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Language: Essential Terminology

LEARNING OUTCOMES

At the end of this chapter, you will be able to...

- Articulate the difference between the descriptive and prescriptive approaches to language study.
- List the main theories related to the study of language, including the structuralist and generative models.
- Explain linguistic terms such as arbitrariness, discreteness, prevarication, infinite productivity, and displacement, among others.
- Define in general terms the main subfields of linguistics, such as phonetics, phonology, morphology, syntax, and semantics, among others.
- Discuss in more detail a critique of the Chomskyan (generative) model.
- List the main scholars in the development of Portuguese linguistics.

1.1 Introduction

Language is one of the most intricate and varied systems in human society. It plays a crucial role in preserving oral and written traditions, shaping cultural identity, and reflecting human diversity. Depending on its function, language has been described as a means of communication, a vehicle for self-expression, and a tool for organizing thought.

We rely on language both in practical situations, such as accomplishing tasks at work, and in more personal interactions, where it helps us build relationships with others, whether they are familiar or distant. Throughout history, language has influenced major global events, from declarations of war to peace agreements, and it remains central to artistic expression in literature, music, film, and theater.

Even when language is not the primary medium of artistic creation, the interpretation of art and music often relies on linguistic representation. Interpreting the painting *Abaporu* by Tarsila do Amaral or *War* by Paula Rego, for instance, involves constructing a subjective narrative that is articulated in words. Moreover, humans use language to talk about language! This is called **metalinguistics**. Given its fundamental role in human cognition and society, language has been extensively studied from multiple perspectives, including historical, philosophical, and biological viewpoints.

From the outset, it should be noted that humans have an innate capacity for developing language. Biological functions such as breathing, chewing, and swallowing are performed by using a particular set of organs: the lungs, mouth, nose, teeth, etc. However, these organs were also adapted to produce language by humans (O'Grady et al., 2017). Any internet search of the phrase

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“speech organs” will yield images of the parts of the body that show these biological functions (Figure 1.1). One can identify that air originating in the lungs passes through the trachea and the larynx, and actual sounds are produced and heard. These sounds are further modified if the velum (also known as the soft palate) is lowered and air passes through the nasal cavity, producing nasal sounds. Consonantal sounds are further produced by blocking or restricting the air flow in the oral cavity, so that the teeth, tongue, and lips participate in producing quite different sounds. More details about how these sounds are produced and perceived are explained in Chapter 4.

But “language” should not be defined only by the oral languages described in the previous paragraph. ASL (American Sign Language) and LIBRAS (*Língua Brasileira de Sinais* – “Brazilian Sign Language”) are linguistic systems that have syntax and morphology just like traditional oral languages. This is referred to as the **multimodality** of language (Fromkin et al., 2018). To be sure, human beings have been able to develop ways of communicating that are not restricted to the oral modality. Indeed, sign languages are linguistic systems that have shown historical development, dialectal variation, and change.

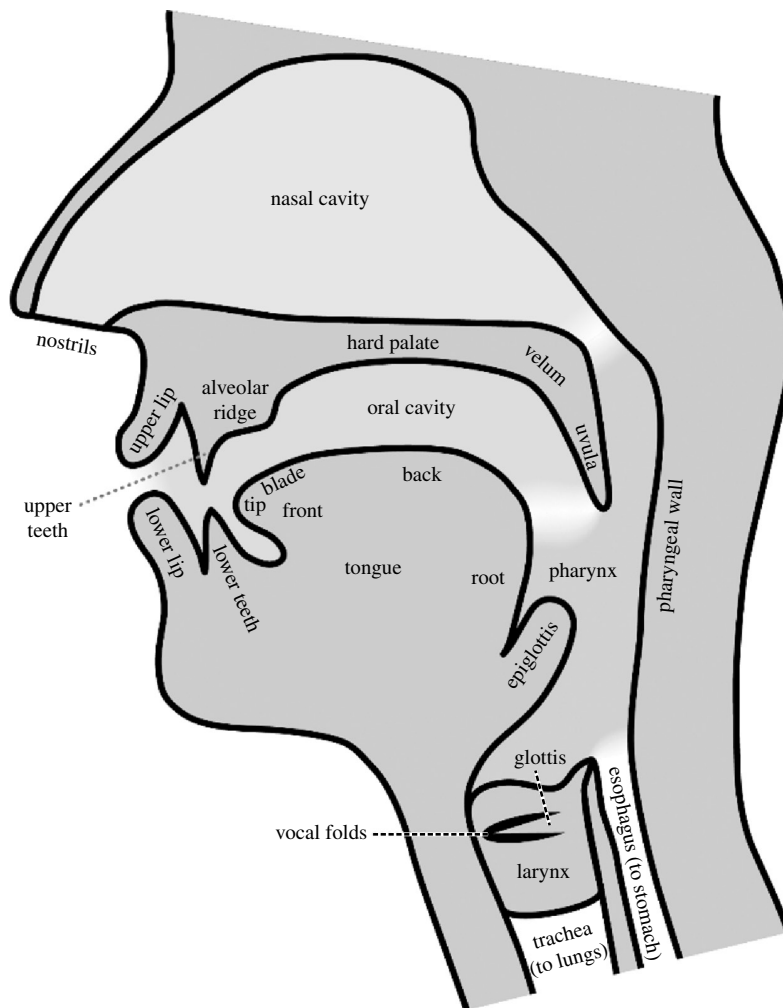


Figure 1.1 Speech organs (midsagittal view). *Source:* From CampusOntario Press (2022)/Catherine Anderson/Metadata/CC BY-SA 4.0.

One might argue that computer languages are also languages. However, JavaScript and Python, for example, are computer languages used to create code and should not be human languages. To put it simply, they are not used for human communication, social interaction, or self-expression.

Language is so deeply embedded in daily life that an entire field is dedicated to its study: **linguistics**. Researchers in this area employ a wide range of methods and analytical frameworks to examine different aspects of language. **Historical linguists** are scholars who trace the development and evolution of languages over time. It will be shown in this book that Portuguese has its origins in Latin, and it became the language of many nations due to economic and social expansion. **Cognitive linguists** are particularly interested in how language shapes mental processes, including grammar and meaning. Closely related, **psycholinguists** opt to spotlight the relationship between linguistic behavior and psychological processes, including second language acquisition. This volume does not focus in depth on the issue of the acquisition of Portuguese as a second language, but it mentions issues related to the acquisition of its grammatical structures. **Sociolinguists** focus on how languages vary and change depending on social contexts and familial settings. This book highlights how Portuguese is a multifaceted language in part because of social developments and circumstances. Finally, the emerging field of **computational linguistics** combines computer science, linguistics, and AI tools to understand language-related tasks in digital environments. In short, the variety of linguistic approaches reflects the many ways language connects to human experience and its diverse properties.

Section 1.1 Comprehension Checks

- 1.1.1. True or false? Human language is used for communication and social interaction only.
- 1.1.2. What are the names of some organs used in the production of sounds?
- 1.1.3. Complete the sentence: linguistics can be defined as the scientific study of _____.
- 1.1.4. True or false? Humans have an innate capacity to produce language even if not in the oral modality.
- 1.1.5. What are two analytical frameworks or approaches used by linguists?

Section 1.1 Discussion Questions

- How does the concept of metalinguistics illustrate the uniqueness of human language compared to nonhuman communication systems?
- In what ways do sign languages like ASL and LIBRAS challenge traditional definitions of what counts as a “language”?

1.2 Approaches to Language Study

This chapter will explore the many characteristics of language, considering the most recent theoretical approaches and the Portuguese language. First, it is important to highlight that the modern study of language is rooted in a **descriptive** approach and not on the classical **prescriptive** stance. In other words, modern scholars have moved away from the notion that there are “correct ways”

of expressing ideas, in both written and oral formats. The following is a comprehensive view of the theoretical approaches and the characteristics of language.

- **Structural Linguistics** (Saussure, 1916; Bloomfield, 1933): This view emphasizes arbitrariness, displacement, and discreetness as some important features of language.
- **Generative Grammar** (Chomsky, 1957): This approach explains notions such as systematicity and recursion (infinite productivity) in language.
- **Functional (usage-based) Models** (Bybee, 1985): This approach explains cultural transmission and social interaction and used frequency to explain variation and change.

Aside from the approaches to language study, there are **subfields of linguistics**. From the smallest elements to the more complex ones, the following is a list of the areas of study that correspond to some of the chapters in this volume.

- **Phonetics** – the area of study that focuses on the perception and production of speech sounds.
- **Phonology** – the area of study that focuses on the contrastive relationships among speech sounds.
- **Morphology** – the area of study that concentrates on the internal structure of words, including how words are formed and categorized.
- **Syntax** – the area that focuses on the organization of words and phrases in sentences and their hierarchical relations.
- **Semantics** – the area that focuses on the connection between meaning and form. There are additional subfields such as lexical semantics and formal semantics.
- **Pragmatics** – the area of linguistics that focuses on how context influences meaning in communication.

Each of these subfields of linguistics was developed over the years in relation to these theoretical approaches. For instance, structuralism established a systematic approach to phonology and syntax but overlooked meaning and context. Generativists revolutionized syntax and formalized phonology but treated semantics and pragmatics separately. Finally, usage-based models integrated cognition, frequency, and social interaction, emphasizing meaning and usage.

Section 1.2 Comprehension Checks

- 1.2.1. What is the name of the classical approach to the study of language where correctness is emphasized?
- 1.2.2. Complete the sentence: modern linguistics is based on the _____ approach that focuses on how language users really communicate.
- 1.2.3. True or false? The study of how sounds are perceived and produced is called phonology.
- 1.2.4. What was the main subfield of the generative approach?
- 1.2.5. Complete the sentence: morphology is the study of how words are _____.

Section 1.2 Discussion Questions

- Why do modern linguists reject the prescriptive approach, and how might this affect language education in schools?
- How do different subfields of linguistics complement each other when analyzing a single language, such as Portuguese?

1.3 Characteristics of Language

1.3.1 Arbitrariness

When we start thinking about language, one of the mysteries we are confronted with is the fact that words refer to specific ideas for no particular reason at all. For example, the word *mesa* refers to “the idea of table” in Portuguese. This notion is called **arbitrariness**, and it means that there is no direct connection between the selection of sounds and the meaning of the resulting word in a language. The fact is most words in any language do not have a strict correlation between meaning and phonetic representation. To be sure, the fact that a word such as *livro* (“book”) is composed of that sequence of sounds in Portuguese is a completely random occurrence. It could be argued that this is, in fact, one of the main reasons why it is so hard to learn vocabulary in a second language!

1.3.2 Iconicity

Until recently, scholars believed that only a small subset of words had a strict relationship between meaning and sound. These curious words are called **onomatopoeia**. In Portuguese, some examples are *cocoricó* for the sound of the rooster or *tchibum* for the sound of someone splashing in a pool. But the reality is that there are other closer sound-meaning relationships. The term **iconicity** describes a situation in which language users can attest to the meaning of words based on their sounds. These sound-meaning associations have been determined to exist across thousands of unrelated languages (Blasi et al., 2016). Prominent among them is the sound of the vowel [i], which is associated with smallness, or the idea of “fullness” normally associated with consonants [p] and [b]. It is possible to assume that most non-native speakers of Portuguese, for example, given the set of words that describe a knife (a) <*afiada*> and (b) <*cega*>, would correctly guess that (a) stands for “sharp” while (b) means “dull.” In a remarkable study on documented patterns of iconicity, Winter et al. (2022) discovered that the most commonly occurring /r/ variant in the world was strongly associated with “roughness” in texture, thus connecting sound and touch across universal languages. These nonarbitrary examples seem to play a crucial role in our understanding of the connection between human evolution and language acquisition.

1.3.3 Systematicity

It is accepted that language users can produce language that they have never heard or seen before. To be sure, it is impossible to store every linguistically acceptable formulation of language in our minds. Therefore, human children have a predisposition to learn language in a systematic way. This is, of course, referred to as **systematicity**. According to the generative approach of language acquisition (Akmajian et al., 2001), human children can internalize the grammatical rules, not individual sentences. This is evident by their grammar mistakes, which follow the syntactical and morphological patterns of the language. For example, at a certain stage of their language acquisition, Portuguese-speaking children might say *eu sabo*, instead of *eu sei*, to express the present tense verb “I know.” They are following the morphological rule of dropping the <*er*> at the end of the verb <*saber*> (“to know”) and adding the vowel <*o*> to create that first-person present tense form.

Likewise, Portuguese-speaking children might articulate the phrase *mais pequeno* instead of the word *menor* for the descriptive word “smaller,” because they are following the grammatical rule of adding the word *mais* before adjectives to express the comparative adjective. As they progress through the stages of first-language acquisition, they will eventually produce the exceptions to these internalized morphological rules.

1.3.4 Creativity

Related to the idea of systematicity, human linguistic knowledge is not simply a repository of all the possible sentences in existence. **Creativity** in language (also referred to as generative syntax) is a concept that strengthens the notion that language is not just a set of fixed expressions. Indeed, we instinctively understand that one can create novel sentences that were never uttered or heard before. Pinker (1994), in his comprehensive book on human cognition and language, summarizes research from linguistics and cognitive psychology, presenting language as a natural, inborn ability that explains our capacity for creating and understanding novel utterances.

By contrast, nonhuman animals are generally incapable of creating or producing entirely new sentences. Researchers of animal (nonhuman) communication have completed studies with parrots (Alex, the African Grey) and dolphins, among others, with varying results. Primates such as the gorilla Koko learned sign language to produce combinations such as “tiger horse” to mean “zebra” (Akmajian et al., 2001: 512), and Kanzi, the bonobo chimpanzee, used a lexigram board to spontaneously produce “action-location” combinations (p. 513). However, the general consensus is that, when compared to human children, nonhuman animals are able to engage in limited recombinations of linguistic signals that are context-dependent and are not evidence of the creation of new words or phrases.

1.3.5 Cultural Transmission

From the outset, it should be mentioned that Universal Grammar is the information in our brains that consists of “principles and parameters that enable the child to deduce a grammar from primary linguistic data” (Akmajian et al., 2001: 590). So, human children acquire the languages spoken around them, regardless of their biological heritage. For instance, a child born to Portuguese-speaking parents in Angola who is raised by English speakers in the United States will learn English, not Portuguese. Therefore, language is learned through social interaction rather than being genetically inherited.

Moreover, differently from nonhuman animals, it is possible to use language to transmit knowledge across time and space. Oral language is passed through generations of humans via stories and myths and transmitted long after the originators of these traditions are gone. Similarly, written language preserves linguistic information in archival format, be it in ancient cuneiform tablets or the modern digital records.

Section 1.3 Comprehension Checks

- 1.3.1. True or false? Only a small subset of words in a language has a strict relationship between meaning and sound.
- 1.3.2. What is the term used by linguists to describe a more general situation in which word-meaning associations are more closely identified?
- 1.3.3. True or false? Systematicity refers to the fact that children learn language by imitation.
- 1.3.4. True or false? Nonhuman animals can create new words and phrases.
- 1.3.5. Complete the sentence: language is learned via ____ rather than being genetically inherited.

Section 1.3 Discussion Questions

- How does the concept of iconicity challenge the traditional view of language as entirely arbitrary?

- What does the study of systematicity in child language acquisition suggest about the human brain's role in language learning?

1.4 More Characteristics of Language

1.4.1 Discreteness

The idea that language consists of distinct units (sounds, morphemes, words) that combine systematically is called **discreteness**. In Portuguese, one can combine the particle /im-/ to adjectives such as *parcial* (“partial”) and arrive at the opposite of that word, *imparcial* (“impartial”). This process can be repeated with other adjectives to achieve the same purpose. Individual phonemes are discrete units that can be combined and shuffled to produce different words in Portuguese. For example, words that include the consonantal sounds /b/, /k/, /l/, and /t/ and the vocalic sounds /o/ and /a/ can be combined in different sequences to form words such as *bola* (“ball”), *cola* (“glue”), *lata* (“can”), and *local* (“local”).

1.4.2 Displacement

While nonhuman communication (i.e., animal communication, such as communication between dolphins and primates) can convey messages, it is dependent upon the immediate context. For example, a honeybee will fly in a particular pattern to indicate the direction and approximate distance of the nearest source of food. But it cannot express to the hive if it will fly to that location in the next few minutes. By contrast, human beings can talk about events in the past, and utter expressions such as “I went to the store to get milk,” or the future, such as “I will go out to lunch tomorrow,” even if there is nothing specific about the immediate context that would have provoked such declarations. This is called **displacement**. In sum, human language does not have to conform to any external stimuli to be understood, as it is true with communication between even highly intelligent animals.

1.4.3 Prevarication

Another curious aspect of human language (in contrast to nonhuman language) is the ability of humans to lie about the immediate and distant realities. This is called **prevarication**. Indeed, it is possible to communicate with other language users without telling the truth, to hypothesize, or to wonder. That said, there have been documented instances of primates using deception strategies, exhibiting at the very least a sophisticated form of social interaction. For example, a study by Byrne & Whiten (1988) reports on capuchin monkeys that use false alarm calls or misleading signals to distract others, to gain access to resources at another location. In other words, they have used their language to clearly deceive others in the community. While these animal linguistic behaviors may not be regarded as “lying” in the human, verbal sense, they do represent an ability to intentionally manipulate the perceptions of others.

1.4.4 Recursion

Also, central to Chomskyan theory of language is the notion of **recursion** or infinite productivity. According to this accepted view, language structures are created in a hierarchical pattern, in which one constituent can be expanded into more of the same, without losing the grammatical nature of the sentence. For example, in Portuguese, a simple noun phrase such as example (1)

(1) *o livro de linguística*

“the linguistics book”

which can be uttered and be understood without more additions. However, more phrases can be added to the end of the original noun phrase, *ad infinitum*, such as example (2)

(2) *o livro de linguística para alunos de graduação*

“the linguistics book for undergraduate students”

and even a more detailed example such as (3)

(3) *o livro inovador de linguística moderna para alunos de graduação publicado este ano por uma autora brasileira...*

“The innovative modern linguistics book for undergraduate students published this year by a Brazilian author...”

All these examples can be expanded, without losing grammaticality or the ability to make sense. Of course, the limitations related to the use of such long sentences in discourse will be addressed in Chapter 8.

Section 1.4 Comprehension Checks

- 1.4.1. Complete the sentence: _____ refers to the fact that language is made up of individual, discrete sounds and particles.
- 1.4.2. What is the word used to describe the fact that humans can talk about facts unrelated to the immediate context?
- 1.4.3. True or false? Prevarication is an aspect of human language that is not observed among nonhuman animals.
- 1.4.4. Complete the sentence: central to the idea of generative grammar is that language users can add constituents to the end of sentences, *ad infinitum*. This is called _____.

Section 1.4 Discussion Questions

- Why might discreteness be considered a foundational property of language, and how does it interact with other features like recursion?
- In what ways do displacement and prevarication illustrate the cognitive complexity of human language compared to animal systems?

1.5 Beyond a Generative View of Language

The very nature of scientific thought requires that we practice continuous questioning, instead of accepting immutable, unshakable beliefs in established ideas. Thus, the notion of intellectual, recursive examination logically holds true for linguistics as well. There are important critiques of the Chomskyan (generative) model of language, comprehensively mentioned in Hualde et al. (2021) and supported by the added examples in Portuguese.

First, proponents of generative grammar establish that the focus of linguistics should be **competence**, not **performance**. That is, the most relevant and fascinating part of language is the implicit knowledge shared by its users, not evidence of its use. It is argued that performance is filled with repetition, hesitations, and misunderstandings, which are typical of human interaction. However, these very phenomena are of the utmost interest to sociolinguists who focus on the social context in which language is produced. For those scholars, the observable phenomena in social interaction can point to fascinating information about language evolution and change.

Second, **introspection** is the preferred method of analysis for Chomskyan linguistics. Although a valuable method, it is not the only one available to scholars of language. Linguists can use surveys administered amongst speakers of different variants to corroborate proposed sociolinguistic theories. Data from social media, for example, and its innovative use of language, can also be the focus of those who study language.

Additionally, it is generally accepted that the human language is **innate**. However, the focus on this internal cognitive mechanism downplays the importance of the external, lived experience of speakers. For some linguists, it is more stimulating to study societal changes *vis-à-vis* language change, such as the rise of virtual interactions and their impact on language, rather than the internal rules of language.

Finally, there is the Chomskyan idea, fully supported by research, that the human language ability is distinct and apart from the human cognitive ability in the general sense. That is, the ability to process language is inherently human, and that should be the focus of linguistic inquiry. However, advances in computational linguistics, following connectionist models, for example, may provide fresh and exciting information about linguistic knowledge itself.

Section 1.5 Comprehension Checks

- 1.5.1. True or false? Hesitations and misunderstandings are the raw material for the generative model.
- 1.5.2. Complete the sentence: the innate mechanism can ____ the importance of the external experience of the speaker.
- 1.5.3. True or false? The most recent innovations in computational linguistics (Open AI, etc.) challenge the notion that language is an inherently human experience.

Section 1.5 Discussion Questions

- How do sociolinguistic and computational approaches broaden our understanding of language beyond the generative model?
- In your opinion, should linguistic research prioritize internal competence (as Chomsky argued) or observable performance? Why?

1.6 Development of Portuguese Linguistics

Portuguese linguistic thought has developed through philological, structuralist, sociolinguistic, and pedagogical traditions, shaped by key scholars across both Portugal and Brazil. In the 19th and early 20th centuries, figures such as **Francisco Adolfo Coelho** (1847–1919) and **José Leite de**

Vasconcelos (1858–1941) laid the groundwork for dialectology and historical Romance linguistics. Coelho's (1880) work on dialects and creole languages (including Macanese Patuá) opened new fields of inquiry, while Vasconcelos founded the *Revista Lusitana* and produced some of the earliest linguistic surveys of Portuguese varieties across the Iberian Peninsula.

In the same period, lexicography emerged as a national project in Brazil. **Antônio Houaiss** (1915–1999), a prominent philologist, diplomat, and cultural figure, played a major role in standardizing Brazilian Portuguese through his work on the *Dicionário Houaiss da Língua Portuguesa* (2001) and his advocacy for the 1990 Orthographic Agreement. His contributions bridged linguistic scholarship and public policy, cementing his place in 20th-century language planning.

By the mid-20th century, a structuralist paradigm took hold, especially in Brazil. **Joaquim Mattoso Camara Jr.** (1904–1970) was a key figure in importing structuralist methodologies, notably in phonology, through works such as *Estrutura da Língua Portuguesa* (1953). In Portugal, **Luís Lindley Cintra** (1925–1991) brought structural rigor to dialect classification and co-authored the influential *Nova Gramática do Português Contemporâneo* with Celso Cunha.

Running parallel to these developments, **Aryon Rodrigues** (1925–2014) advanced the study of Brazil's indigenous languages, focusing on the Tupi and Macro-Jê families. His typological and comparative research expanded the boundaries of Portuguese linguistics by placing it within a multilingual national context, advocating for the documentation and revitalization of indigenous languages long excluded from official discourse.

From the 1980s onward, Brazilian linguistics diversified further through new theoretical lenses. **Ataliba Teixeira de Castilho** (b. 1937) led corpus-based historical projects such as the *Projeto para a História do Português Brasileiro (PHPB)* and proposed a dynamic model of spoken Brazilian Portuguese (Castilho, 2008). At the same time, **Leda Bisol** contributed foundational work in generative phonology, particularly in stress and syllable structure, and **Mário A. Perini** challenged prescriptive norms through descriptive, functional grammars grounded in actual language use.

Variationist sociolinguistics gained traction with scholars such as **Anthony Naro** and **Martha Maria Scherre**, whose quantitative studies on verbal agreement and subject expression helped establish Brazilian Portuguese as a rich site for empirical research on language change. In Portugal, **Maria Helena Mira Mateus** co-authored the comprehensive *Gramática da Língua Portuguesa* (1990), advancing structural analysis of European Portuguese phonology and syntax.

In more recent decades, applied linguistics and sociolinguistic engagement have come to the forefront. **Ana Maria Carvalho**, working primarily in the United States, has been central to research on bilingualism, language contact, and linguistic identity along the Brazil–Uruguay border. Her work on Uruguayan Portuguese and border speech varieties challenges conventional language classifications.

Together, these scholars form a lineage of inquiry that spans descriptive, theoretical, and applied domains, illustrating the evolution of Portuguese linguistic thought from philological roots to contemporary sociocultural relevance.

1.7 Chapter Summary

Language is an essential aspect of human society, serving as a medium for communication, cultural preservation, and cognitive organization. Its complexity is evident in both oral and sign languages, which exhibit systematic structures in phonetics, morphology, syntax, and semantics.

Linguistics, the scientific study of language, explores various dimensions of language evolution, cognition, and social interaction through multiple theoretical frameworks, such as structuralism,

generative grammar, and functionalist and variationist models. These approaches have shaped subfields like phonology, pragmatics, and computational linguistics, each offering insights into the mechanisms and functions of language. Key characteristics of language include arbitrariness (the lack of inherent connection between sound and meaning), systematicity (the structured nature of language acquisition), and creativity (the ability to generate novel sentences). Furthermore, linguistic features such as displacement (referring to events beyond the immediate context), discreteness (the combinatory nature of language elements), and recursion (the hierarchical expansion of structures) distinguish human language from animal communication.

While the generative model of language, proposed by Chomsky, has been influential in emphasizing innate linguistic competence, alternative perspectives highlight the significance of social context, language performance, and empirical data collection. Sociolinguists argue that studying real-world language use, including discourse patterns and digital communication, offers valuable insights into language evolution. Additionally, computational linguistics and connectionist models challenge the idea that language is separate from general cognition, instead viewing it as part of broader cognitive and social processes.

The history of Portuguese linguistic inquiry can be traced back to the 19th and early 20th centuries with Adolfo Coelho and Leite de Vasconcelos, dialectologists and Romance linguists. The structuralist approach was brought in by Mattoso Camara (1953) in Brazil, and in Portugal, the same rigor can be traced to Lindley Cintra & Cunha (2002). As far as research into Indigenous languages are concerned, the most prominent name is Aryon Rodrigues (1986), who advanced Portuguese typological studies. In the late 20th century, generative scholars such as Bisol (1996) and prominent linguist Perini (1995) advanced linguistic thought as well. In Portugal, Mateus (1990) produced important works in structural phonology and syntax. Later, variationist sociolinguists such as Scherre (2001) and Carvalho (2004) completed essential research on variation, bilingualism, and language contact situations.

As linguistic research advances, incorporating interdisciplinary methodologies allows for a more comprehensive understanding of language's dynamic nature, bridging cognitive, cultural, and technological influences.

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Answer Keys

Section 1.1

- 1.1.1. False: it is used to self-express and to talk about language itself; the metalinguistic aspect.
- 1.1.2. Larynx, teeth, nasal cavity, among others.
- 1.1.3. Language.
- 1.1.4. True.
- 1.1.5. Sociolinguistics, cognitive linguistics, among others.

Section 1.2

- 1.2.1. Prescriptive.
- 1.2.2. Descriptive.
- 1.2.3. False: that is phonetics. Phonology is about the relationship between the sounds.
- 1.2.4. Syntax.
- 1.2.5. Created and categorized.

Section 1.3

- 1.3.1. True, these are called onomatopoeia.
- 1.3.2. Iconicity.
- 1.3.3. False: children learn by internalizing grammar rules.
- 1.3.4. False: the most nonhuman animals can do is the recombining sets of words based on immediate context.
- 1.3.5. Social interaction.

Section 1.4

- 1.4.1. Discreteness.
- 1.4.2. Displacement.
- 1.4.3. True. Although some primates have been observed in highly deceptive social tactics.
- 1.4.4. Infinite productivity or recursivity.

Section 1.5

- 1.5.1. False: it is the opposite; the generative model relies on grammatical sentences.
- 1.5.2. Downplay.
- 1.5.3. True.