



Semantic Ambiguity in English: A review on Lexical, Structural, and Scope Challenges in Communication

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الغموض الدلالي في اللغة الإنجليزية: مراجعة للتحديات المعجمية والبنوية والنطاقية في التواصل

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Abstract:

Due to the possibility of various meanings, semantic ambiguity particularly in English presents a serious obstacle to efficient communication. This study investigates key types of semantic ambiguity linguistic, structural, and scope and their influence on comprehension. Lexical ambiguity occurs when words have multiple meanings or sounds, leading to misunderstandings in both speech and writing. Structural ambiguity happens when sentence structure allows for different interpretations, while scope ambiguity arises from shifts in meaning related to negation and qualification. This research reviews past studies and theories, such as the exhaustive access hypothesis, which downplays context, and the context-dependency hypothesis, which stresses its importance in resolving ambiguity. The study emphasises the intricate relationship between context and meaning by examining examples like homonyms, polysemy, homographs, and homophones. Findings indicate that while ambiguity can disrupt understanding, background knowledge and contextual clues often enable listeners and readers to grasp intended meanings. Additionally, ambiguity is sometimes purposefully employed in literature, highlighting the critical role of context in resolving semantic ambiguity in communication.

Keywords: Lexical Ambiguity, Structural Ambiguity, Scope Ambiguities, Vagueness and Deixis.

الملخص

نظرًا لإمكانية وجود معانٍ متعددة، يشكل الغموض الدلالي وخاصةً في اللغة الإنجليزية عقبة جديّة أمام التواصل الفعّال. يحقق هذا البحث في الأنواع الرئيسية للغموض الدلالي، مثل الغموض المعجمي، والغموض البنوي، وغموض النطاق، وتأثيرها على الفهم. يظهر الغموض المعجمي عندما تحتوي الكلمات على معانٍ أو أصوات متعددة، مما يؤدي إلى سوء الفهم في الكلام والكتابة. يحدث الغموض البنوي عندما يسمح هيكل الجملة بتفسيرات مختلفة، في حين ينشأ غموض النطاق من التغييرات في المعنى المرتبطة بالنفي أو التحديد. يستعرض هذا البحث دراسات ونظريات سابقة، مثل فرضية الوصول الشامل التي تقلل من أهمية السياق، وفرضية الاعتماد على السياق التي تؤكد على أهميته في حل الغموض. من خلال دراسة أمثلة مثل الترادف الصوتي، وتعدد المعاني، والتشابه الكتابي، والألفاظ المتجانسة صوتيًا، يسلط البحث الضوء على العلاقة المعقدة بين السياق والمعنى. تشير النتائج إلى أن الغموض قد يعطل الفهم، لكن المعرفة السابقة ودلائل السياق غالبًا ما تمكن المستمعين والقراء من استيعاب المعاني المقصودة. علاوة على ذلك، يُستخدم الغموض أحيانًا عمدًا في الأدب، مما يبرز الدور الحاسم للسياق في حل الغموض الدلالي في التواصل.

الكلمات المفتاحية: الغموض المعجمي، الغموض في تركيب الجملة، الغموض في النطاق، الغموض وعدم التحديد، الإشارة.

1-Introduction

Linguistic ambiguity—the existence of words, phrases, or sentences with multiple interpretations—is a complex and intriguing aspect of human language, crucial to how we communicate and understand meaning. Its impact on comprehension has been a central interest for linguists, cognitive scientists, and educators, as exploring how ambiguity affects interpretation provides insights into both the capabilities and constraints of human cognition

and communication. Ambiguity can occur at various language levels, from single words with multiple meanings (lexical ambiguity) to whole sentences that allow for different interpretations based on their grammatical structure (syntactic ambiguity). These layers of ambiguity are more than linguistic curiosities; they fundamentally shape how meaning is constructed and conveyed, affecting everything from everyday conversation to complex academic discourse. For example, the sentence "I saw the bank this morning" By looking at the sentence, we note that there is a clear ambiguity in the meaning. That is to say, this sentence can be interpreted from different points of view, context and the moment in which this sentence was said remain the main basis for understanding it.

Furthermore, the ambiguity in this sentence results from the word [bank], because it has several meanings like; blood bank, money institution, and the side of a river. All of these definitions of "bank" are found in the dictionary when we look up its meaning in Longman (2008). In addition, ambiguity arises when there is a word or construction of multiple meanings as defined by Crystal (2008:22) as "expresses more than one meaning" even the definition of ambiguity is that being ambiguous. When there is a phrase, a sentence, or a resolution that is not clear in meaning (not explained explicitly) and can be interpreted in several ways, this is called ambiguity in semantics. The most important characteristic of ambiguity is uncertainty. Generally, the concept of ambiguity is often associated with vagueness. However, to prevent misunderstanding, ambiguity allows for multiple possible interpretations and can help clarify facts. Therefore, the purpose of this paper is to shed light on explaining the several types of ambiguity by reviewing and synthesizing research findings on the influence of linguistic ambiguity on comprehension. By investigating the processes involved in resolving ambiguity and the potential obstacles it creates for clear communication, this analysis aims to enrich our understanding of the different types of linguistic ambiguity and highlights strategies to enhance clarity in both written and spoken language. Additionally, offering insights into how ambiguity can be thoughtfully managed or minimized to support comprehension in varied communicative settings.

2-Literature review

It is difficult to communicate when there is no understanding of the intended meaning of the given speech. It is known that human language is characterized by diversity and creativity. As a result of this, we cannot expect to understand every word directly and clearly. In addition, some flaws in the linguistic system cannot be neglected, for example, the linguistic ambiguity that makes people lost and unable to deduce the meaning. Fundamentally, many linguistic utterances are not specific or linked to an explicit meaning. This is due to the ambiguity of words that require several explanations which make the listeners distracted and thus difficult to understand. In general, this phenomenon is a common feature in all languages all over the world. A common definition of ambiguity is the fact that the word carries several conflicting meanings; that is, each meaning is completely different from the other meaning which leads to difficulties in word comprehension. Chierchia & McConnell (1990: 32) believed that "sentences can be understood in multiple ways due to a single ambiguous word, different structural interpretations leading to structural ambiguity, a combination of both lexical and structural ambiguities, or an unclear semantic scope". Cruse (1986) categorizes ambiguity into four types: pure syntactic ambiguity, quasi-syntactic ambiguity, lexico-syntactic ambiguity, and pure lexical ambiguity. Kess (1992) groups ambiguity into three types: lexical ambiguity, surface structure ambiguity, and deep (underlying) structure ambiguity. Meanwhile, Fromkin et al. (2017) classify ambiguity into lexical and structural types, with structural ambiguity also referred to as grammatical ambiguity. In summary, ambiguity can generally be divided into two main types: lexical and structural ambiguity.

The written word can certainly pose distinct difficulties for understanding, mainly because of intricate sentence forms and the lack of prompt contextual or nonverbal signals. Vagueness in written communication can arise from several origins, such as polysemous terms (words that have more than one meaning), syntactic arrangements that permit various interpretations, and mispositioned or ambiguous modifiers. When such ambiguities arise, readers might find it challenging to grasp the intended meaning, which can hinder understanding and result in misconceptions. In contrast to spoken language, which allows for immediate clarification, written language frequently requires readers to deduce meanings independently, complicating the resolution of unclear elements (Ehrlich & Rayner, 1981; Ferreira et al., 2001). This challenge is particularly evident in texts where clarity is crucial, like academic papers, legal texts, and technical guidelines, where even minor ambiguities can significantly change the reader's comprehension. From these observations, a research question arises: "In what ways does lexical and structural ambiguity in written text influence the comprehension process in various contexts and with differing levels of linguistic proficiency?"

2-2Research question

How significantly does linguistic ambiguity impact comprehension?

This question encourages investigation to the types of ambiguity assist in grasping the meaning. Tackling this question can improve comprehension of the mental processes engaged in reading and can guide optimal methods for effective communication in writing.

2-2-1 Lexical ambiguity

This type of ambiguity creates confusion in both written and spoken language. In writing, it appears when words have multiple meanings. In spoken, it occurs when different forms of a word share the same sounds (Hurford & Heasley, 1983). Additionally, two key factors contribute to this multiplicity of meanings. The first factor is homonyms; words that show a completely different meaning, but appear to share the same letters and sounds e.g. the word bank is a good example of homonyms. The second factor is polysemy; words that share the same "meaning and sounds, but there is a slight difference in the literal meaning in one way or another e.g. the word captain includes multiple interpretations, but all refer to the leader Cann (1993). To follow up, the spoken form of ambiguity is caused by homophones which express different meanings, Gerald (2000) noted that different forms of words can share identical sounds, creating ambiguity. Lexical ambiguity is divided into two frameworks: in written language, it arises due to homonyms and polysemy; in spoken language, it occurs because of homophones. Over the past 20 years, research on lexical ambiguity has focused on understanding how linguistic context influences meaning, especially since ambiguous words can impact comprehension (Small & Tanenhaus, 1988; McClelland, 1987; Simpson & Krueger, 1991; Swinney, 1979; Tabossi, 1988; Fodor, 1983).

In general, only four of these concepts are the frequently discussed issues by researchers in this field of semantics, because of their clear effect on ambiguity. The first one is a homograph. Homograph or heteronymy; includes words that appear the same with similar or identical letters, but at the same time, they are completely different in meaning e.g. the word lead as a verb and lead as a noun the word minute as a noun, and, minute as an adjective. Such words create ambiguity if they appear in a sentence without sufficient linguistic clues to clarify the intended meaning Basil (2011). The second one is homophones. This is demonstrated by the fact that the words have identical pronunciations but different spellings. This interpretation cannot include words that are not semantically related but still appear the same spelling and articulation such words should be treated as homonyms. For illustration, consider the following words as examples of homophones the word beer as (a kind of drink) and the word bier as (a stretcher) also the word cereal as (a kind of crop) and the word serial as (a part of the story) the word flour as (corn powder) and the word flower as (part of plant). Generally, homophones are often not ambiguous in their usual nature, because the meaning can be understood through writing, but the ambiguous part is in the spoken language. The listener gets confused in their understanding of the intended meaning. The third one is homonyms; many writers have made a mistake when they think that homonyms are words that have the same spelling (homographs) and words that have the same pronunciation(homophones). This interpretation is seen as failing to capture the true concept of homonyms. The idealistic theory distinguishes homonyms within the scope of polysemy. This theory is useful when recognizing that polysemy arises from the metaphorical use of words (Ndimele, 2007). To illustrate, consider the following examples of homonyms: *ball* (a round object used in games) vs. *ball* (an evening party), *bat* (a flying animal) vs. *bat* (a piece of wood), *date* (a period) vs. *date* (a type of plant), and *guy* (happy and lively) vs. *guy* (a homosexual person). All these examples can create ambiguity, especially if the linguistic context that clarifies the intended meaning is absent. The four examples are instances of polysemy, which McArthur (1996:715) defines as "words or other items of language with two or more senses." The term *polysemy* comes from the Greek, signifying "multiple meanings." In detail, *poly* means "many" and *semeion* means "sign," so polysemy describes situations where a single word has two or more different meanings (Jackson & Amvela, 2001:58). But we mustn't forget that words (polysemy) often carry a meaning that is related or includes similarities, and this is what distinguishes polysemy from homonyms Saeed (2008). Notice the following words: you will find something in common in the meaning despite the difference in the literal meaning; the word head is (a leader of a group) or as (a part of the human body) the word mouth as (a part of the human body) or as (a part of the bottle, river, etc.) the word glass as (reading class)or as (a drinking vessel). Furthermore, the ambiguity increases when other words appear next to polysemous words and they do not provide enough information to convey the required meaning of the sentences. Examine the following sentence to see the extent of ambiguity and confusion;" my classes have broken" until the meaning becomes clear, there is an urgent need to add other words to become clear, see the following addition in the previous example " my classes have broken so I could not read" or " my glasses have broken because the water is too hot".

2-2-3 Structural ambiguity

Hurford & Heasley (1983:128) define "structural ambiguity as a sentence carries several meanings as a result of the words that are linked together in several syntactic structures despite the clarity of the meaning of each word separately". Oaks (2010) also defined structural ambiguity which occurs when a sentence or phrase can be interpreted in multiple ways due to its syntactic structure. Structural ambiguity arises when a sentence can be understood in more than one way due to its syntactical structure, rather than the meanings of the individual words themselves. This type of ambiguity is a result of how the components of a sentence, such as words or phrases, are arranged. For example, the sentence "I saw the man with the telescope" can be interpreted as either (1) using a telescope to see the man, or (2) seeing a man who is holding a telescope. Similarly, "The chicken is ready to eat" can mean (1) the food is prepared for consumption or (2) the bird is ready to eat something. In the case of "She

found the book on the table," the ambiguity could be (1) discovering a book located on the table or (2) finding a book and placing it on the table. These examples illustrate how word order and sentence structure can lead to multiple interpretations depending on how the sentence is parsed (Cook, 2004; Cruse, 2000).

There is a type that includes an ambiguity of meaning, which is created from the combination of structural and lexical ambiguities. Usually, ambiguity is created as the result of words that have more than one meaning as well as the possibility of several grammatical structures of the sentence. As an illustration of the following example of the word "duck", this word is an ambiguous one that can show more than one meaning and more than one syntactic category. This word is interpreted as a verb with a meaning of lower "one's head quickly" and it is also interpreted as a noun with the meaning of the well-known swimming bird Longman UK (1998:459). By changing the grammatical category of the word duck, the structure of the sentence is affected, thus creating problems in comprehension. This type of ambiguity is not considered one of the basic types of ambiguity for some linguists such as Cann (1993), Hurford & Heasley (1983) and, Saeed (2008). This type is considered an extreme example of structural or lexical ambiguity, but other linguists such as Chierchia & McConnell (1990) have a different point of view in their analysis as this type is mentioned as a basic type of ambiguity because it is not appropriate to classify this type under the heading of any other type (lexical or structural).

2-2-4 Scope ambiguity

Scope ambiguity occurs in sentences where multiple elements can be related in different ways, resulting in more than one possible interpretation. This ambiguity often appears in sentences with quantifiers (like "every," "some"), negations, or modal verbs (such as "can," "must"), where it's unclear which element takes precedence over the others. (Cann, 1993).

Scope ambiguity occurs when there are multiple possible interpretations of the scope of quantifiers, negations, or other operators within a sentence, resulting in different potential meanings" (Partee, 1970). In this work, Partee discusses how sentences can exhibit scope ambiguity due to the interplay of quantifiers, negations, and other operators, leading to different interpretations depending on their scope arrangement. This concept is crucial in understanding how certain phrases or structures create multiple potential meanings.

2-2-4-1 Example of Scope Ambiguity

Sentence: "Every student didn't pass the exam". Explanation: This sentence is ambiguous due to two potential interpretations:

Negation has a broader scope: "Not every student passed the exam," meaning some students did not pass, but others did.

The quantifier has broader scope: "Every student failed the exam," meaning that none of the students passed.

scope ambiguity results in two different meanings based on whether "every student" or "didn't pass" takes precedence in the sentence.

This is the final type of ambiguity, which occurs due to the multiple interpretations of the semantic scope within a statement (Cann, 1993). More precisely, ambiguity does not stem from the words or sentence structure themselves. Instead, it arises from the undefined nature of the semantic scope, caused by other factors such as negation and qualification. The emphasis is typically on the surface structure of the sentence in cases of scope ambiguity, as the surface structure often differs from the deep structure in terms of meaning. This makes some linguists assume that the scope ambiguity does not show any structural difference on a deep level. Therefore, the distinct structure is not a clear indication of any structural ambiguity Chierchia & McConnell (1990). Moreover, scope ambiguity and structures are separate and different; in the interpretation of semantic scope, the syntactic structure is of no importance, and, the diversity of deep structures remains the same surface structure, which is distinguished from the distinctive surface structures regarding the ambiguity of structures. From this standpoint, scope ambiguity is a unique kind of ambiguity that should not be integrated into any type.

2-2-5 Vagueness versus Deixis

In language analysis, it's crucial to distinguish between vagueness *and* deixis since both are central to semantics and pragmatics, though they function differently in communication, since understanding both vagueness and deixis offers insights into how language meaning can be adaptable and heavily context-dependent.

2-2-5-1 Vagueness

Vagueness arises when a term, phrase, or expression lacks a precise meaning or clear boundaries. These terms often rely on interpretation and can be understood in multiple ways without a specific referent. Vagueness is defined as the loss of specificity and clarity in the translation of the intended meaning usually as a result of generalization Huang (2004). For example, words like "tall," "several," or "soon" are vague because their meanings can shift depending on context. Ludlow (2008) indicates that Vagueness occurs when a term has unclear boundaries, making it uncertain if it should be applied in certain situations, which allows for flexible interpretation and possible ambiguity. There is an example of Vagueness:

Statement: "She lives nearby." Explanation: The term "nearby" is vague because it does not define a specific distance, leaving room for interpretation. "Nearby" might mean just a few houses away, a block, or even a mile depending on individual perspective.

2-2-5-2 Deixis

Deixis includes words and phrases that require contextual details to be understood clearly. Also called "indexicals," deictic expressions depend on factors like speaker, location, or time for full meaning. Examples include pronouns (e.g., "I," "you"), time expressions (e.g., "now," "yesterday"), and spatial terms (e.g., "here," "there"). Mathews (1997) defined it as a condition associated with semantic reference. This is to say, the method used by individuals to give information about semantic reference through their thinking in terms of place, time, and utterances. Lyons (1977) defined Deictic expressions are terms that rely on context for their meaning, with their reference changing according to factors like the speaker, time, or location of the utterance. There is an example of Deixis:

Statement: "I'll meet you there tomorrow". Explanation: In this sentence, "I," "you," "there," and "tomorrow" are deictic elements. Understanding their meanings depends on the conversation's specific context, such as the people involved, the intended place, and the exact time. Table (1) summarizes the difference between vagueness and Deixis:

Table (1): Summary of comparison between vagueness and Deixis.

Feature	Vagueness	Deixis
Nature	Lacks precise boundaries	Relies on context for clarity
Example Terms	"Several," "soon," "tall"	"I," "you," "here," "now"
Interpretation	Flexible and subjective	Context-dependent and specific
Example Phrase	"She lives nearby."	"I'll see you there tomorrow."

3- Methodology

3-1 Research design

To give a detailed analysis, comprehensive synthesis, and in-depth evaluation of certain research issues, a systematic review is carried out. A systematic review's main goal is to compile primary research findings to answer a specific research question (Pollock & Berge, 2018). A systematic review is defined as "a review of existing research using explicit, accountable, rigorous research methods" by Gough et al. (2012:5). According to a different viewpoint, a systematic review entails finding, selecting, and combining primary research articles to provide a thorough assessment of a certain research subject (Oakly, 2011). A systematic review offers a thorough overview of research based on predetermined criteria, in contrast to a literature review, which exposes knowledge gaps and summarises what is already known about a topic. It makes an effort to find, choose, gather, and evaluate evidence about a certain research subject.

3-2 Discussion and Findings

To provide a thorough response to the research question, it is crucial to examine the body of literature and data that identifies the most important elements, patterns, and revelations about semantic ambiguity and its effects on comprehension. This can be done by referencing several studies and analyses the idea to have a valuable answer to the research question.

Because a single term can have several meanings, lexical ambiguity can significantly impair understanding by creating doubt in how to interpret a word or phrase. Confusion and processing delays might result from this ambiguity as the brain attempts to reconcile the divergent meanings. According to research, the brain normally

uses contextual signals to make sense of words, but comprehension may suffer if the context is unclear or susceptible to different interpretations (Swinney, 1979; Rayner & Duffy, 1986). Furthermore, handling lexical ambiguity can add to the cognitive load, making it take longer and more work to ascertain the intended meaning (Bates, 1991). According to psycholinguistic research, listeners and readers frequently rely on the situational context or surrounding text to choose the most appropriate interpretation. However, understanding may be impacted if these cues are lacking or inadequate (Clifton et al., 2003). If not handled properly, ambiguity can make communication more difficult even while it can enhance language by providing levels of meaning. To find out how linguistic ambiguity affects comprehension it should clarify lexical and structural ambiguity as well as scope ambiguity and the differences between vagueness and deixis which will be discussed in the following sections.

3-3 Main findings

Recent studies such as Yang and Dong (2020) and Karbalae and Maftoon (2018) indicate that linguistic ambiguity significantly impacts comprehension, especially in reading and spoken language tasks. Ambiguity in language—whether lexical (word meaning), syntactic (sentence structure), or pragmatic (contextual interpretation)—requires readers or listeners to use context clues and cognitive resources to resolve meanings. Contextual clues, whether linguistic (such as surrounding words or previous conversation) or situational (such as location or immediate topic), are essential to distinguishing such sentences.

Psycholinguistic research shows that our brains use context to quickly process ambiguous words, drawing on pre-existing knowledge and situational cues to arrive at the most appropriate interpretation (Swinney, 1979; Rayner and Duffy, 1986).

In the absence of context or ambiguity, a phrase may contain multiple possible meanings, which can lead to confusion or the need for further clarification. Research shows that readers with a higher tolerance for ambiguity generally perform better in comprehension, as they are less likely to be hindered by unclear or dual meanings. This tolerance helps them adapt and resolve ambiguities without experiencing significant disruptions in understanding.

From reviewing the literature, some important insights on the impact of ambiguity on understanding presented with some explanations:

3-3-1-Holds in Processing and Heightened Mental Demand:

Uncertainty in written communication hinders understanding and elevates cognitive load. Since, when readers come across ambiguous terms or constructions, like homophones or intricate syntax, they must contemplate various interpretations, necessitating extra cognitive processing time. This additional mental strain interrupts the reading process and can hinder comprehension (Ehrlich & Rayner, 1981; MacDonald et al., 1994). Readers frequently require breaks to reassess the text, particularly when the context fails to elucidate the intended meaning, hindering comprehension.

3-3-2-Dependence on Context for Clarification:

Readers depend significantly on contextual hints to make sense of unclear text. Since understanding the context is vital for clearing up uncertainties. For instance, the term “bank” might refer to a financial establishment or a riverbank, based on the context provided by nearby words. When the context is clear, readers can swiftly clarify uncertainty. Without distinct context, though, understanding diminishes as readers might keep interpreting various meanings without arriving at a clear comprehension (Ferreira et al., 2002; Ehrlich & Rayner, 1981).

3-3-3-Impact of Reader Skill and Prior Knowledge:

Ambiguity influences readers in varying ways depending on their language skills and knowledge of the topic. Since readers possessing greater language skills or knowledge in a specific subject tend to be more capable of clarifying ambiguity, since they can utilize a broader vocabulary or contextual understanding. Conversely, inexperienced readers might find it difficult, as they do not possess the tools to effectively clarify complex terms, which affects their overall understanding (MacDonald et al., 1994).

Overall, the findings underline that linguistic ambiguity can impede comprehension by increasing cognitive demand, especially for those with lower ambiguity tolerance or limited language proficiency. This impact is seen across various language comprehension tasks and contexts, making ambiguity resolution a critical skill for effective language processing.

4-Conclusion

This research paper explores the concept of ambiguity from various perspectives, including lexical ambiguity, structural ambiguity, a combination of both, and semantic scope. Each of these areas has been thoroughly

examined, with each focusing on a distinct aspect of semantic knowledge. For instance, lexical ambiguity involves words that have multiple meanings or variations in meaning and spelling. Within lexical ambiguity, several concepts contribute to the overall ambiguity, such as homographs, synonyms, antonyms, polysemy, homonyms, and homophones. Of these, homonyms and polysemy are particularly significant. Homonyms refer to words with identical spelling and pronunciation but different meanings, while polysemy involves words with the same spelling that carry different meanings but share a degree of universality, setting them apart from homonyms. Additionally, the paper reviews other concepts, including semantic scope, which addresses how words and structures can be interpreted from different perspectives and how this affects their intended meaning. Several articles and research papers on ambiguity were also reviewed, with the key findings revolving around two main hypotheses. The first, the exhaustive access hypothesis, disregards the context, while the second, the context-dependency hypothesis, emphasizes the importance of linguistic context. In summary, most types of ambiguity do not pose significant issues in discourse, as listeners and readers can usually deduce the intended meaning based on their prior knowledge and context. Some speakers and writers intentionally use ambiguous expressions for literary purposes to enhance their messages. Finally, the role of context is crucial in resolving any ambiguity

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