis, even a single word can be considered a phrase (Hambali, Muslih and Mirizon, 2017). Furthermore, the principles used to construct the phrase structure tree of a sentence are known as phrase structure rules, or PSRs (Carnie, 2013). Below is the analysis of parts of any phrases based on PSRs proposed by (Carnie, 2013).

a. Noun Phrases (NPs)

The most basic Noun Phrases (NPs) are made up solely of a single noun, which is typically either a proper noun, a pronoun, a mass noun, or a plural noun (Carnie, 2013). Below are some analyses of NP patterns:

1) NP → N

a. NP: John
2) NP → D + N = The room
3) NP → (D) (AdjP) N = that white silky pillow
4) NP → (D) (AdjP) N (PP) = The big box of crayons
5) NP → (D) (AdjP+) N (PP+) --The [AdjP small] [AdjP green] box [PP of cookies] [PP with the pink lid] = The small green box of cookies with the pink lid
6) NP → (D) (AdjP+) N (PP+) = The tall young man with a backpack

b. Adjective Phrases and Adverb Phrases

Adjective Phrases (AdjPs) and Adverb Phrases (AdvPs). Below are the patterns and the PSR analyses of the phrases.

1) AdjP → (AdvP) Adj = *very difficult*
2) AdvP → (AdvP) Adv = *very slowly*

c. Prepositional Phrases (PPs)

Most PPs take the form of a preposition (the head) followed by an NP:

1) PP → P NP = *to the florist*
2) PP → P (NP)
   a) "I throw some eaten food up."
   b) "I haven't met her before."
   c) If "up" and "before" are indeed prepositions, it would suggest that the Noun Phrase (NP) typically found within a Prepositional Phrase (PP) can sometimes be optional. However, despite these particles visually resembling prepositions, their classification remains a subject of ongoing debate among linguists.

d. Verb Phrases (VPs)

The Verb Phrase (VP) is a core syntactic unit, which, at its simplest, contains just a single verb. This minimal form

typically occurs with intransitive verbs, which do not require an object (e.g. $V_{[NP\ \_]}$):indicating a verb that takes only a subject.

1) VP → V
   VP → jumped
2) VP → V (AdvP)---- Jason [VP jumped suddenly].
3) VP → (AdvP+) V (AdvP+)= Dio [VP [AdvP deliberately] [AdvP always] left [AdvP quietly] [AdvP early]]
4) VP → (AP+) V (NP) (AP+) = Nadya [VP hugged her mother-in-law tightly].
5) VP → (AP+) V (NP) (NP) (AP+)
   Lemy gave [NP the boy] [NP a bar of chocolate] [AdvP yesterday].
6) VP → (AdvP+) V (NP) (NP) (AdvP+) (PP+) (AdvP+)
   Lena usually picked her flowers [from the garden] [with her hands]

2. Clauses

A clause is fundamentally composed of a subject (represented as a Noun Phrase or NP) and a predicate (which is a Verb Phrase or VP). In syntactic analysis, this structure is commonly labeled as a Tense Phrase (TP).

a. TP → NP VP = Lena usually picked her flowers from the garden with her hands.
   [TP[NP Lena] [VP usually picked her flowers [from the garden] [with her hands]].
b. TP → NP (T) VP =Elena might chase the cat.
   [TP [NP Elena] [T might] [VP chase the cat]
   It might seem surprising that certain elements won't be classified as verbs; the rationale behind this will be clarified in subsequent sections. Additionally, it's worth noting that the 'T' (Tense) component within the 'TP' (Tense Phrase) is not always obligatorily present.
c. CP → (C) TP = Sam said he hit the boy.

[TP Sam said [TP he hit the boy]].

The provided text explains that a clause like "he hit the boy" can be found nested within a larger main clause. These nested, or "embedded," clauses are frequently introduced by a "complementizer" such as "that" or "if," as illustrated by the structure [TP Sam said [CP [C that] [TP he hit the boy]]], which requires a specific rule (CP → (C) TP) to incorporate the complementizer. For simplicity, it is currently assumed that all embedded clauses are Complementizer Phrases (CPs), even if the complementizer itself is omitted (e.g., "Sam said he hit the boy" still contains a CP). It's also noted that embedded clauses can occupy various positions within a sentence, appearing not only in the typical direct object slot but also as the subject.

d. TP → {NP/CP} (T) VP

[$_{TP}$ [$_{CP}$ That he hit the boy] worried Tom].

This necessitates adjusting our TP (Tense Phrase) and VP (Verb Phrase) rules to accommodate embedded clauses. Syntacticians indicate a choice between options by using curly brackets, for instance, {NP/CP} signifies that either a Noun Phrase (NP) or a Complementizer Phrase (CP) is permissible, but not both. Modifying the TP rule is quite simple: we just enable an NP or a CP as the initial element.

e. VP → (AdvP+) V (NP) ({NP/CP}) (AdvP+) (PP+) (AdvP+)

Fira quietly asked [NP Nina] [CP if [TP Tom ate her burger]] yesterday over the phone.

This particular rule has its limitations. It currently doesn't account for drawing tree structures for sentences where an Adverb Phrase (AdvP) precedes a Complementizer Phrase (CP), as seen in examples like "Fira quietly asked Nina if Tom ate her burger." Furthermore, we cannot simply introduce an optional Adjective Phrase (AdjP) before the

{CP/NP} option in the rule, as Adverb Phrases (AdvPs) are not permitted to appear before a Noun Phrase (NP).

f. NP → (D) (AdjP+) N (PP+) (CP)

[NP The fact about Anna [CP that she likes Gelato]] bothers Natasha

These rules account for a wide variety of English sentences. A sentence using each of these rules is shown below:

The big man from England has often said that he gave carrots to rabbits.

TP → NP (T) VP

NP → (D) (AdjP+) N (PP+) = The big man from England"

(T)→ has"(kata kerja bantu penanda *tense*)

VP → (AdvP+) V ({NP/CP})= often said that he gave carrots to rabbits

SENTENCE STRUCTURE

(Hambali, Muslih and Mirizon, 2017) define that a sentence can be straightforwardly defined as a collection of related words that include at least a subject and a predicate. According to (Aarts, 2001), a sentence is essentially a sequence of words arranged according to specific rules. However, (Miller, 2002) opts to use the term "construction" when referring to what is commonly known as a sentence.

(Hambali, Muslih and Mirizon, 2017) observed that sentences can be far more intricate than those previously examined, positing that their complexity is theoretically boundless. Additionally, (Wekker, H., and Haegeman, 1996) outlined the hierarchical structure of sentence constituents, as illustrated in the following diagram:

SENTENCE↔CLAUSE↔PHRASE↔WORD↔MORPHEME

(Meyer, Charles, 2009) presents a slightly different hierarchy of sentence constituents compared to Wekker and

Haegeman, primarily because his diagram omits the morpheme level, as illustrated below.

SENTENCES → CLAUSES→PHRASES→WORDS
Largest smallest

While the two diagrams may differ slightly in their specific representations, they both fundamentally illustrate that a sentence serves as the largest syntactic constituent, with the word functioning as the smallest. The diagram also shows us what the syntax rules do is “to combine words into phrases and phrases into sentences” (Fromkin, V., Rodman, R., & Hyams, 2014). The study of syntax is the examination of how sentences are built and how their various parts relate to each other structurally (Finegan, 2004). (Finegan, 2004) further observes that any constituent—defined as a collection of words operating as a singular entity—serves as an important foundational component for comprehending this linguistic structure. While a grammatical category typically classifies a word's type or class that subsequently forms part of a sentence, grammatical function denotes the specific role a word class plays, such as serving as a subject, predicate, or adjunct. Below is the example:

(1) James repairs ten computers in the workshop every day.

From a grammatical category perspective, "James" is classified as a noun, while "repairs" functions as a present tense verb. The phrase "10 computers" constitutes a noun phrase, "in the workshop" is identified as a prepositional phrase, and "every day" operates as an adverb. Shifting to grammatical function, the sentence is structured with "James" serving as the subject. The predicate includes the verb "repairs," which takes "ten computers" as its direct object. Additionally, "in the workshop" and "every day" act as adjuncts, both performing adverbial roles.

Components of a Sentence

A sentence, recognized as the largest grammatical unit, can be broken down into two main parts: a noun phrase that functions as the subject and a verb phrase that acts as the predicate (Jackendoff, 2003). Given that a sentence fundamentally comprises these two primary elements—the subject and the predicate—the subsequent discussion will elaborate on each of them.

Subject

(Aarts, 2001) posits that one can easily identify a sentence's subject by asking "who" or "what" the verb refers to. For instance, in the sentence "Luthfiah has taken a picture of me," posing the question "Who has taken a picture of me?" yields "Luthfiah" as the answer, thereby identifying it as the subject. Fundamentally, a subject is either a noun or a pronoun, though it can manifest as a simple noun, a noun phrase, a noun clause, or a pronoun.

Predicate

A predicate can be defined as an expression that describes an activity or event, according to (Radford, 2009). The verb serves as the predicate's central element within a sentence. (Pavey, 2012) further conceptualizes the predicate as a "core" structure, comprising a "nucleus"—which refers to the verb itself—and "arguments," representing the participants involved in the action or event.

(1) The surgeon has done the surgery.

In the sentence "The surgeon has done the surgery," the verb phrase "has done" takes two arguments: "the surgeon" and "the surgery." According to (Miller, 2002), a verb plays a crucial role in a sentence, governing not only the immediate words or

phrases that follow it but also influencing every other phrase within its clause. Consequently, a verb is an indispensable element in a sentence; without it, the sentence would lack meaning. Furthermore, a verb in a sentence is termed a "predicator," while subjects and objects are referred to as "arguments" (a term more frequently employed in semantics). (Meyer, Charles, 2009) defines a predicator as comprising lexical and auxiliary verbs. (Radford, 2009) further clarifies that an argument is a linguistic expression representing a participant in the activity or event being described, with these participants including both subjects and objects. Essentially, a predicate is invariably composed of either a main verb or an auxiliary/modal verb combined with a main verb. Examples:

(1) The singer *performed* well.
verb

(2) The singer *has* *been performing* for two hours.
Aux verb

Object

An object, while part of a predicate, is not as crucial as the verb and can often be omitted from a clause (Hambali, Muslih and Mirizon, 2017). In the sentence of "The students are gathering in the classroom" lacks an object. Structurally, an object is a word, phrase, or even a clause that functions like a noun, typically appearing after a verb or a preposition.:

(1) Aida helped *her sister.*
S verb Object

(2) Laily is talking about *her problem*.
S verb prep object

A verb can take either a single object or a pair of objects. When a verb has two objects, the first is referred to as the direct

object (DO), which is a noun or pronoun that directly undergoes the verb's action. The second, known as the indirect object (IO), specifies the recipient or beneficiary of that action. For example:

(1) My father have sent *my mom* **a bouquet of flowers.**
S verb *IO* **DO**

Adjunct

A complete predicate can also include an adjunct, which is essentially a word or group of words that functions like an adverb to modify a verb within a sentence. (Hambali, Muslih and Mirizon, 2017)

For examples:

(1) "We will leave in an hour." (The phrase "in an hour" indicates when the action will occur)
(2) "She sings beautifully." (The word "beautifully" describes how she sings)

Complement

Learners occasionally struggle to distinguish between adjuncts and complements. A complement, in this context, is any component—be it a single word, a phrase, or an entire clause—that is essential for completing the meaning of a predicate or the core verb within a clause (Hambali, Muslih and Mirizon, 2017). Study these examples;

(1) "She is a doctor." (doctor describes "she")
(2) "He is here." (here describes "he")

CONCLUSION

This chapter introduces syntax as the systematic study of how words combine to form grammatically correct phrases, clauses, and sentences, serving as the "architectural blueprint of language". It explores various definitions of syntax from linguists like(Chomsky, 1965) who focuses on sentence-building

rules , (Fromkin, V., Rodman, R., & Hyams, 2014) who emphasize its cognitive aspect and structural relations , and (Carnie, 2013) who views it as the branch unpacking sentence construction. The text differentiates syntax from morphology, which focuses on word formation. The core units of syntactic analysis—words, phrases, clauses, and sentences—are detailed, explaining how words are classified (lexical and grammatical categories) , how phrases function as single units , and how clauses contain a subject and predicate. The sentence is presented as the largest unit, built hierarchically from smaller constituents like words, phrases, and clauses. Finally, the chapter outlines sentence components, defining the subject as the doer of the action , the predicate as the expression denoting activity or event , objects as elements receiving the verb's action , adjuncts as optional modifiers , and complements as elements completing the predicate's meaning

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AUTHOR'S PROFILE

Nurhayati S.

The author, a lecturer in the English Literature Study Program at Bina Sarana Informatika University's Faculty of Communication and Language, holds a Master's Degree in English Education. Her research primarily focuses on applied linguistics within education, alongside discourse analysis, semantics, and syntax. In this book chapter, the author intends to clarify the concept of syntax and elaborate on its fundamental units of analysis: words, phrases, clauses, and sentences. This includes an explanation of word classification (based on lexical and grammatical categories), the function of phrases as unified syntactic components, and the structure of clauses, which inherently contain a subject and predicate.

CHAPTER 6
MEANING IN LANGUAGE: FOUNDATIONS OF SEMANTICS

Nurul Fitriani
Pontianak State Polytechnic
E-mail: nfitriani2015@gmail.com

INTRODUCTION

Semantic is part of linguistics which studies meaning in language including the meaning or a word(s), sentences, and/or figurative expressions (Davis, 2022). Semantics is part of linguistics. Aspects of linguistics other than semantics are: Phonetics (the study of speach sounds), Morphology (the study of formation of words such as dis (preffix)-agree (root)-ment (suffix)), syntax (the study of sentence structure which can be in the form of clauses or a sentence), phonology (the study of how sound functions), pragmatics (the study of how language is applied in context), psycholinguistics (the study of the psychological and neurological processes in language), sociolinguistics (the study of the language in the society) (Bruhn de Garavito & Schwieter, 2019). Semantics gives meaning to language expression (Davis, 2022). Meaning itself is in our mind and we use language verbally or non-verbally to express meanings. Semantics studies the aspects of meaning and it does not depend on context. The expresion can be in forms or words, phrases, or sentences. Semantics studies the relationship of forms of linguistics with mental representation such as in sinonym, antonym, hyponym, and other forms of relationship (Bagha, 2011). For language learners or educators, semantics permits us to escalate the depth and complexity of interpersonal communication.

It can be seen that learning semantics is very crucial, as meaning of a sentence, does not come only from the combination of each word's meaning. Meaning in a word, phrase, or sentence may be different from the arranged words. For example, in metaphors or personification, meaning of a phrase or sentence is different from the meaning of each word. According to Tseng and Chuang (2022) and Monzó-Nebot (2020), culture influences the meaning of language. Therefore, when learning a foreign language, it is important to understand the variations and adaptations of culture and language. As stated earlier, it appears that meaning is more complex than just the arrangement of words. Semantics attempts to study the reason of the complexity (Smith, Florence, & Maria, 2018). Piekkari, Tietze, and Koskinen (2020) assert that when cultures and languages cohabit, the implication of semantic conversion and cultural adaptation of a metaphor is augmented. Culture needs to be addressed in the study of meaning and it affects individuals' perception (Asghar, Torrens, & Harland, 2018). As stated previously, our perception forms the meaning.

Semantics has different concepts rooted from the meaning of words (lexical meaning) and when the words are combined (compositional meaning). The discussion of the key concept of semantics and the importance of semantics in ELT and challenges in semantics will be explained below.

KEY CONCEPTS IN SEMANTICS RELATIONSHIP

Each word has its own meaning which identifies verbs, nouns, adjective, adverb, and other categories of a word. Each word has its correlation with other words. Semantics recognizes the meaning of a word (lexical semantics) and the meaning of a word when relates to other words (compositional semantics). Semantics or the study of meaning in language creates other meanings in sense and reference, literal and non-literal meaning,

denotation and conotation, ambiguity, entailment and presupposition, figures of speech, and semantic roles**.** These are also key concepts of semantics. Further discussion below is based on studies conducted by Geeraerts, Speelman, Heylen, Montes, De Pascale, Franco, and Lang (2023); Giulianelli, Del Tredici, and Fernandez (2020); Schäffner and Chilton (2020); Zimmermann and Sternefeld Bagha (2011); Adisutrisno (2008).

Lexical semantics

Understand the lexical semantics is very important in order for us to not only undertand the meaning of the word, but we also understand how the words are presented in our mind and how they relate with each other. This will assist us in choosing the right word to express meaning. The meaning of a word or lexical semantics can be: (1) synonymy; (2) antonymy; (3) hyponymy; (4) polysemy; (5) holonymy and metonymy; and (6) homonymy.

Synonymy. The first lexical semantics is synonymy where two or more words have similar meaning. Synonymy can be partial and absolute. Partial synonymy is when the meaning of two words is not fully similar. For example:

big – huge hear – listen angry – furious

both big and huge have similar meaning: big. However, huge means much bigger than ‘big’. Hear and listen both describe activity received by ears. However, listen is more than just hearing. Listen is hearing something attentively and seriously. Furious is not only angry, but very angry. Another synonymy type is absolute synonym. Some studies indicate they are not in favour of absolute synonymy as there are no words with exactly the same meaning. However, examples in several fields indicate absolute synonymy such as H2O and water (both

identify as water) in chemistry, or hypertension and high blood pressure in medical field.

Antonymy. Antonymy means two words have the oposite meaning. There are three types of antonyms: complementary, gradable, and converse antonyms. Complementary antonymy mean that if one is correct, another word is incorret. For example:

male – female true – false pass – fail
odd (number) – even (number)

There is not a word in between male and female, or true and false. However, in gradable antonymy, there will be word(s) in between the oposite words, or the words have degree. For examples hot-cold and small-big

hot – warm – cool - cold tiny – lttle – small – big

Another type of antonymy is converse antonym, also known as a relational antonym, where two words have conversed meaning. For example:

buy – sell borrow – lend teacher – student husband – wife

These words have relationship (relational antonymy) such as the seller sells goods to buyers (who buy what is sold) and teachers teach students. Somebody lends something to one who borows, and in order to be called as a wife, someone must become her husband.

Hyponymy. Hyponymy is where a word identifies as a certain category (hypernym) and another word (other words) is part of sub-categories (hyponym) such as animal and dog, flower and jasmine, fruit and watermelon. There is a gradable relationship as well in hyponymy. We understand that the word dog refers to an animal. So, when ‘Blacky’ is a dog, ‘Blacky’ is

an animal. Watermelon is an example of fruit and jasmine is a type of flower, like rose, camelia, and tulip.

Polysemy. Polysemy is a word which has more than one related meaning. For example, the word “head”. In a sentence: “She is wearing a hat on her head” and in a sentence: “She is the head of this unit”. When reading these two sentences, we know that “head” in the first sentence means part of our body which is on the top side of the body, while in the second sentence we recognize that “head” means she is the leader of the unit (means she is also above others in that unit). Another example is the word “book”. In a sentence: “I almost finish reading this book” we recognoze that the word “book” refers to a pile of papers, put together, into one folder with a cover and page numbers. People write on paper to make a book. Meanwhile, in a sentence: “he will book the restaurant for next Monday dinner” we understand that the word “book” here it means we request a reservation for the restaurant’ worker to make our reservation at the restaurant.

Homonymy. Homonymy is almost similar to polysemy. However, if in polisemy the meaning is related, in homomyny one word has a different meaning and the meanings are not related. There are three types of homonymy: homographs, (a word have similar spelling but the pronounciation is not necessarily the same), homophones (a word may have similar pronounciation, but the spelling is different), and true homonyms (the spelling and pronounciation are similar but the meaning is not the same). The word “wind” is an example of homograph where the spelling is the same but the pronounciation and meaning are different. The sentence: “The wind is very strong here” and the sentence “Could you please wind the coil?”. In the first sentence, “wind” is part of natural phenomena and it is pronounced: /wɪnd/. The the second sentence, the word “wind” means to twist and it is pronounced: /waɪnd/. The meaning is different. Homophone examples are

"hole" – "whole" and "sea" – "see". For examples in "There is a hole in the wall" and "There was a whole load of rubbish dumped on the road side". Other samples are "They see a horse in a paddock" and "We will go to the sea next month". These words have different spelling and meaning, but similar pronounciation. The last type, is the true homonyms such as "fat" and "bank". The sentence, "She looks fat wearimg that red dress" and "He does not like eating fat". The first sentence "fat" means that the woman looks chubby or overweight. The second sentence means that the "fat" is a nutrient which gives your body energy. The word "bank" in "I save my money in a bank", "She will be waiting on the riverbank", and "People have to bank up in order to to go through the toll gate". The first sentence, the word "bank" means a finacial institution. The second sentence, the word "bank" refers to the side of a river while the word "bank" in the third sentence points to a line up. The meanings in homonymy are not related.

Holonymy (and Meronymy). Holonymy in a word means part of (meronym) another word (a whole or holonym). For example: nose, eyes, eyebrow, eyelash, cheeks, are parts of a face. Parts of a car are: steering wheel, tires, seats, transmission, brakes, and many other parts. So, in the example: my father said to James, "Could you please fix the steering wheel?" or "Could you service the transmission" implies that my father asked James to fix the steering wheel or service the transmission in the car.

Compositional Semantics

Compositional semantics is how the meaning of a sentence is actually derived from several words or phrases. The combination of words creates a meaning in a sentence. To do so, we must understand the meaning of words (as explained above) to understand a sentence. For example: "Daniel kicks the ball to

James". In order to understand the sentence, we must know the meaning of "kick" (an action to push something using your foot), "ball" (a round thing), and Daniel is the person performing the action to James. When we know these words, we know the meaning of this sentence. Conversely, when a word is put into a sentence, it helps us to understand a sentence. Take an example from homonymy above for the word "fat". When we see the word, we might be confused as "fat" can be overweight or an important nutrient. But when it is put in a sentence, we understand the meaning of the word in the sentence. Understanding structure of words in a sentence (grammar) will also assist us to understand a sentence, as similar words which are used in two sentences, refer to different meanings. For example, the sentence: "Jenny eats a chicken" and "A chicken eats Jenny". Both sentences use similar words but the meaning is different. Both sentences may use slightly different words, but the meaning is the different as the structure (grammar) has changed.

Reference and Sense

Reference is an object that refers to the word or the desription of a word. Sense is a way (ways) of reprenting the word. When we hear a word, we have a concept in our mind about what the word is. Sense is the representation of the word spoken, in our mind. The concept or what it is, concieved in our mind might be different from what it is described by others. For example, the reference word is "moon". It may result in many representations in our mind when we hear the word "moon". In our mind, it can be described as "the satalite which appears at night time", "something round in the sky at night", or "where Neil Amstrong landed". Misinterpretation can also occur such as in a word: "bat". The sense can be "an animal which flies at night", "a wooden instrument to hit a ball", "a vampire", or "a

mammal which can fly". A complete sentence is needed to understand the context of a word so that it comes to the correct sense (compositional semantics).

Literal and Non-Literal meaning

Not all words have literal or direct meaning. Words can have non-literal or figurative meaning, which also include simile, irony, metaphor, personification, and idioms. For example, the word "fire". In "I see fire on the top of that roof" and in "I am on fire now!". The first sentence, the word "fire" refers to as it is, something that can burn and is hot. In the second sentence, it does not mean that the man got burnt. The figurative meaning for the second sentence is that the man is totally motivated. Another type of figurative language is simile which is directly comparing something that has similar quality with another word. For example, beauty and a full moon, smelling nice and rose, or smell rotten like bad egg:

"She is beautiful like a full moon"
"The room smells nice like roses"
"This kitchen smells like a rotten egg"

Irony can be: "The weather is just perfect for a picnic!" (It is heavy rain with thunder and lightning). It is about saying something, but the meaning is the opposite of what it is said. Another figurative language is metaphor, which is like simile, comparing something with similar quality, however, metaphor does not use the word "like" or "as". For example: "Emily is the star of this show". In the show, Emily performance was stellar. Her brilliance is compared to a star which shines brightly. Personification is giving human attributes to non-living things such as "The leaves waved in the wind", "The sunlights reflection dances on the pond". Idioms are used to make the expression more colourful. Idiom is an expression where the

meaning is different from the meaning of the words expressed. For example, “I cannot go to school, I am under the weather”. Idiom “under the weather” does not mean one is literally under the weather. The meaning is that he is unwell (sick). Another example is “I have to bite the bullet and make a run for it.” It does not mean he will bite a bullet. Bite a bullet here refers to “being brave”.

Denotation and Conotation

Denotation is the real meaning of a word such as a “rose” as a type of flower, a “tortoise” as a reptile with hard shell on its hunch, or a “table” as an item of furniture. Meanwhile, conotation is additional meaning to the word. For example, “He walks slow like a tortoise”. Walking slow is identified as the the way a tortoise will walk.

Ambiguity in Semantics

Ambiguity happens when a sentence or a phrase can be interpreted with more than one meaning. In lexical ambiguity, the word like “bat” and “bank” as mentioned earlier. In “I saw a bat behind the door”. The word “bat” is ambiguous as: he saw a bat as an animal or a wooden stick? In “I will see you at the bank, does it mean a finacial place or side of a river? In sentence ambiguity, in “I talk to the man with an umbrella”. Does it mean, He talks while holding an umbrella, or he talks to a man who is holding an umbrella.

Entailment and presupposition

Entailment is a relationship between two sentences, where is the first sentence is correct, the second sentence must be correct to. For example, the first sentence “James marries Amy” and the second sentence is “James is Amy’s husband”. In the meantime, presupposition is when the speaker supposes that the

listeners have understood the meaning of the setence he utters. In “James’s sister is beautiful” and the second sentence is “James has a sister” as the presupposition. Even though if James’s sister is not beautiful, the presupposition is that James still has a sister. It can be seen that in entailment, there is dependency while in presupposition, there is no dependency.

THE IMPORTANCE OF SEMANTICS AND CHALLENGES

The study of semantics is crucial, expecially when learning a new language. Even though we know word by word in a foreign language, however, it does not imply that we understand when the words are arranged into phrases or sentences. The study of semantics will improve students’ comprehension in word meaning, how they are related, and how the meaning is shaped in context (Alsayed, 2019; Watzinger-Tharp & Paesani, 2020). However, study of semantics has challenges for new leaners, who are just learning a new language. Semantics is not an easy study, as meaning of words and sentences as explaned previously, is not easy to understand. Moreover, for a foreign language learner, to understand the meaning of a sentence, we need to understand the words. That is why we need to understand key concepts of semantics. Moreover, new words appear every year according to Rajarajeswari and Mohana (2013). For example, a study conducted by Nabila and Abdulrahman (2021) described how new words were created during Covid-19. These words are used in social media and daily communication such as covidiot, covidient, blursday, quaranteam, coronacation, zoom-bombing, doom-scrolling, and other new words. Rajarajeswari and Mohana (2013) also explain that the meaning can also change. For example, the word “meat” once meant food, but now meat is seen as “flesh”. Moreover, people’s personal preference changes the meaning of a word.

For example, for the LGBT group, they generally use nonbinary pronouns. The word “He” or “She” is replaced by “They”. The word “Him” or “Her” is replaced by “Them” (Bradley, 2021; Bradley, Salkind, Moore, & Teitsort, 2019).

SUMMARY

The study of semantics is very important to understand meaning. It will be helpful so in order to know meaning, we know the foundation of semantics, such as what semantics is and why it is crucial to study semantics. It is also important to understand key concept of semantics and challenges in understanding the meaning of words.

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AUTHOR'S PROFILE

Nurul Fitriani, M.Ed., Ph.D.
was born in Pontianak, Indonesia. She finished her Master Study and Doctoral Study in education in Flinders University, Adelaide, South Australia. Her Doctoral study is in Leadership and Management, and her thesis was in Knowledge Management.

As an ESP lecturer in the Civil Engineering Department of Pontianak State Polytechnic, she has publications in Civil Engineering and in English teaching such as in EMI. Her research interests are in English teaching, Knowledge Management, and Civil Engineering. She is also a presenter of talkshow programs and a coordinator for English programs for the West Kalimantan TVRI. She is a translator for the West Kalimantan TVRI for TVRI World. Nurul Fitriani M.Ed., Ph.D. is also one of the members of the IPEC (Indonesian Polytecnics English Championship) taskforce team.

CHAPTER 7
LANGUAGE IN CONTEXT: THE DOMAIN OF PRAGMATICS

Prapti Wigati Purwaningrum
Universitas Bina Sarana Informatika, Jakarta
E-mail: prapti.pwp@bsi.ac.id

INTRODUCTION

Pragmatics is a branch of linguistics that studies the use of language in real contexts. Through a deep understanding of pragmatics, we can find out how language is used in everyday interactions more effectively. Like semantics, pragmatics is also closely related to meaning. However, what distinguishes the two is that in pragmatics the meaning studied must be associated with the speaker. Therefore, pragmatics is different from other levels of analysis because pragmatics is the only level that considers who uses language, in this case who utters the utterance.

This book chapter tries to underline that the realm of pragmatics is still interesting and highly relevant to the current situation. Pragmatics is a study of the relationship between language and meaning in a social context. Therefore, pragmatics has become one of the main fields in linguistics that continues to develop until now.

To make it easier for readers, this book chapter begins with a brief description of pragmatics, then what is included in the realm of pragmatic discussion, and touches a little on the latest developments which are the state of the art of pragmatics.

PRAGMATIC DEVELOPMENT

The development of pragmatics is marked by the emergence of cognitive flow initiated by the emergence of Noam Chomsky's transformational grammar theory. He introduced two dichotomous terms, namely competence and performance (Chomsky, 1957). At that time, linguistic studies were limited to the field of competence. In its development, linguists began to think that the area of linguistic study was not only in the realm of phonology, morphology, and syntax, but also involved the level of meaning, namely semantics. However, the limitation of language studies in terms of competence and semantics was felt to be lacking or incomplete in exploring information.

The development of Pragmatics in Europe was since 1940. A philosopher Charles Morris is closely related to the emergence of the term pragmatics. Morris tried to remix the thoughts of previous philosophers, namely Locke and Peirce, about the science of signs or Semiotics. Then Morris divided semiotics into three branches, namely syntax, semantics, and pragmatics.

This is very essential for linguists who want to study the influence of language use in society. Language studies, both about sentences and utterances, cannot be separated from the use of language that involves the context in which the language or utterance is spoken. Since then, several linguists have begun to be influenced by the work of several philosophers such as (Austin, 1962) with his book How to do Things with Words, (Searle, 1979) developed Austin's theory of two main rules in speaking, namely "Regulative and Constitutive", and (Grice, 1990) especially in the field of speech acts, through the "Cooperative Principle" which must be obeyed in order for an utterance to be successful. Since then, developments in the fields of semantics and pragmatics in linguistics have been increasingly rapid.

Each expert has a different understanding of pragmatics. In (Yule,1996;Yule, 2006;Yule, 2020) understands pragmatics as a science that studies meaning contextually, in which sometimes utterance is uttered less than it is spoken. Next, (Thomas, 1995a) defines pragmatics as a study of meaning in an interaction. Meanwhile, according to (Leech, 1985) views pragmatics as a field of study related to semantics. This is illustrated that semantics is in pragmatics, pragmatics is in the scope of semantics, and then views both as two things that can complement each other. In its development, linguists began to think that the area of linguistic study is not only in the realm of phonology, morphology, and syntax, but also relates to the level of meaning, namely semantics. However, the limitation of language studies that stop at the semantic level is felt to be lacking or incomplete in exploring information. Semantic studies seem to stop at the form of language and entities in the world, while pragmatic studies examine the relationship between the form of language and the users of the language.

As a field of study which is considered to be novel, pragmatics has experienced quite rapid development. Several of its theories have experienced shifts or paradigm changes. Since pragmatics was introduced by Morris cited by (Jia, 2019; Mey, 1993), then began to develop through Austin's theory, strengthened by Searl, Grice emerged, and was redeveloped by Brown and Levinson, Leech, and several other experts. Since then, pragmatics has become increasingly worthy of being explored and studied. Like the development of other sciences, the development of pragmatics has also experienced pros and cons, triggering reactions from several experts. For example, the principle of cooperation (*PKS*) has been criticized by many as a waste of theory. This view comes from (Wilson & Sperber, 2004). Both experts argue that of the four Grice maxims, in a conversation only relevance is needed. However, as science develops, it is not

impossible that Sperber & Wilson's theory of relevance will be equally refutable by finding real communicative actions that do not convey assumptions about their optimal relevance (but instead convey, for example, assumptions about literal truth, or no assumptions at all).

The development of increasingly dynamic science, the phenomenon of language use problems in society that arise due to several factors outside the language itself is increasingly widespread, so that it does not only cover intradisciplinary, but also interdisciplinary. Currently, it seems that new symptoms in the field of language by utilizing modern technology have resulted in a new branch of discipline in science called language computing. This science is not a computerization of language, but a branch of linguistics by utilizing computers not only to understand language as a communication tool, but also used to trace the use of language, especially through the internet which includes social media and online news.

LANGUAGE IN CONTEXT

As humans, we have to communicate with others using language. Conversations between us are one of the interesting subjects to discuss. Our utterances must be structured in such a way that the interlocutor understands the message we want to convey. The utterances, in addition to being grammatically correct and semantically acceptable, must also be appropriate to the situation at hand (the context of communication). A particular utterance may have different interpretations in different situations. As appropriate to the context in which the utterance occurs, many utterances are indirect, meaning that their literal meaning is not all that is intended by the speaker. Sometimes, the literal meaning is very far from the indirect meaning. This raises the question of how we understand that a particular utterance has an indirect meaning. We obviously have

to draw inferences based on our best guess of what the speaker meant.

When we think about meaning, it is also important to consider the contribution of context. In simple terms, we can think of pragmatics as the study of the contribution of context to meaning. Context is the physical setting in which a sentence is spoken, the speaker's opinions, and the speaker's knowledge of how language can be used to inform and persuade the speaker. There are four subareas of context: 1). Linguistic context, referring to what has been said in previous utterances 2). Epistemic context, referring to what the speaker knows about the world 3). Physical context, in which the conversation takes place 4). Social context, referring to the social relationships between the speaker and the addressee.

It is undeniable that often an utterance is uttered incompletely, but the message intended by the speaker is conveyed well to the addressee. This proves that the use of language is not only based on grammatical aspects, but also how the participants in the speech understand each other's utterance. Success in understanding the message may be due to shared knowledge between the speaker and the addressee, as well as relevant speech components.

At this point, a new study called pragmatics began. Philosophers of Language, such as Austin, Searl, and Grice along with their theories are very influential in the development of a new area of study, namely pragmatics (Leech, 1985). Pragmatics as a new component in linguistics also acts as a completion of the components that already exist first, phonology, morphology, syntax, and semantics. In this case it can be said that the study of meaning if it only reaches semantics then it will be like a love story with cliffhanger which just stops without knowing what, who and why it happened.

Through pragmatics, the exploration of meaning can continue by involving the context and relevant speech components.

THE DOMAIN OF PRAGMATIC

Speech Acts

Speech Acts were first introduced by(Austin, 1962). Through his book "How to Do Things with Word" it is conveyed that when a communication takes place, all forms of information spoken by the speaker contain the intention that they want to convey to the addressee. Austin classifies utterance into two, namely performative and constative utterance.

Constative / saying something that can be assessed as true or false, is understood as an utterance that does not perform an action but can be known to be true or false. According to (Austin, 2020) constative utterances are a type of utterance that describes a situation or fact. Constative utterances have consequences to be determined true or false based on the factual relationship between the speaker, the addressee and the existing context. So, the dimensions of constative utterances are true and false.

Performative/doing something by saying something, basically when someone says something, that person also does something. For example, when someone apologizes, promises, then that person does not just say but also performs the act of apologizing and the act of promising. Searl tried to develop Austin's theory of speech acts. He argued that all speech acts are performative.

Austin's greatest contribution to speech act theory is the distinction between locutionary, illocutionary and perlocutionary acts. According to Austin in (Yule, 2020), when a speaker utters something, the speaker performs three actions at the same time, namely:

(a) Locutionary acts are understood as a locutionary act containing a real or literal meaning. In this case, the speaker says something without any intention for the speech partner to carry out the intention of his speech.
(b) Illocutionary acts are understood as an act of saying something. In other words, illocution can be understood as the meaning behind the utterance uttered by the speaker.
(c) Perlocutionary acts are understood as the effects of an utterance delivered to a speech partner. The response is not only in the form of words, but also in the form of actions or deeds.

The next contribution, Searl classifies non-speech into five (5): commissive, directive, expressive, declarative, and representative. In speaking, speakers often speak directly or indirectly. Direct speech act (TTL), when the speaker utters directly to the desired meaning. While indirect speech act (TTTL) is done by packaging speech in another form. For example, in the form of a question or using other supporting speech components. The use of direct speech and indirect speech is influenced by several factors, including more power, closeness, and seniority, so the choice of speech act type becomes important. In addition, direct speech and indirect speech are often associated with politeness strategies, the more indirect the utterance is more polite. However, it is different from (Gunarwan, 2007) who said that the use of indirect speech is included in the impolite category. This is because it forces the speaker to understand the meaning of the utterance longer, is often understood as sarcasm, and causes misunderstanding. (Thomas, 1995b:20) calls it a costly and risky utterance.

Cooperative Principle

Illustration

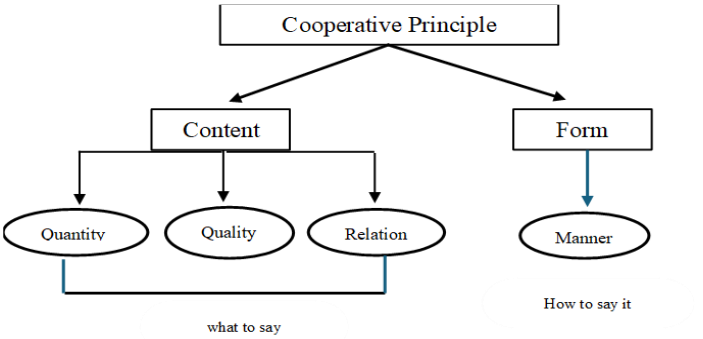
There is a boy sitting on the park bench and large dog lying on the ground in front of the bench. Another boy comes and sits down on the bench.

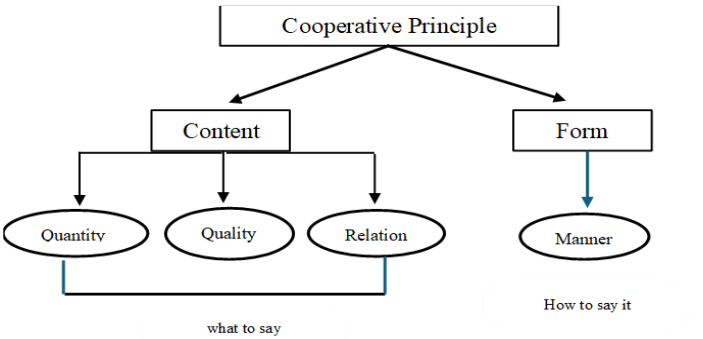
Gaara : Does your dog bite?
Gohan : No. (the man reaches down to pet the dog. The dog bite the man's hand)
Gaara : Ouch! Hey! You said your dog doesn't bite.
Gohan : He doesn't. but that's not my dog.

Source: https://knowyourmeme.com/memes/does-he-bite

Figure 7.1. Illustration

Next comes Grice's theory, he is Austin's student. Referring to the explanation above about the risks caused by indirect speech, then would it be better to speak directly? Through Grice's theory by obeying the four maxims in the Cooperative Principle: "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose"(Grice, 1989). The conversation can run more efficiently and succeed well. Here are the four maxims of the Cooperative Principle as follow with the illustration:





Picture 2. Four Maxims of Cooperative Principle

Quantity	:	It requires the speaker make his or her contribution as informative as necessary
Quality	:	It requires the speaker make his or her contribution one that is true
Relation	:	It requirse that the speaker says to others should be relevant to the topic and context
Manner	:	It requires the speaker should speak clearly, avoid obscurity, and in a well order way

Figure 7.2. Four Maxims of Cooperative Principle

The four maxims above come from Grice's idea that in a conversation information must be conveyed efficiently. One way to realize this is by obeying the four maxims. However, on the other hand, communication does not always convey information. (Holmes, 2005) said that in communication there is an affective function, namely to maintain social relations or often known as small talk. In English it is called phatic communication which is intended to maintain good relations between speakers and addressee. For example, in the utterance "just got home?", it may have initially been in the name of caring about what happened that causes someone comes home late. However, currently the question has shifted its function, namely phatic, which is usually just small talk because someone they know came home late. As a result of this shift, the speaker does not need to answer by considering the principles of cooperation. Thus, the principle of cooperation does not have to

be obeyed in every utterance when communicating, because the speaker and the addressee must maintain each other's face. In (Trosborgh, 1995:205) maps the indirectness of speech into eight. To buy breakfast, for example, the utterance can be:

The utterance “Wow, I have to go to class soon” falls into the category of vague (off record), which in (Brown & and Stephen C. Levinson, 1987) is called a speaking strategy. In this example, the words 'buy' and 'breakfast' are not mentioned.

Implicature

Some reasons why conversations do not always adhere to the principles of cooperation maxim include the desire to maintain or save face, the speaker's motivation to deceive the speaker, and the speaker intentionally wants to convey a message implicitly. This term is often known as implicature, which is information implied behind an utterance that is not spoken but communicated (Levinson, 2024). There are two types of implicature proposed by Grice, namely conventional implicature and conversational implicature in (Yule, 2020) Example:

“Even Matt wasn't seen at last night's Halloween party”

This statement implies that Matt is someone who never misses a party invitation.

Although Grice's theory with its principles of cooperation is not adhered to, this theory is very useful as an implicature theory as well as to identify why speakers do not fulfill the principles of cooperation, one of which is to reduce the impact of speech. It turns out that this is often done if the speech has the potential to threaten the face of the speaker or the addressee

(FTA). By choosing to use indirect speech, the speaker wants to carry out face protection or face saving act (FSA).

Grice's implicature theory has sparked quite a debate and rebuttal, one of which came from (Wilson & Sperber, 2004). Both experts argue that the theory is considered a waste of theory. This is because in a conversation, all that is needed is relevance. The theory of relevance was born to replace Grice's theory. The core of Grice's theory is that in order for a conversation to run efficiently and successfully, it is necessary to adhere to the four principles of cooperation maxims. Meanwhile, Sperber & Wilson's theory, in order for a conversation to run smoothly, all that is needed is 'connection' or relevance between the speaker and the hearer.

Example:

A : Do you often watch horror films?

B : I don't like films that make my heart feel like it's going to jump out of my chest from beginning to end.

Answer B is an answer that makes A have to think to understand it. The scope of the information includes:

(1) My heart feels like it's going to fall out
(2) Making aims to make people comfortable/happy
(3) Shows that show murder, ghosts and revenge are the horror genre

The three statements above are processed to be understood, then the answer to the conversation above is contextual implicature. It can be concluded that according to Sperber & Wilson, the implicature 'The show that shows murder, becoming a ghost, and revenge, is a horror genre' is an implied assumption. According to Sperber & Wilson, all implicatures are considered to be included in all categories. This is what makes the relevance theory more reasonable than Grice's implicature. In

addition, Grice's implicature is not distinguished from strong to weak, so this becomes vague.

Brown & Levinson base their theory of politeness on the notion of face which is divided into 2, namely positive face and negative face. (1) Positive face is understood as an individual's desire that what is associated with him will be considered good by others. (2) Negative face refers to an individual so that his actions are not disturbed by others. Furthermore, politeness used to maintain positive face is called positive politeness. Conversely, politeness carried out to save negative face is called negative politeness. The following are five (5) speaking strategies according to (Brown & and Stephen C. Levinson, 1987): (1) Speaking frankly without small talk (bald on record strategy). (2) Speaking frankly with small talk in the form of positive politeness (positive politeness strategy). (3) Speaking frankly with small talk in the form of negative politeness (negative politeness strategy). (4) Speaking not frankly (off record strategy). (5) Don't do FTA.

In contrast to Sperber and Wilson, (Leech, 1985; 1993:206-207)categorizes the existence of politeness theory, which seems to be used to save Grice's principles of cooperation. In politeness theory there is the Cooperative Principle with 7 maxims: (1) tact, (2) generosity, (3) approbation, (4) modesty, (5) agreement, and (6) sympathy.

Presupposition

Linguists argue that presupposition is no longer sufficient to be touched only through semantic studies but must intersect with the realm of pragmatics. As mentioned by (Mey, 1993:201) that utterance is more than just an abstract concept that states true or false, but concerns other relevant things such as the speech situation, the context of the utterance that applies and must be considered by the community of language users. Presupposition

is something that the speaker assumes to be true before making an utterance (Yule, 2020:155).

The utterance 'The president of Indonesia is brave' presupposes that there is a current Indonesian president, who can be used to prove whether or not he has a certain trait. So that the presupposition can prove whether or not the utterance The President of Indonesia is Brave is true. Another example, utterance ‘Kiki Saputri's podcast is very critical' presupposes that Kiki Saputri has a podcast, it can be used to prove the podcast is critical or not. So that the presupposition can prove whether or not the utterance Kiki Saputri's podcast is very critical is true.

Table 7.1. Types of Presupposition

Types of Presupposition	Example	
Existential	Sean’s bag is new	Sean exists, Sean has a bag
Factive	He didn’t know I was Married	>> I was Married
Lexical	She started judging	>> She was not judging before
Structural	Where did She buy laptop?	>> She bought laptop
Non-factive	I dreamed that I was in Sydney	>> I not in Sydney
Counterfactual	If I were your colleague, I would have helped you	>> I am not your colleague

PRAGMATIC DEVELOPMENT IN THE DIGITAL ERA

Along with the development of technology and digital communication, the study of pragmatics has also evolved. Effective communication skills in online media are becoming increasingly important. Currently, choosing and interpreting information well is a must to avoid misleading information. With pragmatics, it helps readers understand the context so that they can understand the information conveyed through social media and other online platforms.

In general, the development of language studies appears to be increasingly cross-disciplinary, especially in relation to the

development of media, communication technology, and the process of socio-cultural change (van Dijk, 2009). In addition, the development of studies on discourse associated with the use of language on the internet as a genre that is still very relevant today in discourse studies (Purwaningrum & Harmoko, 2025). For example, in the meaning of signs associated with representamen and objects based on the understanding that objects are not always the same as the reality given by representamen. Meaning in the perspective of semantic pragmatics, the emergence of meaning comes from signs that are interpreted by (Gunarwan, 2007; Hoed, 2014). After the sign is connected to the reference, the sign develops into a new sign, namely the interpretant. The interpretant can change into a new representamen indefinitely. In the process, representamen is in cognition. On the other hand, the level of interpretation is getting higher.

Through cross-disciplinary studies, the role of pragmatics can coexist with Peirce's trichotomous semiotics because there are three stages in interpreting signs. (Saifullah, 2019) tries to link the two 'semiotics Pragmatics' with the consideration that the theory of semiosis starts from the concrete and continues through the interpretant, it can become a new representamen. This representamen is in the human mind, this makes it very possible for the process of semiosis of meaning to continue, known as Peirce's 'Unlimited semiosis' in (Noth, 1995: 39-40). Next, (Hoed, 2014:12) developed Peirce's pragmatic semiotic theory through the concept of 'semiosis getok tular'. This concept sees the process of sign meaning as belonging to a social group that develops through the process of semiosis. Interpretant in one person, if shared with other people, becomes a new representamen and continues on.

The meaning continues, the flow of information in digital media continues to flow. To support this study, it can be linked

to the analysis of interaction through the Computer Mediated Discourse (CMD) approach to describe the media context and the context of communication situations that occur in digital space. Furthermore, to find out the power relations that occur in interactions in virtual space, it can be based on Foucault's perspective.

CONCLUSION

Currently, the study of language is no longer only intralingual, but can also be linked to other sciences that are relevant to current linguistic phenomena. In this book chapter, in addition to the realm of pragmatics, a glimpse of the current development of pragmatics is also presented, which is very possible to be included in cross-disciplinary studies. One that is very relevant today is the study of the use of language in virtual space. Each language system and symbol has unique and complex properties, which implies that each element in language, be it words, phrases, clauses, sentences, or discourse, has a certain meaning that is not only semantic, but also pragmatic. This meaning can change or develop based on the context of speech. Therefore, understanding the elements of language requires not only knowledge of the literal meaning of words, but also an understanding of how meaning is interpreted in different communication situations. This meaning is dynamic, which means it can change according to the context of the situation and time.

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AUTHOR'S PROFILE

Prapti Wigati Purwaningrum

The author is currently as a lecturer in the English Literature Study Program, Faculty of Communication and Language at Bina Sarana Informatika University. She completed her Doctorate degree in linguistics from Indonesian Education University, previously completing her master degree in Applied Linguistics at State University of Jakarta. Several studies have been conducted in the fields of Pragmatics, Semiotics, and Critical Discourse Analysis. In this book chapter, in addition to the domain of pragmatics, a glimpse of the current development of pragmatics is also presented, which is very possible to be included in cross-disciplinary studies. One that is very relevant today is the study of the use of language in virtual space.

CHAPTER 8
LANGUAGE VARIATION AND CHANGE: A SOCIOLINGUISTIC PERSPECTIVE

Abd. Hakim Muslim
MAN 5 Jombang, Jombang
E-mail: hakim519@ymail.com

INTRODUCTION

Linguistics, the scientific study of language, serves as a window into the human mind and society. It encompasses the systematic analysis of language structure (phonology, morphology, syntax, semantics) and language use (pragmatics, discourse). Within this expansive field, sociolinguistics emerges as a vital sub-discipline concerned with the relationship between language and society. Sociolinguistics investigates how language varies and changes in response to social structures, identities, and cultural contexts (Wardhaugh, R., & Fuller, 2021). This branch of linguistics shifts the focus from abstract, idealized language systems to the dynamic, everyday realities of language as practiced by speakers in diverse communities.

Understanding language variation and change is essential to comprehending how language operates in real-world contexts. Unlike prescriptive approaches that define a single "correct" form of language, sociolinguistics embraces linguistic diversity, recognizing that variation is not a sign of linguistic decay but rather a reflection of social identity, group membership, and contextual appropriateness (Oldani & Truan, 2022). Furthermore, language change, far from being anomalous, represents a natural, ongoing process driven by both internal linguistic mechanisms and external social factors.

In an era characterized by unprecedented global mobility, digital communication, and cultural exchange, the study of variation and change has acquired new relevance. As English continues to expand its global reach, evolving into diverse localized varieties, questions about linguistic norms, standards, and legitimacy become central not only for linguists but also for educators, policymakers, and learners (Kanwal et al., 2024). Thus, examining language variation and change offers crucial insights into the workings of language, shedding light on broader issues of identity, power, and globalization.

Understanding language variation and change carries profound implications for various stakeholders in the field of language and education. For English teachers, awareness of linguistic diversity is critical in fostering inclusive, flexible pedagogies that accommodate the realities of learners who bring with them diverse linguistic repertoires. As English has evolved into a global lingua franca with multiple legitimate varieties, rigid adherence to native-speaker norms is increasingly questioned in favor of approaches that valorize World Englishes and learner varieties (Kanwal et al., 2024).

This chapter aims to introduce readers to the fundamental concepts and frameworks associated with language variation and change from a sociolinguistic perspective. Designed as part of the broader volume *How Language Works: A Beginner's Guide to Linguistics*, it seeks to make complex sociolinguistic ideas accessible to an audience of students and lecturers engaged in the study and teaching of English language and linguistics.

The chapter will first delineate the nature of language variation, exploring how linguistic forms differ across regions, social groups, and communicative contexts. It will examine key dimensions of variation, including geographical dialects, social class-based sociolects, gender-based differences, and stylistic registers. Subsequently, the chapter will delve into mechanisms

and causes of language change, tracing how languages evolve over time through processes such as sound change, grammaticalization, lexical innovation, and semantic shift.

DISCUSSION

FUNDAMENTALS OF LANGUAGE VARIATION

Language variation refers to the phenomenon whereby different speakers or groups of speakers use different forms of the same language. This diversity is not random but is systematically influenced by a range of social and geographical factors (Ordóñez, 2021). Rather than viewing language as a monolithic, uniform system, sociolinguists emphasize its variability as essential to its function and evolution. Variation occurs at all linguistic levels, including pronunciation (phonology), vocabulary (lexicon), grammar (syntax and morphology), and usage (pragmatics).

Types of Variation

Language variation can be broadly categorized into three main types: regional, social, and situational.

- **Regional** (dialectal) variation arises from geographical separation. Over time, communities develop distinctive linguistic features, resulting in regional dialects. For example, British English and American English differ in vocabulary (e.g., *lorry* vs. *truck*), spelling (*colour* vs. *color*), and pronunciation (the rhotic *r* in American English) (MacKenzie et al., 2022).
- **Social** (sociolectal) variation is linked to factors such as social class, ethnicity, gender, and age. Social dialects, or sociolects, reflect group identity and can signal status, solidarity, or rebellion. For instance, the non-standard use of

ain't in some working-class varieties of English contrasts with the standard *isn't*, reflecting class-based linguistic distinctions (Mufwene & Escobar, 2022).

- **Situational** (register/style) variation refers to changes in language depending on context and audience. Speakers adjust their language, known as *style-shifting*, depending on whether they are in a formal setting *(e.g., academic presentation*) or an informal one (*e.g., casual conversation*). Registers, such as legal English or medical jargon, also exemplify situational variation (Al-Tarawneh et al., 2024).

Factors Influencing Variation

Several key factors influence language variation:

- **Geography**: Regional differences arise due to historical migration, isolation, and interaction. For example, British and American English evolved differently after the colonial period.
- **Social Class**: Linguistic forms often correlate with socioeconomic status, as Labov's classic study in New York City demonstrated (Gómez, 2021).
- **Ethnicity**: Ethnic identity shapes linguistic practices, as seen in African American Vernacular English (AAVE) or Multicultural London English (MLE) (Martínez, 2021).
- **Gender**: Gender-based variation is evident in language use patterns, with studies showing women often lead linguistic innovations (Ashrafova, 2024).
- **Age**: Younger speakers tend to adopt new linguistic forms, contributing to language change over time (Mufwene & Escobar, 2022).

Table 8.1. Types of Language Variation and Their Features

Type of Variation	Example	Influencing Factor
Regional	*Colour* (UK) vs *Color* (US)	Geography
Social	*Ain't* (non-standard) vs *isn't* (standard)	Social class
Situational	Formal speech vs informal chat	Context

Source: Ordóñez (2021)

Understanding these patterns of variation is foundational to sociolinguistics, offering
insights into how language reflects and constructs social reality.

LANGUAGE CHANGE: MECHANISMS AND CAUSES

While variation represents the synchronic diversity of language, language change captures its diachronic evolution. Language change is a universal, inevitable process affecting all languages across time (Culicover, 2021). Contrary to popular belief, change is not degradation but adaptation, enabling languages to remain functional and relevant.

Types of Language Change

Language change manifests in several forms:

- Phonological change involves shifts in pronunciation, such as the Great Vowel Shift in English (15th–18th century), which dramatically altered English vowels (Stepanivna et al., 2023).
- Morphological change affects word structures. For example, English has lost many inflectional endings over time (*thou art → you are*)(Sammour et al., 2023) .

- Syntactic change modifies sentence structures, such as the rise of *do*-support in English questions (*Do you know?*) (Gotthard, 2024).
- Semantic change alters word meanings, as with *silly* (once meaning *'happy'* but now '*foolish*').
- Lexical change introduces new words, often through borrowing or compounding (*internet*, *selfie*)

Causes of Language Change

Several factors drive language change:

- Contact with other languages: Borrowing occurs when languages interact, as English has borrowed from Latin, French, and more recently, from global sources (Nuri, 2024). Code-switching in bilingual communities can also lead to structural change.
- Social change: Urbanization, migration, and shifts in social norms prompt language innovation. The rise of youth slang often reflects generational shifts (Mufwene & Escobar, 2022).
- Technological and cultural innovation: New inventions and cultural phenomena require new terms (*hashtag*, *blockchain*).
- Internal linguistic pressures: Changes can result from tendencies toward simplification or regularization (e.g., *helped* replacing *help* as past tense).

SOCIOLINGUISTIC THEORIES AND MODELS

Labov's Variationist Sociolinguistics

William Labov's pioneering work established variationist sociolinguistics, which examines the systematic correlation between linguistic forms and social variables. His New York City department store study Gómez (2021) demonstrated that

the pronunciation of postvocalic *r* varied according to store prestige and thus social class. Labov's quantitative methods confirmed that language variation is rule-governed rather than random (Brook & Blamire, 2023).

Trudgill's Dialectology

Peter Trudgill expanded sociolinguistic inquiry by focusing on dialect contact and social factors in language change. His work in Norwich, England, revealed that non-standard grammatical forms correlated with working-class identity and male gender (Trudgill, 2000). Trudgill also introduced the concept of dialect levelling, wherein dialect differences diminish due to increased mobility and communication (Bülow et al., 2021).

Milroy's Social Networks Theory

James and Lesley Milroy proposed the social networks theory, emphasizing the role of interpersonal ties in language maintenance and change. Their Belfast study showed that dense and multiplex networks help preserve non-standard forms, while weak ties facilitate linguistic innovation (Terry, 2022), updated by Svendsen & Jonsson (2022). This theory shifts the focus from macro-social categories (class, gender) to micro-level social structures.

Speech Community and Social Network Concepts

The concept of the speech community underpins sociolinguistic analysis, referring to a group of people who share norms for language use. Social network theory refines this by analyzing how individuals' connections (strong vs. weak ties) influence their linguistic behavior (Svendsen & Jonsson, 2022).

Standard vs. Non-Standard Varieties

Sociolinguists challenge the notion of a single, correct "standard" language. Standard varieties are often institutionally endorsed (e.g., Standard British English), but non-standard varieties (e.g., AAVE, regional dialects) are equally systematic and expressive. The privileging of standard forms is thus a socio-political issue rather than a linguistic necessity (Blommaert, 2022). Understanding this distinction is critical in education and language policy, especially in multilingual societies.

CASE STUDIES: LANGUAGE VARIATION AND CHANGE IN ENGLISH

The richness of English today is perhaps best exemplified through its remarkable internal diversity. As a language spoken natively and as a second language by millions across continents, English showcases an array of regional, social, and contextual varieties. These varieties not only reflect historical developments but also illuminate the ongoing processes of language variation and change. This section examines selected case studies from British English, American English, the global spread of World Englishes, and the transformative impact of digital communication on contemporary English.

Variation in British English

British English has long been characterized by deep regional and social variation. One of the most well-documented contrasts is between Received Pronunciation (RP), traditionally associated with the educated elite and the media, and Cockney, the working-class dialect of East London. RP, sometimes referred to as "BBC English," has historically been regarded as the standard model for British English pronunciation (McKenzie & McNeill, 2022). In contrast, Cockney is marked by distinct

phonological features such as *th-fronting* (pronouncing "*th*" as "*f*," e.g., *think* → *fink*) and *h-dropping* (*house* → *'ouse*) (Thomas, 2024).

More recently, sociolinguistic studies have documented the spread of Multicultural London English (MLE), an emergent variety influenced by the city's diverse ethnic communities. MLE features lexical borrowings from Caribbean, South Asian, and African languages, as well as innovative grammatical patterns, and is particularly prevalent among young speakers (Martínez, 2021). This development underscores how urban centers function as hotspots of linguistic innovation, driven by contact and identity negotiation.

Variation in American English

Across the Atlantic, American English similarly exhibits considerable variation. A prominent example is the contrast between Southern US English and General American English. Southern varieties are known for features such as the *monophthongization* of the diphthong in words like *ride* (pronounced *rahd*), as well as distinctive syntactic constructions like *y'all* as a plural second-person pronoun (Weldon, 2022). General American, by contrast, is often perceived as "accent-less" and serves as a broadcast standard, though this perception obscures its own historical and regional roots (Stanley et al., 2024).

Recent studies indicate that regional dialect boundaries in the US are both shifting and intensifying, partly due to social mobility and demographic change. For instance, while the traditional Southern Shift continues in rural areas, urban centers like Atlanta show a blending of features due to in-migration and cultural mixing (Fridland, 2023).

Emergence of World Englishes

Beyond the traditional Anglophone core, the globalization of English has given rise to distinct World Englishes. Varieties such as Singaporean English (Singlish) and Nigerian English exemplify how local linguistic ecologies shape new English forms. In Singapore, English functions alongside Malay, Tamil, and Mandarin, resulting in a contact-induced variety marked by unique syntactic patterns (e.g., topic prominence: *This one I don't like*) and lexical borrowings (*lah*, *kiasu*) (Leimgruber et al., 2021).

Similarly, Nigerian English reflects the multilingual realities of Nigeria, incorporating vocabulary from Hausa, Yoruba, and Igbo, and exhibiting localized phonological features (Gut, 2021). These varieties challenge monolithic notions of "standard" English, advocating for a pluralistic view that recognizes Englishes as situated within diverse sociocultural contexts (Illés & Bayyurt, 2005).

The Role of Digital Communication

In the 21st century, digital communication has emerged as a powerful driver of linguistic change. Platforms such as WhatsApp, Twitter, and TikTok foster rapid dissemination of new forms, leading to what Androutsopoulos (2024) terms "mediated linguistic innovation." For instance**,** internet slang **(***LOL*, *BRB*, *on fleek*, *sus*) transcends national borders, contributing to a global youth register.

Moreover, digital media amplifies stylistic variation through multimodal communication, blending text with emojis, GIFs, and memes. This has given rise to what Dooly & Darvin, (2022) call *WhatsApp English*, characterized by features like ellipsis, initialisms, and expressive punctuation (e.g., *sooo happy!!!*). Importantly, digital communication normalizes informal and

non-standard usage, subtly shifting norms even in formal contexts.

Collectively, these case studies illustrate that language variation and change in English are dynamic processes shaped by historical, social, and technological forces.

Table 8.2. Examples of Lexical Variation Across English Varieties

Word (Meaning)	UK English	US English	Australian English	Singapore English
Truck	Lorry	Truck	Truck	Lorry
Flip-flops (sandals)	Thongs	Flip-flops	Thongs	Slippers
Candy	Sweets	Candy	Lollies	Sweets
Elevator	Lift	Elevator	Lift	Lift
Traffic circle (junction)	Roundabout	Traffic circle	Roundabout	Roundabout

Source: Rose et al., (2021)

This lexical diversity highlights how English adapts to local cultures while retaining its global character. For language learners and users, awareness of such variation is crucial for effective communication across different English-speaking communities.

IMPLICATIONS FOR ENGLISH LANGUAGE TEACHING (ELT)

The global diversity of English and its dynamic nature pose both challenges and opportunities for English Language Teaching (ELT). Traditional ELT models often privilege a single standard, such as British RP or American General

English. However, the realities of global English usage call for a pedagogical shift toward recognizing and valuing variation (Rose et al., 2021).

Teaching Language Variation as Intercultural Competence

First, incorporating language variation into ELT curricula enhances learners' intercultural competence. By exposing students to different English varieties—whether Cockney rhymes, Southern US idioms, or Singaporean particles, teachers can prepare learners to navigate diverse communicative contexts (Schönefeld et al., 2024). This approach aligns with the principles of English as an International Language (EIL), which emphasizes adaptability and pluralism over conformity to a single norm.

Preparing Learners for Multiple Englishes

Given the prominence of World Englishes, learners must be equipped to understand and interact with speakers from different English-speaking backgrounds. This entails developing listening comprehension across accents and registers, as well as fostering an openness to variation. Seidlhofer (2005) argues for "pluricentric competence",the ability to recognize multiple norms and adjust one's language use accordingly.

Encouraging Acceptance of Linguistic Diversity

A sociolinguistically informed ELT practice also promotes tolerance and acceptance of linguistic diversity. By teaching that variation is natural and meaningful rather than erroneous, educators can combat linguistic prejudice and empower learners to embrace their own linguistic identities. For instance, recognizing the legitimacy of Nigerian English or Indian English counters the marginalization of non-native varieties (Awal, 2023).

Integrating Sociolinguistic Awareness

Finally, integrating sociolinguistic awareness into ELT enhances learners' critical language awareness. Lessons can include activities where students analyze language use in media, compare different English dialects, or investigate how digital communication shapes new forms. Such pedagogical practices not only develop linguistic skills but also foster critical thinking and cultural literacy (Dooly & Darvin, 2022).

CONCLUSION

This chapter has explored the dynamic nature of language through the lens of sociolinguistics, emphasizing that language is inherently variable and constantly evolving**.** Across the discussion, we have seen that variation is not random but is systematically shaped by social, regional, and situational factors. Whether considering dialectal differences between Cockney and Received Pronunciation in Britain, the distinct features of Southern and General American English, or the global spread of World Englishes such as Singaporean and Nigerian varieties, the underlying patterns reflect the profound influence of sociolinguistic variables — including region, social class, ethnicity, gender, and age**.**

Furthermore, the mechanisms of language change, phonological, morphological, syntactic, semantic, and lexical, have been shown to stem from both internal linguistic pressures and external forces such as social mobility, technological innovation, and language contact. This understanding helps explain the rich diversity found within English today, as well as its continuous transformation in response to global and digital developments. The role of digital communication, in particular, has emerged as a powerful accelerator of change, fostering new forms and registers that blur the boundaries between standard and non-standard usage.

As a final reflection, this chapter encourages both students and teachers to move beyond prescriptive notions that frame language change as deterioration or decay. Instead, change should be understood as an essential and natural process, a sign of language vitality and adaptability. By embracing variation and change, educators can better prepare learners for the realities of global communication, where multiple Englishes coexist and thrive. Moreover, cultivating sociolinguistic awareness in English language teaching not only enhances intercultural competence but also promotes a more inclusive and tolerant approach to linguistic diversity. In doing so, we not only acknowledge the past and present dynamics of English but also actively participate in shaping its future.

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AUTHOR'S PROFILE

Abd. Hakim Muslim completed his secondary education at MAN 2 Jombang in 1991 before earning a Bachelor's degree in English Education from IKIP PGRI Malang in 2000. He pursued his Master's in English Education at Malang State University and later obtained a Doctorate in Educational Technology from the same institution in 2024. Currently, he serves as a civil servant at MAN 5 Jombang while also managing a non-formal English language institution, Living English Course, in Ngoro, Jombang, where he remains actively involved in education.

CHAPTER 9
LANGUAGE AND THE BRAIN – AN INTRODUCTION TO PSYCHOLINGUISTICS

Mutia Nasution
Politeknik Negeri Sriwijaya, Palembang
E-mail: mutianasution@polsri.ac.id

INTRODUCTION

Ever pondered how your brain effortlessly turns thoughts into words or helps you understand language so easily? These seemingly simple acts are actually driven by complex brain processes, which are the core focus of psycholinguistics. This interdisciplinary field combines linguistics, psychology, neuroscience, and computer science to investigate how we produce and understand language in real time (Pliatsikas, 2023) Using advanced neuroimaging tools like fMRI and EEG, researchers can now observe the brain as it handles elements such as phonology, syntax, semantics, and pragmatics. A local study by Yuliasari, Hidayah, and Mahliatussikah (Hidayah et al., 2024) specifically explored language acquisition in Indonesian children, confirming that environmental and cognitive factors significantly influence how the brain organizes and expresses language.

Bilingualism adds another fascinating dimension to this field, highlighting the brain's remarkable adaptability in managing multiple language systems. Research indicates that bilingual individuals often exhibit enhanced attention and cognitive control when switching between languages. As psycholinguistics progresses, it continues to integrate behavioral data with neurobiological tools like ERP (e.4., N400, P600) and functional near-infrared spectroscopy (fNIRS). These methods

are particularly valuable for studying language development in populations such as children and the elderly (Pliatsikas, 2023). Ultimately, these combined approaches enable us to build more comprehensive models of how language functions in the brain, reminding us that even our daily conversations are powered by truly remarkable cognitive systems.

INTRODUCTION TO PSYCHOLINGUISTICS

Psycholinguistics explores how people acquire, process, and produce language, with a strong focus on the brain's involvement in these actions. This field combines behavioral methods like eye-tracking and reaction time with neuroimaging techniques such as EEG, fNIRS, and fMRI. These tools allow researchers to see how the brain stores words, processes grammar, and builds meaning (Pliatsikas, 2023), observing language processing in real time and across different ages.

Bilingualism provides key insights into how the brain adapts to handling multiple languages. Research indicates that bilingual individuals often show improved attention control and greater brain activity in areas related to executive functions. Locally in Indonesia, Yuliasari, Hidayah, and Mahliatussikah (Hidayah et al., 2024) emphasize that early exposure to multiple languages helps develop unique cognitive and linguistic pathways, particularly during childhood.

Today, psycholinguistics isn't just confined to labs; it's being applied in fields like translation, education, and language therapy. By integrating behavioral data with neuroimaging, studies are becoming more relevant to real-world language use. This ongoing combination of methods enhances our understanding of the dynamic interaction between language and the brain in various settings.

LANGUAGE ACQUISITION

Language acquisition is a continuous and evolving journey where children gradually develop their first or additional languages through constant interaction and cognitive growth. Yuliasari, Hidayah, and Mahliatussikah (Hidayah et al., 2024) illustrate this progression, starting with early vocalizations like cooing and babbling and advancing to the use of more complex sentence structures. This developmental path is significantly shaped by the child's environment, their cognitive readiness, and the broader linguistic and cultural context they grow up in. Essentially, a child's unique surroundings play a crucial role in how their language skills unfold.

In multilingual environments, it's quite common for children to initially mix elements from the different languages they are exposed to. For example, Hafizah and 'Ala (Hafizah & A'la, 2022) observed that children learning both Minangkabau and Malaysian Malay often blended the two languages in their early speech. However, as they matured, these children learned to separate the languages effectively, depending on who they were speaking to and the specific social context. These findings not only show how bilingual exposure influences linguistic ability but also highlight how it sharpens children's awareness of communicative context and their audience, demonstrating a remarkable cognitive flexibility.Collectively, these studies emphasize that language acquisition is shaped not only by biological factors but also by significant social and environmental conditions. The insights from recent Indonesian research are particularly valuable for parents, teachers, and policymakers. They can use this knowledge to design more effective language learning strategies that are tailored to children's specific developmental needs, ultimately fostering robust linguistic growth.

SPEECH PRODUCTION AND PERCEPTION

Speech production and perception stand as the core, intricately linked components of psycholinguistics, absolutely vital for effective human communication. These complex processes involve not only the physical act of producing intelligible speech sounds but also the mental work of accurately interpreting what is heard. Both require an extraordinary, complex coordination among our cognitive, sensory, and motor systems. Every time we engage in spoken interaction, our brain simultaneously executes a remarkable and integrated series of tasks, demonstrating its profound capacity for linguistic processing.

Johan and Suri (Johan, 2019) conducted an in-depth study focusing on how speech develops and the disorders that can arise in children under the age of three. They discovered that during this crucial early developmental stage, children begin to form basic phonemes and morphemes, which serve as the fundamental building blocks of their language system. However, due to their still-developing vocal motor skills, articulation is often limited, resulting in unclear speech production even when their language comprehension is already present. This highlights a significant yet normal gap between a child's understanding of spoken words and their ability to precisely vocalize them.

One of the most compelling insights from Johan and Suri's study is the noticeable gap between a child's speech perception and their production capabilities. Children are frequently able to perceive a much wider range of phonemes than they can actively reproduce or articulate themselves. For instance, although a child might accurately recognize the /r/ sound, they may still pronounce it as a /w/, indicating that motor constraints the physical limitations in controlling their vocal organs rather than perceptual hearing limitations, are the primary challenge during early language development. This phenomenon clearly

illustrates how a child's auditory comprehension often significantly outpaces their nascent abilities in speech articulation.

Speech perception maintains its equally critical role in later stages of life, even as sensory abilities may begin to decline. Mabasan (Eni Nurhayati, 2024) explored how older adults experiencing presbycusis age-related hearing loss process spoken language. Despite suffering from partial hearing impairment, many elderly individuals can still accurately distinguish key phonemes, showcasing the remarkable resilience of their perceptual mechanisms and providing strong support for models like the motor theory of speech perception. This truly underscores the brain's incredible capacity for adaptation, allowing it to compensate for sensory challenges by leveraging experience and context.

Overall, both speech production and perception are the intricate result of complex interactions among various factors, including the physiological development of speech organs, the cognitive readiness of the brain to process linguistic structures, and the auditory system's capacity to interpret sound input. A comprehensive understanding of these multidimensional aspects is absolutely essential not only for supporting optimal language acquisition in children during their formative years but also for assisting older individuals in maintaining their communicative abilities and helping second-language learners successfully master new sound systems. Ongoing research in this field continues to unlock invaluable insights into how language and the brain dynamically interact in every facet of our lives.

NEUROLINGUISTICS

Neurolinguistics is a specialized scientific discipline that explores the intricate connections between brain function and language abilities in humans. This field encompasses the study

of how neurological conditions influence language, especially in children with special needs (Darmawati & Nuryani, 2020) for instance, examined the pragmatic language development of children with Attention-Deficit/Hyperactivity Disorder (ADHD) through a neurolinguistic lens. Their findings revealed that while the core language regions of the brain remain structurally intact, deficits in attention regulation significantly hinder conversational abilities, often leading to impulsive speech and conversation dominance. This suggests that general cognitive processes can substantially influence linguistic expression and social interaction.

Language perception in early childhood has also become a focal point in neurolinguistic research, providing insights into how young children begin to process linguistic stimuli. In a qualitative case study, Hikmaharyanti (Hikmaharyanti et al., 2022) observed toddlers aged 3 to 5, highlighting the pivotal role of consistent parental engagement in vocabulary development and language comprehension. Their study affirmed that frequent and rich verbal interactions during early developmental stages are vital in forming the neural foundations essential for effective language acquisition.

Technological advances have further expanded the application of neurolinguistics in educational settings. One promising approach involves the use of digital storybooks to support listening comprehension in elementary students. Quasi-experimental research has shown that this method not only boosts students' performance in listening tasks but also stimulates activity in key brain regions associated with language, including the auditory and visual cortices, Broca’s area, and Wernicke’s area. These findings demonstrate how innovative teaching tools can directly reinforce neural mechanisms involved in language understanding.

Research on aphasia among deaf children has yielded crucial neurolinguistic insights into how auditory limitations affect speech development. Patterns such as phoneme deletion, insertion, and substitution were frequently observed, suggesting a strong link between auditory nerve function and speech production abilities. These results highlight the pressing need for early and targeted neurolinguistic interventions to support optimal language development in this population.

Taken together, these various studies underscore the wide-ranging contributions of neurolinguistics in elucidating how brain function underpins language across different populations and contexts. From ADHD-related language challenges and early language acquisition in toddlers, to auditory comprehension improvements through digital innovation and speech disorders in deaf children, local research provides a rich and layered understanding of the brain-language relationship. These insights affirm that language is fundamentally grounded in the brain's complex neural architecture.

BILINGUALISM AND THE BRAIN

Bilingualism, the ability to use two languages fluently, is known to enhance not just linguistic skills but also higher-order cognitive functions. According to research in the *Sulawesi Tenggara Educational Journal* (Journal, 2025), graduates of bilingual education programs reported significant gains in executive functions such as shifting attention, suppressing distractions, and maintaining focus. These skills are closely linked to the frequent mental exercise involved in navigating between two languages. The constant use of both languages strengthens mental agility in managing competing inputs. This ongoing cognitive engagement allows bilinguals to perform more efficiently in tasks that require control and flexibility.

In addition to cognitive flexibility, bilingualism is also supported by social and cultural factors that influence neurological development. Nurjannah (2025) (Cox, 2017) emphasized that the environment in which a bilingual child is raised plays a vital role in the formation of dual-language processing systems. Their review highlights how early and consistent exposure to two languages fosters long-lasting changes in the brain's language networks. These changes contribute to more adaptive learning strategies and enhanced language awareness. Therefore, the benefits of bilingualism are not only neurological but also deeply embedded in the learner's social context.

The brain undergoes structural and functional changes in response to bilingualism, particularly in areas involved in language and cognition. Previous studies have shown that bilinguals tend to have denser gray matter in the inferior parietal lobes and stronger white-matter pathways in the corpus callosum, which facilitates interhemispheric communication. These adaptations help the brain process information more efficiently, especially during language-switching tasks. As a result, bilingual individuals exhibit improved neural coordination and speed in processing complex stimuli. These findings provide compelling evidence of the brain's plasticity in accommodating linguistic demands.

In the educational setting, the use of bilingual instruction can stimulate key areas of the brain responsible for language and cognition. Alvianto (Alvianto, 2020) found that regular bilingual exposure in classrooms activates the Broca and Wernicke areas, as well as the associative cortex, which is essential for integrating complex information. This activation supports students' comprehension, memory, and attention during learning. Integrating both languages in classroom activities also helps learners develop cross-linguistic strategies for

understanding new content. This makes bilingual education a valuable approach not only for language acquisition but also for overall academic development.

Taken together, these findings affirm that bilingualism contributes to more than just the ability to speak two languages—it reshapes the brain in ways that strengthen executive control and cognitive flexibility. The structural and functional changes observed in bilingual individuals demonstrate the depth of the brain's response to linguistic diversity. Over time, these changes lead to advantages in attention, memory, and learning efficiency. Bilingual individuals may also enjoy improved resilience in cognitive aging and a delayed onset of neurodegenerative symptoms. Encouraging bilingual development from an early age can thus be a powerful strategy to support both linguistic and cognitive health.

PSYCHOLINGUISTIC MODELS

Contemporary psycholinguistics presents a wide range of conceptual models that explain how the brain processes, comprehends, and produces language. These models draw from cognitive psychology and natural language processing to analyze linguistic functions in both structured and spontaneous contexts. A notable study by Siregar, Telaumbanua, and Sari (Goretti et al., 2024) outlines stages of first language development in early childhood, emphasizing how environmental input and neural readiness interact. The study outlines how language acquisition progresses through pre-verbal stages, one-word speech, two-word combinations, and complex sentence formation. These findings affirm that language is acquired through a combination of maturation and exposure, not solely through memorization.

Siregar et al. (Goretti et al., 2024) further describe the milestones of phonological and syntactic growth in early

learners as reflections of increasing cognitive sophistication. They report that infants initially produce non-verbal vocalizations, then move to meaningful single words around age one, followed by combining words into simple phrases. Social interaction and rich linguistic environments significantly influence this progression. These observations support Piagetian perspectives on parallel development between cognition and language. Thus, caregivers and educators play a pivotal role in nurturing early communication skills.

Another essential component in psycholinguistic theory involves the use of internal mental models to produce and interpret language. These representations allow speakers to structure thoughts into linguistic forms while enabling listeners to decode meaning through cognitive mapping. This dynamic exchange ensures that spoken language maintains clarity and purpose in communication. Language, therefore, operates as a two-way cognitive system where comprehension and expression are tightly interlinked. The process demonstrates that linguistic competence extends beyond vocabulary—it involves complex mental processing.

Major psycholinguistic theories argue that language learning is rooted in the coordination between biological predisposition, experiential input, and mental processes. Siregar et al. (Goretti et al., 2024) emphasize the role of neural growth and continuous exposure in shaping early language use. Behaviorist theories explain language learning through repetition and reward systems, while nativist theories propose the presence of innate language faculties. In contrast, interactionist models see language acquisition as an ongoing feedback process that adjusts to context and meaning. Understanding these frameworks helps refine how language teaching and diagnosis are approached.

Psycholinguistic research offers valuable implications for early education by supporting tailored, responsive language instruction. As illustrated by (Salamah et al., 2024), language development in young children can be effectively supported through structured yet engaging environments, such as those found in quality preschools. These settings promote syntactic and pragmatic skills that align with children's cognitive readiness. By applying psycholinguistic principles, educators can create more inclusive and developmentally appropriate learning experiences. This also has potential benefits for interventions in children with speech or developmental delays.

CONCLUSION

The study of psycholinguistics provides a comprehensive and multifaceted understanding of how language is acquired, processed, and represented within the human brain, encompassing foundational areas such as speech perception and production, the intricate process of language acquisition, the neural underpinnings of language (neurolinguistics), the fascinating dynamics of bilingualism, and the various theoretical models explaining these phenomena. Each of these interconnected subfields collectively contributes to a holistic view of language as a complex interplay of cognitive and social factors. Recent research conducted in Indonesia has significantly enriched this global discourse by offering contextually grounded studies, often readily accessible through open-access journals, thereby highlighting the unique relevance of local linguistic dynamics and their profound pedagogical implications. Collectively, these insights not only deepen academic comprehension but also serve as vital foundations for practical applications in language education, therapeutic interventions, and broader cognitive development, particularly within Indonesia's rich and diverse multilingual landscape.

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AUTHOR'S PROFILE

Mutia Nasution

The author has the name Mutia Nasution, S.Pd., M.Hum. She currently teaches at a state university in Palembang, South Sumatra.

In between teaching activities, the author is still actively writing books and works of fiction for the North Sumatra and Riau newspapers. This has been the author's occupation since he was educated at the Bachelor level precisely in 2014 ago. The author's works such as short stories, poems, articles and tourism articles have been published in newspapers such as Waspada daily, Analisa, Medan Bisnis, Medan Pos and Riau Pos. Until now the author has 6 solo books, namely Ragam Gaya Belajar Pada Siswa (2023), Travelling Tanpa Pusing (2023) and Catatan Camilan Dilan (2023), Makan-makan di Sawah (2023), Langit-langit Rindu as a poetry anthology book (2019), Apron Buat Avon as a short story anthology book (2017) and 4 Book Chapter with the title Dasar-dasar Pendidikan (2022) and Psikologi Pendidikan (2024), A Handbook of Critical Reading Comprehension (2025) and Kompas Pendidikan 5.0 (2025). In 2020 the author became a representative of North Sumatra Women Writers on the agenda of the National Conference of Indonesian Writers III in Jakarta by the Ministry of Education and Culture's Language Development Agency. In 2022, she participated in the Narrative Journalism Tour by the Pantau Foundation, Jakarta in the city of Pekanbaru and in 2023 she participated in the Technical Guidance for Translating Children's Stories by the North Sumatra Language Centre in Berastagi, North Sumatra. The author can be contacted at mutianasution@polsri.ac.id.

CHAPTER 10
ANALYZING REAL LANGUAGE: DISCOURSE AND CONVERSATION ANALYSIS

Akhmad Hairul Umam
Tanri Abeng Unimversity, Jakarta
E-mail: ahmad.umam@tau.ac.id

INTRODUCTION

Language is not just a system of grammar and vocabulary but a dynamic social practice embedded within specific cultural, institutional, and interpersonal contexts (Gee, 2014; Hymes, 1974). Communication involves more than conveying information; it is a form of social action through which people create relationships, construct identities, and negotiate meaning (Fairclough, 2013). As such, studying language in real-life use offers valuable insights into the mechanics and implications of human interaction.

Discourse analysis (DA) and conversation analysis (CA) are two distinct but complementary approaches for analyzing language as social practice. While DA is broadly concerned with the way language constructs meaning in social contexts (Schiffrin, D., Tannen, D., & Hamilton, 2021), CA investigates the detailed organization of talk-in-interaction. Both perspectives move beyond structuralist views of language to understand how meaning is constructed in use.

DA emphasizes that language is never neutral. It often reflects and reproduces social hierarchies and ideologies, whether in media texts, classroom discourse, or casual conversations (Fairclough, 1992). Through close examination of texts and interactions, DA helps reveal the implicit assumptions, values, and power relations embedded in discourse (Gee, 2014).

CA, rooted in ethnomethodology, assumes that conversational practices are orderly and systematically organized by participants themselves (Sacks, Schegloff, & Jefferson, 1974). It seeks to uncover the interactional machinery of everyday talk—such as how people take turns, repair misunderstandings, and build sequences of actions. CA is rigorous in its methodology and relies on naturalistic data that is meticulously transcribed to capture not only what is said, but how it is said (Jefferson, 2004).

Together, DA and CA allow researchers to understand not only what is communicated but how communication functions to maintain or challenge social structures. These tools are increasingly used across disciplines such as linguistics, sociology, anthropology, education, media studies, and health communication. This paper explores the theoretical foundations of both approaches, provides empirical examples, and discusses their relevance in contemporary research contexts.

THEORETICAL BACKGROUND

Discourse Analysis

Discourse Analysis (DA) refers to the study of language beyond the sentence level, examining how language use relates to social and cultural contexts. It is fundamentally interdisciplinary, intersecting with fields such as applied linguistics, sociology, anthropology, communication studies, and critical theory. Discourse analysts are interested in how texts and talks perform social functions, construct knowledge, and produce social identities (Gee, 2014).

One of the most influential strands of DA is Critical Discourse Analysis (CDA), developed by scholars such as Norman Fairclough and Teun van Dijk. CDA posits that language is a form of social practice and focuses on how

discursive practices contribute to the maintenance of power and inequality (Fairclough, 1992; van Dijk, 1998). For instance, CDA has been used to analyze political speeches, news reports, and classroom interactions, uncovering how particular linguistic choices reflect and reproduce dominant ideologies.

Foucauldian discourse analysis, inspired by the work of Michel Foucault, extends this perspective by exploring how discourse produces regimes of truth and shapes the subjectivities of individuals. According to Foucault (1972), discourses are not merely representations of reality but are involved in the construction of that reality. This approach is particularly relevant in studies of institutional discourse, such as those concerning health, law, or education.

Another valuable contribution to DA is the socio-cognitive approach by van Dijk (2006), which integrates social and psychological dimensions by focusing on how shared mental models, or 'mental representations', inform and are informed by discourse. This framework emphasizes the role of cognition in mediating between social structures and discourse production.

DA also pays attention to intertextuality, framing, narrative structure, and the use of rhetorical devices. It examines how speakers draw on existing discourses and how these influence their credibility, authority, and the reception of their messages. In this regard, discourse is seen not only as a linguistic phenomenon but also as a socio-cultural activity embedded in power relations.

Conversation Analysis

Conversation Analysis (CA) emerged from the work of Harvey Sacks, Emanuel Schegloff, and Gail Jefferson in the 1960s and 1970s. It is grounded in ethnomethodology, which investigates the methods people use to make sense of and organize their social world (Garfinkel, 1967). CA focuses on the

sequential organization of interaction, studying how talk is structured and how participants understand and respond to one another in real time.

A central concern of CA is turn-taking, a fundamental mechanism in conversation. Sacks et al. (1974) identified systematic rules that govern when and how participants take turns speaking. CA also investigates adjacency pairs (e.g., question-answer, greeting-greeting), which are basic units of conversational organization. These pairs show how certain utterances make particular responses relevant, enabling coherent interaction.

Repair is another key area of CA. This refers to how speakers deal with problems in speaking, hearing, or understanding. Schegloff, Jefferson, and Sacks (1977) showed that repair mechanisms are locally managed and are integral to maintaining mutual understanding in interaction.

CA uses detailed transcriptions, known as Jeffersonian transcription, to represent the timing, pitch, overlap, and pauses in talk (Jefferson, 2004). These features are crucial for understanding how participants manage turn-taking, display alignment or disalignment, and negotiate social actions.

Unlike DA, CA resists speculative interpretation and insists on grounding analysis in the data. It emphasizes the accountability of participants and the observability of interactional practices. CA has been applied extensively to institutional contexts such as medical consultations, courtroom exchanges, counseling sessions, and classroom interactions. In each case, CA helps reveal how institutional roles and expectations are enacted and challenged through talk.

In short, both DA and CA offer valuable perspectives on language in use. While DA illuminates the broader social and ideological context of discourse, CA uncovers the micro-level structures that enable and constrain interaction. Used together,

these approaches provide a rich and nuanced understanding of communication in real-world settings.

LITERATURE REVIEW

A growing body of literature supports the integration of Discourse Analysis (DA) and Conversation Analysis (CA) in language and communication research, reflecting the interdisciplinary nature and applicability of these frameworks across various communicative contexts. At its core, DA focuses on the use of language beyond the sentence level, emphasizing how meaning is constructed, negotiated, and interpreted in specific social contexts. CA, on the other hand, stems from ethnomethodology and is primarily concerned with the sequential organization of talk-in-interaction, particularly turn-taking, repair mechanisms, and conversational openings and closings. Together, DA and CA provide complementary insights into the structure and function of language in use.

Deborah Schiffrin's seminal work Approaches to Discourse (1994) laid the foundational framework for DA by introducing various approaches such as speech act theory, interactional sociolinguistics, and pragmatics. Schiffrin emphasized that discourse serves as a bridge between linguistic form and social meaning, highlighting how different analytic traditions contribute to a richer understanding of spoken and written texts. Her work remains central to discourse studies, offering tools to analyze how language functions in context and how power, identity, and ideology are embedded in everyday communication.

The expansion of CA into broader domains such as political and media discourse has been significantly shaped by the work of Heritage and Clayman (2002), whose book Talk in Action underscores the analytical value of CA in institutional settings. By examining broadcast interviews, press conferences, and

political speeches, they demonstrate how conversational structures reveal the strategic management of accountability, face-saving, and persuasion. Their analysis affirms that even highly scripted environments retain elements of spontaneity and interactional negotiation, which are best captured through CA methodologies.

In educational contexts, Seedhouse (2004) contributed a pivotal study on the application of CA in second language classrooms. He identified how pedagogic goals influence the interactional architecture of language learning environments, particularly in the organization of turn-taking, teacher feedback, and learner uptake. Seedhouse's work highlights that the micro-analytic tools of CA can illuminate patterns of classroom interaction that are often overlooked in traditional observational research. This has opened pathways for research in language acquisition, curriculum design, and teacher-student communication.

Wetherell, Taylor, and Yates (2001) provide a more inclusive perspective by compiling a range of discourse analytic approaches in their edited volume Discourse as Data: A Guide for Analysis. Their contribution emphasizes methodological diversity, including Foucauldian Discourse Analysis, Discursive Psychology, and Critical Discourse Analysis (CDA). By foregrounding the theoretical and epistemological underpinnings of each method, they argue for a pluralistic approach to discourse research that acknowledges the sociopolitical dimensions of language use. Their work is particularly influential in social psychology, media studies, and feminist linguistics.

With the proliferation of digital communication, discourse analysis has had to evolve to accommodate new modes of interaction. Susan Herring's (2004) introduction of Computer-Mediated Discourse Analysis (CMDA) represents a significant

development in this area. CMDA provides a framework for analyzing online communication, including emails, discussion forums, chat messages, and social media interactions. Herring proposes four levels of analysis—structure, meaning, interaction, and social practice—enabling researchers to capture the unique linguistic features of digital discourse, such as multimodality, hyperlinking, and asynchronous turn-taking. Given the ubiquity of digital platforms in contemporary communication, CMDA is increasingly relevant for understanding online identity, virtual communities, and digital literacy.

Further studies have extended the application of DA and CA to interdisciplinary research areas such as health communication, organizational discourse, and legal talk. For instance, Roberts and Sarangi (2005) examine how institutional roles and power relations are enacted through language in medical consultations. Their findings reveal that seemingly neutral exchanges often mask underlying asymmetries in knowledge and authority, which have implications for patient participation and informed consent. Similarly, Drew and Heritage (1992) have explored courtroom interactions and emergency service calls, demonstrating how interactional norms are shaped by institutional constraints and goals.

In summary, the literature demonstrates that both DA and CA have evolved from their foundational roots to become robust analytical tools capable of addressing a wide range of contemporary communication challenges. They offer rich theoretical and methodological resources for analyzing language in context, whether in face-to-face conversations, classroom settings, political discourse, or digital communication. The integration of these approaches is not only beneficial but necessary in capturing the complexity of modern linguistic interaction. As communication increasingly transcends

traditional boundaries—across cultures, technologies, and institutions—the continued development of discourse-analytic methodologies will be essential for both academic inquiry and practical application.

DATA SAMPLE

The following excerpt was collected from a naturally occurring interaction between two undergraduate students in a university cafeteria. The conversation was chosen due to its typical representation of casual talk among peers, and for the variety of conversational phenomena it exhibits, including turn-taking, repair, humor, and identity negotiation. The participants have a familiar relationship, which is evident in their use of informal language, teasing, and shared context.

(1) A : So, did you go to the lecture this morning?
(2) B : Uh, no, I overslept. Again.
(3) A : (laughs) You really need an alarm that kicks you out of bed.
(4) B : Tell me about it. My phone died overnight.
(5) A : Excuses, excuses...
(6) B : (smiling) No seriously, I set like three alarms.
(7) A : Then your bed must be made of glue!
(8) B : Or maybe I'm just not a morning person.
(9) A : Lucky for you the lecturer posts the slides.

ANALYSIS

1. Conversation Analysis

Turn-taking and Adjacency Pairs: The conversation follows a turn-taking structure typical of casual dialogue. In line (1), speaker A initiates an adjacency pair with a yes/no question. B's response in (2) completes the pair but includes additional information and a humorous self-deprecating comment, adding relational depth.

Sequential Organization: From lines (3) to (9), we see a progression of teasing and banter that reflects the speakers' closeness. Line (3) contains laughter and a metaphor, indicating playful criticism. This is followed by a justification in (4), denial in (6), counter-teasing in (7), and further humorous self-identification in (8).

Repair Mechanisms: While there are no overt errors requiring repair, line (6) provides a form of self-repair or elaboration to defend against the teasing. CA shows how speakers manage accountability and face needs while maintaining the flow of conversation.

Prosody and Paralinguistics: The laughter, smiling, and use of metaphors contribute to a light tone. Jeffersonian transcription could further detail overlapping talk, pauses, and pitch variation, which are crucial in interpreting emotional nuance.

Preference Organization: There is a preference for humor and affiliation, with dispreferred responses (like missing class) being softened through jokes and shared laughter. CA illuminates how social harmony is maintained despite minor transgressions.

2. Discourse Analysis

Identity Construction: B constructs an identity as a laid-back, perhaps chronically late student, using humor to mitigate the seriousness of missing class. A positions herself as more disciplined but friendly, reinforcing her role through teasing rather than confrontation.

Intertextuality and Social Context: The references to alarms, morning routines, and lecture slides draw on shared student experiences. These references position the speakers within the broader discourse of academic life, where punctuality and responsibility are valued but often humorously subverted.

Power and Ideology: While this is a casual interaction, power dynamics are subtly present. A has conversational control in initiating the topic and maintaining the teasing frame, subtly reinforcing social norms of academic responsibility. B's responses uphold these norms while gently resisting them.

Framing and Modality: The conversation is framed as friendly banter, not confrontation. Modality (e.g., "maybe," "seriously") softens statements, making them less face-threatening. This framing reflects a shared understanding of acceptable behavior within their peer group.

Further Examples

To extend the analysis, consider another snippet from a workplace setting:

(1) C: Hey, could you send me the Johnson report by noon?
(2) D: Uh, yeah. I think I can manage that.
(3) C: Great. We're presenting it this afternoon.
(4) D: No pressure, huh? (laughs)

From a Conversation Analysis (CA) perspective, this exchange exemplifies a clear adjacency pair: a request (turn 1) followed by a compliance-oriented response (turn 2). The hesitancy marker "Uh" and the modal phrase "I think I can manage that" suggest a level of uncertainty or effort, which adds nuance to the acceptance. Turn 3 adds reinforcement of urgency, emphasizing the significance of the task's deadline. In turn 4, the speaker responds with a humorous comment, "No pressure, huh?" accompanied by laughter, which functions as a mitigation strategy to relieve tension and maintain positive rapport. In CA terms, this is a good example of preference organization, where the recipient prefers to agree or comply, even when the request may impose a burden.

From a Discourse Analysis (DA) perspective, this interaction reflects characteristics of institutional discourse in

professional settings. The speakers are engaged in task delegation and deadline management, both of which are integral to workplace communication. Despite the underlying stress associated with the deadline, the tone remains casual and collegial, which may point to a workplace culture that values interpersonal harmony and uses humor as a discourse strategy for stress reduction. The use of informal language ("Hey," "No pressure, huh?") and laughter indicates that social bonding is being prioritized alongside task completion, which is common in cooperative work environments. This blend of urgency and informality reveals an underlying discourse of professionalism balanced with approachability, often encouraged in modern organizational cultures.

Such examples underscore the richness that both DA and CA bring to the analysis of spoken interaction. While CA focuses on the micro-structure of talk—such as sequencing, turn-taking, and repair—DA offers a broader view that connects language use to social roles, power relations, and cultural norms. Together, these approaches help researchers gain deeper insights into the communicative practices that shape everyday institutional life. These insights are particularly valuable for applications in workplace training, organizational communication studies, and language education.

DISCUSSION

This analysis reveals how real-life conversations are rich with social meaning and structured interactional practices. From a Conversation Analysis (CA) perspective, the orderly nature of turn-taking and repair mechanisms showcases participants' mutual orientation to conversational norms. In the example provided, the absence of overlap or interruption, and the sequential building of humor, reflects a cooperative interactional style (Sacks, Schegloff, & Jefferson, 1974). Each participant

aligns with expected turn-taking behaviors, signaling attentiveness and affiliation, which reinforces group cohesion. Furthermore, the subtle repair features—such as hedging, delayed responses, and laughter—illustrate the participants' sensitivity to face-work and social balance.

The Discourse Analysis (DA) lens extends this analysis by situating the talk within the broader discourse of student or workplace life. Humor, while often perceived as lighthearted or inconsequential, serves deeper discursive functions: it is used to negotiate social roles, build solidarity, and subtly manage power dynamics. As Fairclough (1992) argues, discourse is not just a means of communication—it is a site of ideological negotiation and social practice. In this interaction, the casual register and mutual teasing reinforce peer relationships, but also reflect a shared understanding of their institutional context and social identities.

Moreover, the interaction reflects how language both constructs and mirrors social reality. A passing reference to "slides being posted," for instance, assumes the presence of digital infrastructure and a degree of asynchronous learning culture, subtly indicating changing academic norms. This speaks to broader discourses of flexibility and digital autonomy in educational institutions, where the boundaries between formal and informal learning are increasingly blurred. The language used in these conversations normalizes and reinforces such norms, positioning participants as both subjects and agents within these evolving structures.

Combining CA and DA allows for a layered understanding of interaction. While CA offers micro-level insights into the structural features of talk—such as turn design, sequencing, and timing—DA provides macro-level interpretations that consider sociocultural, institutional, and ideological dimensions. This complementary relationship enhances our ability to analyze not

just what is said, but also how it is said and why it matters in a given social context. This synthesis is particularly valuable in educational research, where understanding both classroom interactions and institutional discourses can inform more responsive and reflective pedagogical practices.

In applied settings such as language education, intercultural training, or professional communication, these findings emphasize the importance of teaching both pragmatic competence and critical discourse awareness. Learners need to develop not only the ability to use language appropriately in interaction (e.g., turn-taking, politeness, repair) but also to understand how language choices reflect and shape power relations, cultural values, and institutional norms.

Ultimately, the blend of CA and DA presented in this analysis provides a robust and flexible toolkit for understanding the complexity of human communication. Whether the focus is on casual conversation, institutional discourse, or digital interaction, these approaches work in tandem to illuminate both the mechanics and meanings of language in action, enriching our ability to interpret and engage with the social world through discourse.

CONCLUSION

This paper has demonstrated the power of combining Discourse Analysis (DA) and Conversation Analysis (CA) to study naturally occurring spoken language. While each approach has its own theoretical roots and analytical focus, their integration provides a more complete understanding of both the structural and sociocultural dimensions of communication.

Through a detailed analysis of a casual student conversation, we explored how language functions not only as a medium of interpersonal interaction but also as a reflection of broader social norms, ideologies, and identities. CA enabled us

to unpack the organization of interaction, such as turn-taking, repair, and preference structures, while DA illuminated how discourse constructs social identities, reflects institutional expectations, and embeds power dynamics.

The findings suggest that everyday conversations are far from trivial; they are rich with meaning and serve important social functions. By examining a seemingly mundane exchange, we uncovered the interactional techniques used to maintain relationships, manage accountability, and construct student identities. Humor and informality, while often overlooked in serious discourse, emerged as powerful tools for both connection and subtle critique.

The implications of this analysis extend into various fields, including education, media, organizational communication, and intercultural studies. Language educators, for instance, can use CA and DA to improve students' pragmatic awareness and critical thinking skills. Media analysts can use these tools to assess how different narratives and ideologies are constructed. In professional settings, these methods can aid in understanding team dynamics, customer service communication, or cross-cultural interactions.

Ultimately, real language analysis through CA and DA deepens our appreciation of communication as a complex, contextual, and socially embedded process. Future research can continue to explore hybrid methodological approaches, delve into multimodal discourse, and apply these insights to digital communication contexts, where the norms of interaction are continually evolving.

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AUTHOR'S PROFILE

Akhmad Hairul Umam
Lecturer, Communication Studies Program
Faculty of Management and Leadership, Tanri Abeng University, Jakarta

Akhmad Hairul Umam is a faculty member at the Communication Studies Program, Faculty of Management and Leadership, Tanri Abeng University, Jakarta. He was born in Sumenep, Indonesia, on January 6, 1982. His academic expertise lies in English language teaching, applied linguistics, and intercultural communication. He completed his undergraduate degree in English Education at UIN Syarif Hidayatullah Jakarta in 2004, followed by a Master's degree in Applied Linguistics at Universitas Negeri Jakarta in 2010. In 2024, he earned his Doctorate in Applied English Linguistics from Atma Jaya Catholic University of Indonesia. His doctoral research focused on translingual practices in remote English language learning, highlighting the dynamic use of linguistic repertoires in digital learning environments. Umam has received several nationally competitive research grants, including the Beginner Lecturer Research Grant (PDP) and the Doctoral Dissertation Research Grant (PDD), both awarded by the Ministry of Research, Technology, and Higher Education as well as the Ministry of

Education, Culture, Research, and Technology (Kemendikbudristek). In 2025, he was awarded a grant under the Community Partnership Program (PKM) by the Directorate of Research, Technology, and Community Service (DRTPM), Kemendikbudristek. The funded project, titled "Empowering Community Partnerships as a Green Economy Strategy in Science- and Technology-Based Waste Management at the Tri Alam Lestari Waste Bank in South Jakarta," integrates social empowerment and sustainability through educational outreach and community engagement. His research interests include technology-integrated English instruction, applied linguistics, curriculum innovation in foreign language education, and cross-cultural communication.

CHAPTER 11
LANGUAGE DATA AND TOOLS: INTRODUCTION TO CORPUS LINGUISTICS

Stefanus Angga B. Prima
Universitas Agung Podomoro, Jakarta Barat
E-mail: stefanus.angga@podomorouniversity.ac.id

INTRODUCTION

Although it is not easy to give a precise definition, corpus linguistics can generally be defined as a branch in linguistics that focuses on procedures or methods for studying language through a set of texts collected through various mode of communication, spoken or written (McEnery & Hardie, 2012). For decades, corpus linguistics has become a powerful tool for researchers and learners who seek a better understanding on how the language works in authentic contexts in different types of mode of communication.

A corpus (plural corpora) often has millions or billions of words. Two examples of prominent large data sets of corpora are British National Corpus (BNC)—which was originally created by Oxford University Press in the 1980s—and Corpus of Contemporary American English (COCA). BNC contains 100 million words of text from various genres, such as spoken, fiction, magazines, newspapers, and academic, while COCA has more than one billion words text from eight different genres: spoken, fiction, popular magazines, newspapers, academic texts, TV and movies subtitles, blogs, and other web pages (Davies, 2008). The data provided in BNC and COCA can be digitally accessed and systematically tagged, which allows researchers, learners, or teachers to study about the key words in context or

concordance, word frequencies, and usage with the help of tools and applications available (Pérez-Paredes & Boulton, 2025).

What makes corpus linguistics powerful is that the data collected to be studied is based on real-life data, written or spoken. The data collected, as it is authentic, can provide valuable insights which coursebooks cannot offer. For example, when learners or teachers want to learn which whether 'fast response' or 'quick response' are used more commonly in the context of American English, they can utilize corpora and use the concordance tools (Misnawati et al., 2025). After looking it up using concordance tools, it shows that 'quick response' is more common. Another example of the utilization of corpus linguistics is by Yuliawati et al. (2019), who analyzed the word frequency analysis of Indonesian presidential and vice presidential candidates in a televised presidential debate through type/token ratio. These types of insights show how corpora can be valuable not only for language study, but also other fields like political sciences (Taylor, 2022).

This chapter explains the concepts and tools of corpus linguistics that can be utilized in second/foreign language teaching, or more specifically in Teaching English (or other languages) to Speakers of Other Languages (TESOL) context. The chapter specifically focuses on explaining how language data are built, brief survey of existing tools and applications, ideas on how to incorporate them into language teaching and learning, and the future developments. Whether you are a student aiming to improve your English, a teacher developing materials, or a researcher exploring language patterns, this chapter will help you harness the power of language data for more informed learning, teaching, and analysis.

Corpora and Tools

Corpora are built differently as each one is assembled with a specific purpose and design. Some are built to reflect a wide range of language use across everyday situations, while others may focus on areas such as academic lectures, legal documents, or learner writing. These choices—what texts to include, how much of each type, whether spoken or written, and who the speakers or writers are—determine the usefulness and reliability of the corpus for answering different linguistic or pedagogical questions. For example, a national corpus might be constructed to study general trends in language change, while a learner corpus is developed to examine second or foreign language development or common learner errors. Not all corpora are created alike. Their design reflects specific linguistic goals, data availability, and practical considerations. To use corpora effectively—whether in research, language teaching, or learning—it is important to understand the different ways they can be categorized. Below are four dimensions often used to classify corpora and corpus linguistic studies according McEnery and Hardie (2012).

Mode Of Communication

Corpora can consist of spoken, written, or multimodal texts. Spoken corpora, such as the Michigan Corpus of Academic Spoken English *(MICASE; Simpson et al., 2002), which contains* nearly two million words reflect real-time, spontaneous interaction occurred during teaching and learning process at the University of Michigan. This type of corpora may be useful for studying conversation and discourse markers. Written corpora (e.g., COCA) provide insight into formal grammar, vocabulary, and structure.

Data Collection Regime

Corpora differ in how their data is gathered. A systematic corpus follows strict sampling procedures to achieve balance across genres, time periods, or regions. An opportunistic corpus is assembled from available sources without strict sampling—for example, collecting all subtitles from a movie database. Some corpora (like COCA) use a monitoring approach, with regular updates to track language change over time.

Annotated VS. Unannotated Corpora

Many corpora include linguistic annotations, such as part-of-speech tags, lemmas, or syntactic structures. This enables more precise and powerful searches. Others are plain text corpora, which are simpler and easier to access but require more interpretation from the user. For learners and beginners, annotated corpora can offer scaffolding in identifying grammar patterns.

Monolingual VS. Multilingual And Parallel Corpora

A monolingual corpus includes texts in one language, while multilingual corpora include materials in two or more languages. McEnery and Hardie (2012), however, mentions that multilingual corpus should at least has three languages and the two languages should be referred as bilingual corpora. Parallel corpora are especially useful in translation studies and for bilingual learners—they allow comparison of how meanings are expressed across languages. For example, National Corpus of the Russian Language (NCRL), which provides Russian-language texts with multilingual component (Pei, 2025) or for more advanced usage such as in Machine Translation (Tan et al., 2020).

Understanding these typologies is useful when choosing a corpus for teaching, learning, or research. For example, an English teacher might use a spoken, annotated, monolingual learner corpus to help students notice recurring grammar patterns in spoken academic English, while a translation student might prefer a parallel corpus that compares English and Indonesian versions of legal contracts.

In addition to these dimensions, it's also helpful to understand differences in how corpora are used. One such distinction is between total accountability and data selection**.** This refers not to the corpus itself, but to the research strategy applied by the user. Some corpus studies analyze entire corpora, which is known as total accountability. This is common in frequency studies or national corpus research. Other studies rely on selected samples from a corpus, particularly when researchers are interested in a specific genre, speaker group, or theme. This method is more common in classroom-based or small-scale research. For example, a teacher may work with only a few selected texts from a larger corpus to analyze how learners use modal verbs, while a researcher conducting a frequency study may use the entire corpus to ensure statistical accuracy. Table 11.1 below illustrates how several well-known corpora can be positioned along these typological lines.

Table 11.1. Typology of Selected Corpora

Corpus Name	Mode	Corpus-Based / Corpus-Driven	Data Collection	Annotated	Typical Use Strategy	Mono / Multi-lingual
BNC (British National Corpus)	Written & Spoken	Corpus-Based	Systematic	Yes	Total Accountability	Monolingual (British English)
COCA (Corpus of Contemporary American English)	Written & Spoken	Corpus-Based	Monitor-style, systematic	Yes	Total Accountability	Monolingual (American English)
MICASE (Michigan Corpus of Academic Spoken	Spoken (Academic)	Corpus-Based	Systematic	Yes	Total Accountability	Monolingual (American English)

Corpus Name	Mode	Corpus-Based / Corpus-Driven	Data Collection	Annotated	Typical Use Strategy	Mono / Multi-lingual
English)						
ICLE (International Corpus of Learner English)	Written (Essays)	Corpus-Based	Systematic (by L1 group)	Yes	Data Selection	Multilingual (by L1 group)
OPUS (e.g., OpenSubtitles, EUParl)	Written (parallel)	Corpus-Driven / Corpus-Based	Opportunistic / Systematic	Some subsets	Varies (often selection-based)	Parallel (Multilingual)
LINDSEI (Spoken learner English)	Spoken	Corpus-Based	Systematic	Yes	Data Selection	Multilingual (aligned by L1)

Corpus Name	Mode	Corpus-Based / Corpus-Driven	Data Collection	Annotated	Typical Use Strategy	Mono / Multi-lingual
Korpus Nasional Bahasa Indonesia	Written & Spoken	Corpus-Based	Systematic (developing)	Partial	Total Accountability	Monolingual (Indonesian)

Table 11.1 above shows that while most corpora are built to serve research needs, some are also relevant to be utilized in classroom instruction and foreign or second language learning, but the application should be done thoughtfully. For example, COCA is used by researchers to investigate collocations, grammar patterns, and word frequency in American English. It has also been used by Seog et al (2019) to examine the difference of usage of 'going to' versus 'will' between Korean EFL learners and American native English speakers. The study also utilized two learner corpora, the Kyungpook National University (KNU) Student English Learner Corpus-Written (KSELC-W) and the KNU English Learner Corpus (KELC). Similarly, (Chuang, 2022) investigated COCA to study verbs collocating with 'will' and 'going to' which shows that 'will' contexts have been preferred to formal use, while 'going to' contexts have more informal spoken context.

The British National Corpus (BNC) has served as a foundational dataset for both theoretical linguistics and practical lexicography. It is especially known for studies of British English vocabulary, modal verbs, and gendered discourse. Furthermore, Brezina et al. (2018) builds specialized corpus named BNCLab based on the British National Corpus (BNC) by incorporating sociolinguistic parameters. The research explores a variety of sociolinguistic variables to enhance our understanding of language change at the community, generational, and individual levels. This work also contributes to ongoing discussions about how to design large-scale corpus studies within a sociolinguistic framework, taking into consideration factors such as employment and educational Furthermore, the BNCLab, offers educational materials aimed at both teachers and students, including those studying A-level English language and those involved in English as a Foreign or

Second Language (EFL/ESL) teaching and learning based on the corpus they have created.

MICASE is particularly suited for learners and teachers involved in English for Academic Purposes (EAP**)**. Because it focuses on spoken academic English in a university setting, it can help students understand real-life use of discourse markers, turn-taking, hedging, and question strategies. One usage of this corpus is by Bardovi-Harlig, Mossman, and Su (2019), who designs a study to incorporate MICASE as learning materials for English as a second language learners studying pragmatics.

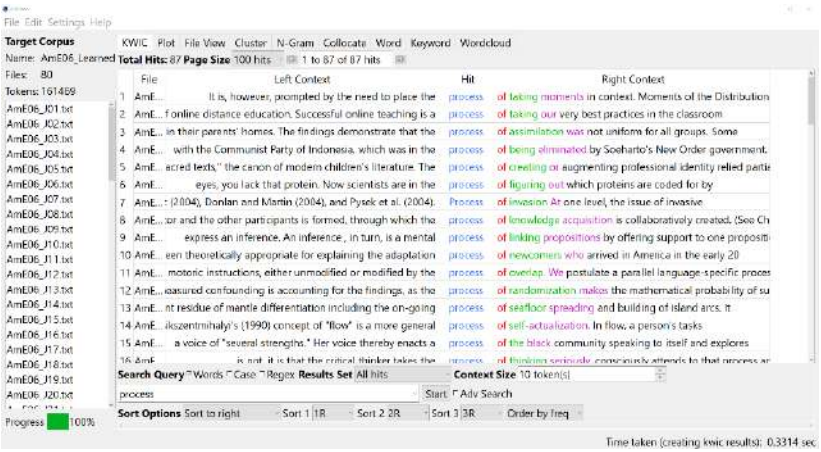
Finally, the *Korpus Nasional Bahasa Indonesia* (Jayanti et al., 2024) a growing resource for Indonesian linguists and teachers. Although still under development, it holds great potential for use in bilingual comparative studies or in understanding emerging lexical trends in Indonesian.

Corpus Tools

When it comes to working with a corpus, the tools we use really matter. Without the right features, even the most impressive dataset becomes difficult to explore. Fortunately, corpus tools today come in a wide range of formats—some are web-based platform**s** that you can access directly through your browser, while others are standalone applications that you download and run on your computer. Each type has its strengths: web-based tools like COCA or BNC Lab are often easy to use and require no installation, while downloadable tools like AntConc or LancsBox offer more advanced features and greater flexibility, especially when you're working with your own texts.

Regardless of format, most tools share a few core functions that make them truly useful. First—and probably most important—is called a concordancer. This tool lets you search for a word and see it used in dozens or hundreds of real-life examples, each surrounded by a bit of context. These are often

displayed in a format called *KWIC*—short for "Key Word in Context." Think of it like flipping through dozens of pages to see how people actually use a word like *actually*—except the tool does it for you instantly. It is a simple but powerful way to explore grammar, vocabulary, and real-world usage beyond the textbook.



Source: https://www.laurenceanthony.net/software/antconc/

Figure 11.1. Concordance List or Key Word in Context (KWIC) in AntConc

Another essential feature is the frequency list, which shows how often certain words or phrases appear in a corpus. This might seem straightforward, but frequency can reveal a lot about how language is used. For instance, it can help teachers choose which words to prioritize when planning lessons, or help learners focus on vocabulary that really matters in a particular context. Then there's collocation analysis—an especially helpful function for both teachers and learners. Collocations are words that tend to appear together, like *make a decision*, *take responsibility*, or *strong coffee*. These combinations are not always predictable from grammar rules alone, but corpora make

them visible and easy to analyze. Some tools even include scores to show how strongly two words are connected, which helps learners notice patterns they might otherwise miss.

Most tools also offer search filters**,** so users can narrow down their results to suit specific needs. You might want to search only in spoken English, only in academic texts, or only in data from a certain time period or region. Some tools even include part-of-speech tagging**,** which means you can specify whether you're looking for *run* as a verb or *run* as a noun—an especially useful option when dealing with high-frequency words that have multiple meanings.

There is also keyword analysis, which compares two corpora and shows you which words are unusually frequent in one compared to the other. This is especially helpful for comparing learner writing to native-speaker texts, or exploring how language differs between genres like journalism and academic research. Some tools go even further with visualizations—things like bar graphs, word clouds, or network diagrams that map relationships between words. These visuals can be especially helpful for learners or novice researchers who benefit from seeing patterns at a glance. And for those doing in-depth projects or working with specific language communities, tools like AntConc and Sketch Engine allow users to build and analyze their own corpora, making it possible to explore highly customized datasets, such as student writing samples, workplace communication, or local dialect recordings.

At the very least, though, a good corpus tool—whether web-based or installed on your device—should give you the ability to view real-life examples through concordancing, generate frequency lists, and explore common word pairings through collocation analysis. These three features alone open the door to deeper, more authentic language insights. Everything

else simply adds more layers to the picture—and more possibilities for learning and discovery.

Challenges and tips for classroom use

Although corpus linguistics offers greater opportunities for both teachers and learners, putting it into practice—especially in typical language classrooms—comes with its own challenges. One of the biggest challenges is simply that most corpus-based teaching still happens at the university level**,** and is often centered on academic writing. As highlighted by Lusta et al. (2023) in their systematic review of corpus-based pedagogy and data-driven learning (DDL), the vast majority of studies and applications focus on helping university students write essays, reports, or theses in English for Academic Purposes (EAP). This is valuable, of course—but it also means that other skill areas, like speaking, listening, or informal communication in the contexts of primary education have received much less attention in corpus-informed teaching.

This narrow focus can leave teachers in secondary schools, vocational settings, or general English classrooms unsure of how corpus tools can benefit their students. The interfaces themselves can also be intimidating. While experienced researchers may be comfortable with terms like *lemma*, *collocation window*, or *POS tagging*, beginners—especially learners who are still building basic digital literacy—can easily feel overwhelmed. Some platforms require a steep learning curve and may not be intuitive enough for everyday classroom use.

Another frequently cited challenge is the technical complexity of corpus tools, especially when considered alongside the real constraints of classroom time (Misnawati et al., 2025). While many teachers acknowledge the value of using corpora—for example, in offering authentic language examples

and encouraging learner autonomy (Vyatkina & Boulton, 2017)—the reality is that many of the available tools can be intimidating to both teachers and students. Functions like concordancing, setting collocation windows, or filtering by grammatical categories require not only digital literacy but also a good understanding of how language patterns work. This may require bigger cognitive load which pose as a unique challenge when implementing it in classrooms. Therefore, corpus-based activities, though pedagogically promising, are often postponed in favor of more manageable and familiar methods.

Spivey (2023) notes that students responded positively to data-driven learning (DDL) activities, with many showing a stronger preference for paper-based tasks rather than using computers. It also highlights the importance of providing support, or scaffolding, when working with young learners, and points out some practical challenges that need to be addressed to successfully use DDL in EFL classrooms for younger students.

To ease these challenges, it helps to start small. Teachers do not need to use advanced statistical tools or custom-built corpora to make the most of corpus linguistics. A single session where students use COCA or BNC Lab to explore collocations, or a simple homework task involving AntConc and student writing, can already shift how learners think about language. With time, learners often become curious on their own—asking questions like, “Is that phrase really common?” or “Do people really say it like that?” These are the kinds of questions corpus tools are designed to answer.

Finally, support and training matter. Schools and language departments should consider offering short workshops or hands-on demonstrations to introduce corpus tools to teachers. There is also growing interest in building localized or learner-specific corpora, which opens the door to more tailored and relevant

classroom content—especially in multilingual and multicultural contexts.

FUTURE DIRECTION AND CONCLUSIONS

As more teachers and researchers explore the benefits of corpus linguistics in language education, it's clear that this field is continuing to evolve in exciting ways. What once seemed like a highly technical, research-only method is now increasingly recognized as a valuable classroom resource. Still, the future of corpus-based language learning will depend on a few key developments—especially in how tools are designed, how training is provided, and how corpus methods can be adapted to suit learners at all levels.

One promising direction is the increasing accessibility of corpus tools**.** Many platforms are becoming more user-friendly, with simpler interfaces, mobile compatibility, and built-in tutorials. Tools like BNC Lab, SkELL (Sketch Engine for Language Learning), and newer iterations of COCA are already making it easier for teachers and students to jump in with little technical experience. As these platforms continue to improve, they are likely to attract a broader base of users—not just from higher education, but also from secondary schools, vocational institutions, and self-directed learners.

Corpus linguistics is also gaining ground as a tool for learner reflection and autonomy. As students gain experience navigating concordance lines and identifying usage patterns, they begin to ask better language questions—and, crucially, they start answering those questions on their own. This shift from "being told" to "discovering" represents a major step toward independent learning. It also aligns with broader educational goals like inquiry-based learning and digital literacy.

However, for these changes to happen, teacher education and professional development will play an important role. More

pre-service training programs and in-service workshops need to introduce teachers to corpus methods in a hands-on, practical way. Ideally, this training should be linked to real classroom needs, so that teachers can immediately see how corpus tools support their teaching—rather than feeling like an extra burden or an abstract theory. As Misnawati et al. (2025) and Lusta et al. (2023) both note, one of the biggest obstacles is not interest or motivation, but time, confidence, and clear models for implementation**.**

Looking ahead, the integration of corpus linguistics with AI-driven platforms **and** mobile learning may also open up new possibilities. Chatbots, intelligent tutoring systems, and interactive apps could draw on corpus data to provide authentic, personalized feedback in real time. These tools could offer examples from real corpora to support learners' writing, correct errors, or suggest more natural phrasing—all without requiring the student to leave the platform.

In conclusion, corpus linguistics has already reshaped how we study and understand language. Its potential to enhance language education—particularly in making learning more authentic, relevant, and data-driven—is enormous. But realizing that potential in everyday classrooms will depend on thoughtful integration, supportive infrastructure, and a willingness to adapt. By starting small, staying learner-centered, and embracing collaboration, educators can bring the power of corpus tools into their own teaching practices—helping students not only learn English, but learn how English works.

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AUTHOR'S PROFILE

Stefanus Angga B. Prima

Experienced university lecturer with a demonstrated history of working in the higher education industry. Currently holding Asisten Ahli and teaching English classes at Podomoro University, Jakarta Barat. Skilled in Translation, Teaching English as a Second Language, Building Teaching Materials and assessment, and Teaching English for Specific Purposes (ESP). Strong education professional with a Master of Arts - MA focused in TESOL from Minnesota State University, Mankato.

CHAPTER 12
WHY LINGUISTICS MATTERS: APPLICATION IN REAL-WORLD CONTEXT

Andreas Noreewec
University of Papua New Guinea, Port Moresby
E-mail: andreas.noreewec@upng.ac.pg

OVERVIEW

Numerous individuals contend that linguistics is solely a theoretical or academic discipline, appropriate only for classroom study, research publications, and scholarly discourse. This prevalent impression fails to acknowledge the significance and human-centric nature of the profession. Linguistics beyond the mere examination of language structures; it serves as a vital foundation influencing nearly every facet of individual and cultural existence, communication, and interaction. Linguistic insights enable educators to enhance the inclusivity of multilingual classrooms by appreciating and leveraging the diverse linguistic backgrounds of their students. In hospital environments, proficient communication grounded in linguistic principles can preserve lives by ensuring that vital information is precisely conveyed and comprehended, even among individuals who do not share a common language. Courtroom interpretation requires specialized linguistic competencies to guarantee justice and equity in legal contexts. Linguistics holds significance beyond mere human interactions. Technical advancement is crucial, particularly in the evolution of natural language processing systems that enable robots to comprehend, interpret, and generate human language. Language, cognition, and technology are interconnected; therefore, linguistics is essential to various social, educational, legal, and technological

frameworks. Linguistics is a valuable and profoundly human discipline essential for addressing real-world issues and enhancing communication across various contexts, beyond the classroom.

The preceding chapters of this book presented the fundamental domains of linguistics, encompassing phonetics, morphology, pragmatics, and corpus analysis, each providing theoretical understanding of language functioning. In this concluding chapter, we revisit the core issue: the significance of linguistics. Utilizing examples from real-world contexts, particularly in linguistically diverse regions such as Indonesia and Papua New Guinea, we demonstrate how linguistic proficiency transcends academia to enhance lives, influence equitable policy, and promote cross-cultural understanding. In many circumstances, linguistics transcends the sheer study of language; it serves as an instrument for empowerment, social justice, and significant human connection.

LINGUISTICS IN EDUCATION: SUPPORTING LANGUAGE LEARNING AND TEACHING

Linguistics plays a crucial role in influencing the methodologies of language instruction and acquisition, serving both as a theoretical framework and a practical resource for educators. Linguistic theory provides crucial tools for developing effective teaching methodologies in both first and second language instruction. Comprehending phonology (the sound system of language) and morphology (the structure of words) is essential for developing early literacy skills, particularly as children begin reading and writing. Similarly, understanding syntax and pragmatics enhances learners' reading comprehension and writing skills by enabling educators to elucidate the construction of meaning in texts. In second language acquisition, methods like contrastive analysis and error

analysis, grounded in applied linguistics, allow educators to predict challenges learners may encounter due to discrepancies between their native language and the target language (Ellis, 2015). These insights inform the development of language curriculum, enhancing their responsiveness to learner requirements.

Sociolinguistics provides essential insights into language utilization in practical contexts. It urges educators to acknowledge the considerable linguistic diversity that students contribute to the classroom, particularly in multilingual cultures. In Indonesia, where more than 700 local languages exist alongside Bahasa Indonesia, educators are being urged to implement a translanguaging method that validates the use of local languages by students in educational settings (Cahyani et al., 2018). This not only improves educational results but also validates kids' cultural identities.

In Papua New Guinea, which boasts the most linguistically diverse nation with over 800 languages, linguistics informs mother-tongue-based multilingual education (MTB-MLE) programs. These programs facilitate children's initiation into education in their primary language, frequently vernaculars, before shifting to Tok Pisin or English, hence enhancing comprehension and educational involvement (Walter & Dekker, 2011).

Moreover, linguistic research endorses the creation of culturally and linguistically suitable instructional materials and evaluations. This guarantees that students' learning aligns with their lived experiences and languages, mitigating bias and promoting fairer educational institutions. Educators with linguistic expertise are more adept at confronting linguistic bias and fostering inclusive language practices, hence cultivating classroom environments where all students feel esteemed and empowered (Godley et al., 2006)

Linguistics is fundamentally a practical instrument that assists actual educators in real classroom settings, rather than merely an academic discipline confined to textbooks. It elucidates the mechanics of language: our modes of speaking, reading, writing, and interpersonal interaction. This comprehension instills instructors with the assurance to instruct more proficiently. Linguistics provides insights that enhance teaching by assisting young learners with phonetic recognition, supporting multilingual students, and developing educational resources that represent students' cultures and communities, so fostering a more thoughtful, inclusive, and impactful learning environment. It underscores the significance of each student's language and emphasizes that language is fundamental to our connections, learning, and development.

FORENSIC LINGUISTICS AND LANGUAGE RIGHTS IN LEGAL CONTEXTS

Law requires linguistics, especially forensic linguistics, which uses language as evidence. This branch of applied linguistics applies language theory to legal practice to help investigators find the truth and ensure justice. Forensic linguists identify authorship in anonymous threats, evaluate unclear legal documents, and identify deceptive language in police interviews (Coulthard & Johnson, 2010). In high-profile criminal cases worldwide, precise interpretation of a word, phrase, or remark can determine justice or injustice. Under the Electronic Information and Transactions (ITE) Law, Indonesia is increasingly using forensic linguistics to investigate online defamation and hate speech. Linguists evaluate social media posts' intent, tone, and pragmatic meaning to determine if they are illegal or free speech (Arisandy, 2020). In problematic blasphemy or political defamation cases, linguistic specialists

have helped courts determine whether a word was intended ironically or symbolically, which can affect legal outcomes.

While a large number of Papua New Guineans use indigenous languages, forensic linguistics could impact legal systems that use Tok Pisin and English in formal situations. Confessions or witness testimony may be misinterpreted due to language limitations or code-switching between Tok Pisin and local languages. Forensic language analysis clarifies utterances, especially a suspect's understanding of their rights at confession (Cahill & Karan, 2008). The complex language of Papua New Guinea shows that forensic linguistics may improve legal protections and prevent linguistic variety from hindering justice.

Language rights are essential to equitable justice in multilingual communities, and linguistics goes beyond judicial analysis. Applied linguists promote language equity in legal and government contexts through language policy and planning. Since many South Africans and Papua New Guineans do not speak the dominant legal language, linguists have advocated for policies to provide interpretation services, translate legal materials, and offer legal education in local languages. This allows minority or indigenous language speakers to fully participate in legal proceedings and exercise their civic rights. Legal linguistics goes beyond words to justice. Language clarifies, improves fairness, and improves accessibility in the legal system, whether through social media interpretation, police confession analysis, or language rights campaigning for underrepresented communities.

LINGUISTICS IN HEALTHCARE: IMPROVING COMMUNICATION AND PROMOTING INCLUSIVE CARE

Effective communication between healthcare providers and patients is crucial, as it can profoundly influence patient

outcomes. Language obstacles, cultural disparities, and complex medical terminology can lead to erroneous diagnoses, unsuitable treatments, and reduced patient confidence. Linguists and language specialists are essential in this situation. They facilitate the creation of patient-centered communication standards, evaluate real doctor-patient interactions, and instruct healthcare workers to utilize language that is both accurate and intelligible (Heritage & Maynard, 2006).

In Indonesia, Bahasa Indonesia serves as the national language; nevertheless, the widespread use of regional languages, such as Javanese, Sundanese, and other Papuan languages, hampers communication in healthcare facilities. During the COVID-19 epidemic, health instructions and cautions were initially conveyed in formal Bahasa Indonesia, resulting in misunderstanding among rural or linguistically diverse people (Sutrisni et al., 2023). Linguists and translators enabled the localization of health communication by rendering vital public health resources into regional languages and elucidating intricate terminology to guarantee accessibility for all demographic segments. The role of forensic linguists is crucial in situations involving legal or ethical dilemmas, especially in the analysis of consent documents and the evaluation of patients' understanding of the risks associated with medical operations. In Papua New Guinea, where over 800 languages are spoken, the challenge is considerably intensified. Tok Pisin is widely used in health facilities; yet, many patients still choose to communicate in their indigenous language (Tok Ples). Research demonstrates that in many rural clinics, patients often do not fully comprehend the explanations given about medications or treatment plans, especially when conveyed in English or advanced Tok Pisin (Rumsey, 2014). Linguists partnered with the PNG Department of Health and NGOs to create multilingual health education resources, conduct

communication audits in clinics, and improve interpreting services in maternal and reproductive health settings, where miscommunication presents considerable risks for women and children.

In specialist domains such as speech-language pathology, linguistics holds comparable significance. Phonetics and phonology are employed to assess and address speech abnormalities in both children and adults. Linguists examine articulation issues in multilingual children, ensuring that developmental norms are evaluated with cultural and language sensitivity. Psycholinguistic research aids in the evaluation and treatment of language-related cognitive disorders, including aphasia, dyslexia, and language delay. This is particularly essential when diagnostic instruments must be modified for a multilingual demographic (Field, 2003).

Linguistics enhances healthcare by improving communication clarity, precision, and cultural relevance. This methodology facilitates inclusive and equitable healthcare services that acknowledge and address the varied linguistic requirements of patients, regardless of whether they are in urban hospitals or rural clinics.

LINGUISTICS IN TECHNOLOGY: LANGUAGE PROCESSING, ARTIFICIAL INTELLIGENCE, AND DIGITAL JUSTICE

Justice Linguistics is essential to modern technology. Recent advances in computational linguistics and natural language processing (NLP) have enabled machines to understand and interact with human language. Siri, Google Assistant, Google Translate, and ChatGPT all depend on linguistic competence (Jurafsky & Martin, 2023). Syntax, semantics, phonetics, and corpus linguistics let machines understand grammar, meaning, and context. Numerous

applications use annotated corpora, large databases of linguistically annotated real-world language data. These corpora train machines to recognize and reproduce human communication patterns. New large language models (LLMs) like ChatGPT are based on deep learning and massive datasets. Technology is transforming customer service, education, healthcare, law, and governance (Bender et al., 2021). NLP is used to automate social media moderation in Indonesia, a country with a rapidly growing digital communication environment and linguistic variety, to identify hate speech, misinformation, and online harassment. These systems struggle to recognize context, especially when users use local languages, dialects, or mixed-language phrases (Arisandy & Wibowo, 2022). Forensic linguists work with technology developers and law enforcement to find abusive or threatening language that automated systems miss. They excel at interpreting irony, slang, and code-mixed speech in defamation, cyberbullying, and blasphemy prosecutions.

Linguistics associated with technology in Papua New Guinea is promising yet still evolving. Digital inclusion in Papua New Guinea is difficult due to its 800 languages. Linguists and developers are interested in Tok Pisin and local language vernacular literacy and voice recognition software. Rural health communication, education, and legal documentation require these technologies, especially in oral language environments. In multilingual situations, forensic linguistics is necessary for accurate interpretation of recorded interviews, text messages, and voice evidence to ensure judicial impartiality (Cheong et al., 2025).

Linguistic theory and AI improve human–machine interaction and help solve real-world problems, including cybercrime, language-based discrimination, and multilingual justice. Linguistics helps ensure proper legal translations and

uncovers misleading language in political propaganda, making the internet more informed and equal. In recent years, computational linguistics and NLP have expanded dramatically. Linguistics and computer science enable machines to understand human language. Siri, Google Assistant, Google Translate, and chatbots are applications (Jurafsky & Martin, 2023). Corpus linguistics and syntax help NLP systems grasp sentence structures and semantics. Recent big language models like ChatGPT generate human-like text using annotated corpora and linguistic theory (Bender et al., 2021). These technologies are changing customer service and legal document analysis.

LINGUISTICS IN SOCIAL JUSTICE: LANGUAGE, IDENTITY, AND POWER

Language goes beyond communication and is tied to identity, culture, and power. It may empower or suppress people and communities. Critical discourse analysis (CDA) and sociolinguistics reveal the power dynamics of ordinary communication, media narratives, government policies, and institutional practices (Fairclough, 2014). Critical discourse analysis investigates how politicians construct policies that exclude groups and how media outlets employ nuance to affect public opinion. Critical Discourse Analysis (CDA) has shown how national language policies favor Bahasa Indonesia and English over local or indigenous languages in Indonesia and Papua New Guinea. Using a native language is typically seen as backward or uneducated, fostering linguistic stigma and social marginalization (Sneddon, 2003).

Sociolinguistic research shows that minority language speakers endure prejudice in schools, workplaces, and public institutions. Children who speak Javanese, Acehnese, or Papuan at home may struggle in Bahasa Indonesia-only schools. Speech patterns may be misinterpreted by educators as evidence of poor

intelligence or discipline, rather than linguistic diversity (Samuel, 2025). Linguists and educators have promoted inclusive and egalitarian education by raising awareness of code-switching, translanguaging, and mother-tongue instruction.

There are around 800 languages in Papua New Guinea, with Tok Pisin functioning as the unifying language and reflecting societal hierarchies. Tok Pisin speakers' perceptions vary by rural or urban use, although English is respected in legal and governmental settings. Linguists say Tok Pisin is a real language, not a "broken" English "pidgin". Siegel (1997) promotes Tok Pisin as a symbol of national identity and cultural pride in education and media.

Linguists are fundamental to language preservation and revival. Many indigenous languages in Indonesia and PNG are endangered. Linguists work with communities to catalog endangered languages, produce orthographies, and create educational resources for future generations (Sarvasy, 2023). These efforts go beyond word preservation to celebrate cultural identities and promote intergenerational fairness. By fighting linguistic prejudice, promoting language rights, and promoting a culture that appreciates all voices, regardless of dialect, accent, or language, linguistics helps to achieve social justice.

LINGUISTICS IN THE WORKPLACE: COMMUNICATION AND ORGANIZATIONAL CULTURE

Language and Organizational Culture at Work Language shapes relationships, workflows, and organizational culture in the workplace, which is a social context. From daily interactions to formal reports and policy documents, linguistics helps professionals communicate better. Discourse analysis lets scholars and professionals study how meaning is formed in workplace conversations, emails, and

boardroom meetings (Holmes & Stubbe, 2003). Linguistic inquiry can reveal miscommunication, power dynamics, and cultural assumptions that affect teamwork and decision-making. It guides leadership development, internal communication, and conflict resolution.

Communication in Indonesia favors indirectness, obedience to authority, and saving face due to Javanese cultural norms and hierarchical organizations. Professional interactions, especially between personnel from various ethnicities or islands, are rooted in linguistic courtesy. Junior personnel may be hesitant to offer questions or dispute ideas in meetings, causing misconceptions or a lack of innovation. Jakarta and Surabaya linguists have held pragmatic and discourse-based workshops to improve internal communication by increasing clarity while respecting cultural norms (Sumekto et al., 2022). These approaches have improved office communication across generations and ethnicities.

In Papua New Guinea, for instance, the workplace reflects the population's linguistic variety. Workers speak Tok Pisin, English, and one or more Tok Ples (local languages), depending on the situation. Government agencies, NGOs, and mining firms can have challenging interactions when workers from various regions work together. Language experts say code-switching between English and Tok Pisin is sometimes employed strategically: English signals formality or authority, whereas Tok Pisin builds rapport and shared understanding among colleagues (Kulick, 1992). Intercultural pragmatics-based workplace training programs enable supervisors and team leaders to understand these patterns and handle multilingual communication, especially in community engagement roles.

Globalization has made intercultural pragmatics essential. It examines how different cultures and languages comprehend meaning, behave politely, and arrange discussions. Even simple topics like how to say “no,” when to speak in a meeting, and

how to give feedback can vary greatly among cultures for large multinational companies operating in Indonesia and the Pacific (Scollon et al., 2011). Language experts help staff communicate across cultural boundaries to build mutual respect and understanding. Linguistics helps companies move beyond language skills. It helps teams communicate with cultural intelligence, minimize misinterpretation, and create a collaborative workplace where language is a bridge.

LINGUISTICS IN MEDIA AND COMMUNICATION

Linguistics is essential in media and communication as it examines how language is used to deliver messages clearly and persuasively to different audiences. In multilingual and multicultural societies like Indonesia, linguistic insights help media producers tailor content that resonates with different linguistic groups while promoting mutual understanding. Understanding language variation, pragmatics, and sociolinguistics enables communicators to craft messages that consider cultural nuances, avoid misunderstandings, and engage audiences more meaningfully. Additionally, media language shapes public opinion and identity, making the study of language in media essential for fostering inclusive communication in diverse societies. In Indonesia, with its rich linguistic diversity encompassing over 700 languages, the national language, Bahasa Indonesia, serves as a unifying medium in mass media and communication (Sneddon, 2003). Linguists contribute to standardizing and promoting Bahasa Indonesia for use in television, radio, newspapers, and digital platforms, ensuring that media content is accessible to the majority of the population. At the same time, regional languages also find expression in local media outlets, reflecting Indonesia's cultural plurality. Sociolinguistic research aids broadcasters and journalists in understanding language

preferences and code-switching practices among audiences, allowing them to produce content that respects local identities while maintaining national coherence.

Moreover, the rise of digital media in Indonesia has introduced new linguistic dynamics, where informal language styles, slang, and internet jargon proliferate. Linguists analyze these emerging language trends to understand how they influence communication patterns and social interactions, especially among younger generations (Napitupulu & Situmorang, 2022). Such research informs media strategies that effectively engage digital natives, using language that feels authentic and relatable. By integrating linguistic insights into media and communication, Indonesia continues to navigate the challenges of linguistic diversity while harnessing the power of language to foster connection and community across its vast populace.

LINGUISTICS AND LANGUAGE REVITALIZATION

Language revitalization requires linguistics, particularly across regions where many indigenous and minority languages face extinction. Through documentation, analysis, and community collaboration, linguists help preserve linguistic heritage and promote the continued use of these languages. Language revitalization not only safeguards cultural identity but also strengthens social cohesion and intergenerational communication. In multilingual countries like Indonesia and Papua New Guinea, where numerous indigenous languages are at risk, linguists work alongside communities to develop strategies that support language maintenance and revival.

In Indonesia, many local languages are endangered due to the dominance of Bahasa Indonesia as the national language and the pressures of globalization. Linguists engage in documenting these languages, creating written materials such as dictionaries

and grammars, and training community members in literacy and language teaching techniques (Nasrullah et al., 2024). Efforts in regions like Papua and Sulawesi involve collaboration between linguists, educators, and local communities to implement language programs in schools and cultural centres. These initiatives aim to empower speakers, preserve linguistic diversity, and provide younger generations with opportunities to learn their ancestral languages alongside the national language.

Similar challenges with language maintenance exist in Papua New Guinea, a country renowned for its remarkable linguistic diversity with over 800 languages. In order to support mother tongue-based multilingual education, linguists have played a crucial role in creating educational materials and orthographies for numerous indigenous languages (Romaine, 1992). Such programs have proven effective in increasing literacy and fostering pride in local languages, which encourages their continued use. The collaboration between linguists, local authorities, and communities exemplifies how language revitalization can be integrated into broader social and educational policies, ensuring that endangered languages remain vibrant components of cultural heritage.

CONCLUSION: SUMMARY: CONNECTING THEORY WITH REAL-WORLD APPLICATION

Linguistics is not confined to the ivory towers of academia. It is a discipline deeply intertwined with everyday life, affecting education, law, health, technology, justice, and more. By applying linguistic knowledge to real-world contexts, linguists help solve practical problems, advocate for marginalized communities, and enhance communication in a rapidly changing world. As this volume has shown, understanding language from multiple dimensions, sound, structure, meaning, context, variation, and usage, equips us with the tools to navigate and

improve the world we live in. In this light, linguistics matters more than ever. It is not only about understanding how language works but also about using that understanding to foster equity, inclusion, and meaningful social change. Moreover, in an increasingly globalized and multilingual world, linguistics serves as a bridge across cultural and linguistic divides. From preserving endangered languages to designing accessible technology and supporting inclusive education, linguistic research and practice empower individuals and communities alike. It reminds us that language is not only a tool for expression but also a vessel of identity, tradition, and knowledge.

Looking ahead, the relevance of linguistics will only continue to grow. As societies become more interconnected and communication technologies evolve, the demand for linguistic insight grounded in both theory and practice will remain vital. Whether in shaping public policy, developing ethical AI systems, or promoting intercultural dialogue, linguistics stands as a powerful force for understanding and improving the human experience.

Furthermore, the rapid advancement of digital communication platforms and artificial intelligence creates new frontiers for linguistic research. Linguists are uniquely positioned to guide the ethical design of language technologies, ensuring that they are inclusive, culturally sensitive, and accessible to diverse populations. This evolving landscape challenges linguistics to adapt and innovate while maintaining a commitment to human-centered communication.

Finally, the ongoing challenges of language endangerment and social inequality highlight the urgent need for linguistics to engage with communities directly. Collaborative approaches that respect and elevate local knowledge foster sustainable language revitalization and promote social justice. In this way,

linguistics not only analyzes language but also actively contributes to preserving the rich diversity of human expression for generations to come.

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AUTHOR'S PROFILE

Andreas Noreewec
is a Lecturer in the Division of Linguistics and Modern Languages at the University of Papua New Guinea (UPNG), based in Port Moresby. He is currently pursuing a PhD in Linguistics at Universitas Sebelas Maret, Indonesia. He holds a Master's degree in Language Education from Yogyakarta State University (UNY) and a Bachelor's degree in Linguistics from UPNG. His research interests lie in both Descriptive and Applied Linguistics, with a particular focus on Translation, Sociolinguistics, Semantics, and Pragmatics. He is especially interested in how meaning is constructed in context, the pragmatics of speech acts, and the sociolinguistic dimensions of language use in Papua New Guinea.

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