

# Investigating the Frequency of Deictic Expressions in Academic Papers

Baraat I. FaqeAbdulla

English Department, Faculty of Education, Salahaddin University, Kurdistan Region, Iraq

---

## ABSTRACT

This study aims to investigate the frequency of deictic expressions, such as pronouns, demonstratives, and adverbs in the abstracts of academic papers published by the Zanco Journal of Salahaddin University and Zanco Journal of Hawler Medial University in Erbil, Iraq, between 2020 and 2023. The focus of the analysis is to understand how these expressions are used in the abstracts of articles in three different fields and their impact on the clarity of the papers. To achieve this, a diverse corpus of academic papers from various disciplines is utilized, applying an eclectic (quantitative and qualitative content analysis) approach to determine the frequency and patterns of deictic expressions. The JASP statistics program is used to perform an ANOVA for the three groups of research articles as part of the quantitative content analysis. The results show that deictic words are more common in abstracts of research articles in humanities and social sciences, emphasizing subjective aspects and reader interaction, while spatial deixis is preferred in medical and applied sciences abstracts. The findings of this study will provide valuable insights into the stylistic choices made by academic authors and contribute to a better understanding of the employment of deictic expressions in scholarly discourse. Furthermore, analyzing the impact of these expressions on the clarity of papers contributes to a better understanding of how they can enhance effective communication.

**KEY WORDS:** Academic, Deictic expressions, Frequency, Investigating

---

## 1. INTRODUCTION:

The use of deictic expressions in abstracts of academic papers in different fields is important because it helps provide clarity and context to readers. Deictic expressions refer to something within the immediate context. By using these expressions in abstracts, authors can establish a more direct and engaging connection with readers, making their research more relatable and accessible. This can enhance the overall comprehensibility and impact of the paper. Deictic expressions play a crucial role in

establishing cohesion and coherence in written discourse. They are particularly important in academic writing, where precision and clarity are essential. However, despite their significance, there has been relatively limited research conducted on the frequency and distribution of deictic expressions in academic papers. This study aims to fill this gap by providing a comprehensive analysis of deictic expressions in a corpus of academic papers from various disciplines.

The study tries to find out the frequency of deictic expressions in abstracts of academic papers in different fields like humanity sciences, medical sciences, and pure and applied sciences. This study seeks answers for questions like: Do abstracts of articles in various academic disciplines have the same number of deictic words? Do the three main types of deixis appear in the same number in abstracts of different academic papers? All the academic research articles will be taken from Zanco Journal of Humanity

---

Koya University Journal of Humanities and Social Sciences (KUJHSS), Volume 6, Issue 1, 2023.

Received 25 Aug 2023; Accepted 28 Nov 2023,  
Regular research paper: Published 30 Feb 2023

Corresponding author's e-mail: [baraat.faqeabdulla@su.edu.krd](mailto:baraat.faqeabdulla@su.edu.krd)  
Copyright ©2023. Baraat I. FaqeAbdulla, this is an open access article distributed under the Creative Commons Attribution License.



Sciences, Zanco Journal of Medical Sciences, and Zanco Journal of Pure and Applied Sciences. The data of this study will be 45 research articles taken from 2020 to 2023 issues of Salahaddin University and Hawler Medical University's Zanco Journals. Fifteen articles from each field will be chosen to be used as the data of this study. By analyzing the frequency and distribution of deictic expressions, this study seeks to quantify their usage patterns and identify potential differences across academic disciplines. The research will employ quantitative and qualitative methodology, utilizing computational tools and statistical analysis to extract and analyze deictic expressions from the selected corpus of academic papers. The findings of this study will contribute to a better understanding of how deictic expressions are employed in academic writing practices. This study will be beneficial for both academic authors and readers, enabling them to make informed choices about the usage of deictic expressions, enhance clarity, and improve the overall quality of scholarly communication.

## 2. LITERATURE REVIEW

### 2.1 The Concept of Deixis

The context plays a crucial role in linguistic pragmatics. It is essential for understanding how people use words and body language. The physical and social context in which an utterance is used is an important consideration. It is therefore assumed that a speaker and listener share background knowledge in the sense that it influences how the listener interprets the speaker's intended meaning in a particular utterance. A linguistic tool known as context allows speakers to advance specific types of interpretation, most notably forms of explanation, or to reveal hidden meanings and deeper understanding. The context plays a critical role in how deictic expressions should be understood.

This is because the purpose of the category of expressions known as deixis is entirely dependent upon the context in which they are used (Abdullah, 2021, p.6798). Deixis is a crucial concept in linguistics, linking real life and language usage. It is studied in semantics, pragmatics, discourse analysis, cognitive science, and general linguistics. Linguists use various terms for deixis, including pure index, index symbol,

indexical symbol, indicators, indexical expressions, and shifters (Alsaif, 2011, p.67; Abd & Ali, 2019, p.60). Any form of language used to 'point' or 'indicate' is called deictic expressions or indexicals, and deictic expressions require participants to find concrete relations. When someone calls another person by phone and says 'it's me', they invite the interlocutor to figure out, based on oral characteristics, which 'me' the speaker refers to (Ningsih & Megawati, 2022, p.15). Deictic words are the best examples of pragmatics because they demonstrate the significance of context in understanding their meanings.

One of the most obvious ways to link language to a non-linguistic physical object in our real world is through the phenomenon of deixis. The ability to use gestural deictic terms with reference to a visual, physical entity expressed in a linguistic context can be used to describe this phenomenon. By directing their attention on a referent already present in their knowledge of their physical existing world, the writer can reconstruct the addressees' knowledge by using deictic expression. English deictic expressions have a unique occurrence in linguistic contexts where a referential entity that exists in the hearer's real world determines their meaning (Hamdan, 2015, p.280). Each language has unique ways of expressing deictic elements of communication. These devices can either be linguistic deictic terms, which give information about the speakers' and addressees' identities, where they are in space (locatives like there and here), and when they are speaking (temporal terms like then), or extra-linguistic devices, like gestures and facial expressions (Tfouni & Klatzky, 2008, p.123).

Deixis integrates natural languages with subjective, attentional, intentional, and, of course, context-dependent properties. Furthermore, it is a much more common attribute of languages than is typically acknowledged. Despite its theoretical significance, deixis is one of the most empirically understudied core areas of pragmatics; pragmatists are still trying to understand its boundaries and do not have a strong enough cross-linguistic typology of deictic expression (Levinson, 2006, p.97). Deixis appears to be a very important concept to linguists, but little research has been done on it.

Deixis is extensively covered in Stephen Levinson's book *Pragmatics*, published in 1983. In his book, he makes the case that deixis is an essential

component of communication because it enables speakers to make references to elements of the speech situation like time, space, and interpersonal connections. Levinson also discusses deixis in relation to the Gricean Cooperative Principle, which holds that speakers and listeners produce and interpret utterances according to a set of conversational rules. Deixis aids in conveying additional meaning in this situation beyond a statement's literal meaning. Overall, Levinson (2006) places a strong emphasis on the importance of deixis as a crucial pragmatic phenomenon that supports effective communication. He highlights its function in delivering contextual information and influencing interpretation in conversation as he explores its various dimensions and pragmatic implications. Levinson played a significant role in popularizing the deictic expressions, which led to the majority of researchers mentioning him in their research.

The word deictic is originally a Greek 'deiktikos', which means to be 'able to show'; which comes from the word 'deiktos'; which is a verbal of the word 'deiknynai,' meaning to show. Numerous academics and linguists have given it various names, all of which have the same meaning (Lyons, 1977, p.636; Abd & Ali, 2019, p.60; Abdulla, 2021, pp.6797-6798). Deictic expressions can be applied in a variety of contexts: Many deictic expressions can be used anaphorically, as in "Last weekend we just did this and that," or non-anaphorically, as in "We travelled to London last month and absolutely loved that." Because they are removed from the time and location of speaking, it could be argued that the latter is strictly deictic. Deictic expressions can be expressed with or without gestures. Given that pointing is frequently done with the lips and the eyes in some cultures, gestures in this context must be broadly interpreted. Vocal intonation can be used in place of hands to convey gestures like "shoot NOW" or "I'm over HERE." Despite this, deictic expressions of person, place, and time are prominently used in the various grammatical distinctions that make up the languages of the world (Levinson, 2006, p.111). Deictic words or expressions might have other names in grammar like pronouns, adverbs, and demonstratives. The term deixis is more specific to pragmatics and discourse analysis. So, as mentioned earlier deixis as a pragmatic feature is not

a brand-new word; it has existed since the time of the ancient Greeks.

## 2.2 Definitions of Deixis

Deixis has been defined by numerous linguists. Deixis, according to Lyons (1977), is the localization and identification of entities that are in relation to the spatio-temporal context that is created and maintained by the act of utterance and the participation in it, typically, of a single speaker and at least one addressee (p.637). According to the Oxford Dictionary, the term "deictic" refers to or denotes a word or expression whose meaning depends on the context in which it is used. Deixis is interested in how languages encode aspects of the utterance context, and as a result, it is also interested in how an examination of the context affects how those languages interpret utterances (Abd & Ali, 2019, p.60). According to Levinson (1983), deixis is interested in the ways in which languages encode or grammaticalize various facets of the context of an utterance or speech event, and as a result, it is also interested in the ways in which the interpretation of utterances is reliant on that context (p.54). Since the word "context" appears in all of the aforementioned definitions, deictic words or expressions are useless without it. If they are taken out of their original context, they lose their meaning.

Deictic expressions, also known as "Indexicals", are things that are used to mark "pointing" linguistically. Deixis is a type of reference that is closely related to the context of the speaker. This implies that it is impossible to understand or arrive at an interpretation of the deictic expressions without knowing the speaker's circumstance (Yule, 1996, p.9). Deixis is defined by Fillmore (1997) as those lexical terms and grammatical constructions that are only understandable when the sentence in which they appear is acknowledged as being anchored in some social context. This context is defined in a way that identifies the participants in the communication act, their location in space, and the time during which the communication act is performed (p.59).

In the field of pragmatics, words or expressions that depend on concept and context are known as deixis. It's a technical term for phrases or expressions that are conceptually based and are used in spoken face-to-face interactions (Hutauruk, 2018, pp.99-100). Tfouni

and Klatzky (2008) refer to Fillmore's definition of deixis as the characteristics of utterances that can only be understood when certain aspects of the communication act are taken into account, specifically the context in which these utterances occur (p.123).

Deictic expressions can also be used as anaphora in non-deictic contexts. They can also be used gesturally, and some deictic expressions may not even use gestures. These categories serve as crucial reference points for complex deictic concepts like honorifics, complex tenses, or discourse deixis systems. Despite the fact that they are strong universals of language conceptually, pronouns, tense, contrasting demonstratives, and other deictic expressions are not present in all languages. The meanings of deictic expressions are frequently taken for granted in grammatical descriptions and are rarely properly investigated, so cross-linguistic data on deictic categories are not ideal (Levinson, 2006, pp.111-112). The types of deictic words or expressions will be the main topic in the following section.

### 2.3 Types of Deixis

The three categories of deixis are deixis of the person, deixis of the place, and deixis of the time. However, Lyons (1977), Levinson (1983), and Cruse (2004) added the two new types of discourse deixis and social deixis (Abdul-Hussein, 2016, p.5). Deixis can be categorized into three broad groups: person, place, and time. Yule (1996) only covers the person, spatial, and temporal types of deixis. The standard by which deictic expressions can be distinguished is the speaker's context. Deictic expressions can be classified as proximal (this, here, now) or distal (that, there, then) depending on their location. Only the deictic center, which alludes to the speaker's location and time, can be used to interpret deixis (pp.9-18). There are many classifications of deictic expressions, but they all move around the three-type classification (person, time, and place). The following paragraphs give details to each type.

Person deixis, such as "I", "we", "you", "he", etc., are forms used to identify specific individuals. The pronouns for the first person, "I", the second person, "you", and the third person, "he", "she", and "it", are frequently used to express person deixis (Yule, 1996, pp.9-18; Hutauruk, 2018, pp.99-100). Personal deixis and pronouns stand out due to their changeable

meaning and significance, which is essentially a reference to some circumstances that are found outside of the linguistic expression itself and are determined by the overall situation (Alsaif, 2011, p.91). The distinctions between the first, second, and third person are the fundamental ones that reflect person deixis in grammar (Abdulla, 2021, p.6799). In order to determine what and to whom these pronouns are referring, one must be fully aware of the context.

According to Levinson, the term "time" or "temporal deixis" is used to describe a period of time that is related to the time at which a spoken word or utterance is made. The distinction of tenses, "now", "then", "yesterday", "today", "tomorrow", "this week", and "this afternoon" are all examples of how it is grammatically formalized as a deictic time adverb (Hatch, 1992, p.217). Time adverbs are used to describe the precise moment at which the speaker is producing the utterance in time deixis, which ultimately refers to participant-role. Cycles of day and night, months, seasons, and years, as well as temporal adverbs, are among the most common and natural time-deictic expressions. According to Levinson, time deixis can be expressed using simple and complex time adverbs and is related to the time of the speech event (Abdulla, 2021, pp.6799-6801). And thus, temporal deictic words only convey meaning in the appropriate context. They are meaningless when taken out of context.

Demonstrative pronouns and adverbial pronouns or adverbs of place are used to express spatial deixis (Hutauruk, 2018, pp.99-100). Place deixis is demonstrated by the use of demonstrative pronouns like "this" and "that," as well as demonstrative adverbs of place like "here" and "there." (Levinson, 1983, p.62). According to where the speaker is, the spatial location is relative. It can be distal (away from the speaker), proximal (close to the speaker), or both. "This" and "that" have the same meaning as the plural forms "these" and "those". The specification of locations in relation to anchorage points during a speech event is known as place deixis. Other deictic elements such as greetings, which are typically time-limited, are relevant to this type of deixis (Abdulla, 2021, pp.6799-6801).

If a word refers to a specific section of the text, such as in "the previous paragraph" and "the coming sections," it is considered to be discourse deixis.



Discourse deixis, according to Levinson (1983), is "the use of expressions with some utterance to refer to some portion of discourse that contains the utterance." (p.85). Social deixis is another type of deixis. Compared to the other four types of deixis, it is unique. It alludes to the social position of the speaker and addressee in a given society as expressed through language. In social relationships between the speaker and the addressee or the speaker and some reference, there are social distinctions that are related to the participant role that are reflected by the use of a code (Levinson, 1983, p.63). Hatch (1992, p. 220) refers to social deixis as a way to determine the social status of the speaker's target audience. These last two types of deixis are added to the classifications of deixis later by Levinson and Lyons.

### 3. METHODOLOGY

The aim of this paper was to know the frequency of deictic words in abstracts of academic research articles written in three different fields. To achieve the research aim, 45 research articles in three different fields (Humanity Sciences, Medical Sciences, and Pure & Applied Sciences) were downloaded from Zanco Journal of Salahaddin University and Hawler Medical University-Iraq. The researcher read the abstracts many times to count the deictic words. The spread sheet of the recorded data was imported into JASP statistics software for classical ANOVA analysis. The ANOVA compares the variability observed within and between groups to determine if there is a statistically significant difference. The results have been presented in tables and figures in the results section. After that the researcher did the analysis for the deictic words in the context. Yule's (1996) classification of deixis into personal, temporal, and spatial was used to classify the deictic words found in the abstracts of the all the three groups of research articles.

The study used an eclectic method of quantitative and qualitative content analysis. The method of content analysis, which dates back to the 1950s, can be used to systematically analyze written, verbal, or visual documentation. It is possible to analyze content by breaking it up into conceptual chunks that are then coded or named. The two types of content analysis are conceptual analysis and relational analysis. Conceptual analysis is essentially the same as what

was just described: the content is coded for particular words, concepts, or themes, and the analyst draws conclusions from the patterns that emerge. Relational analysis builds on conceptual analysis by looking at the relationships between the ideas and themes that come to light in the text under study (Wilson, 2011, p.177).

The study focuses on research articles published in the Zanco Journal affiliated with Salahaddin University and Hawler Medical University in Erbil, Iraq between the years 2020-2023. The selection includes a total of 45 articles from these particular journals. The study specifically analyzes deictic words within the abstract sections of each research article. The abstracts are chosen as the primary source of data due to their concise nature and their importance in providing a summary of the key aspects of the research. The study concentrates on academic papers published in the Zanco Journal, which represents a specific subset of scholarly publications. As a result, the findings and conclusions drawn from this study may not be representative of deictic word usage in other academic journals or different domains of writing.

### 4. RESULTS

In order to present accurate results, quantitative and qualitative content analysis was used. First, results of the quantitative content analysis are presented in tables and figures with their description. Then, results of the qualitative content analysis are presented.

#### 4.1 Quantitative Content Analysis

Table 1. is the result of the classical ANOVA analysis, specifically a type III ANOVA, which is used to evaluate the differences in means between three groups. The "Group" row represents the sum of squares (SS) for the variability between groups. In this case, the SS is 564.133. The "Residuals" row represents the sum of squares for the variability within groups, which is also known as the error or residual sum of squares, and the SS is 1230.667. The Df column represents the degrees of freedom associated with each source of variation. Df for the between-group variability is 2, which means there were 3 groups (including the overall mean) in the analysis. Df for the within-group variability is 42.

The "Mean Square" column represents the mean sum of squares, which is calculated by dividing the sum of squares by the corresponding degrees of freedom. The mean square for the between-group variability is 282.067. The mean square for the within-group variability is 29.302. The F-value is 9.626, which represents the ratio of the mean square for the between-group variability to the mean square for the within-group variability. The F-value is very high which determines significant differences between the groups. The p-value is less than 0.001, denoted as "<.001". In this case, the p-value is very small, which suggests strong evidence against the null hypothesis. Overall, the ANOVA results suggest that there are significant differences between the groups, as indicated by the small p-value.

**Table 1: ANOVA Statistics Results**

Cases	Sum of Squares	Df	Mean Square	F	p
Group	564.133	2	282.067	9.626	<.001
Residuals	1230.667	42	29.302		

Note. Type III Sum of Squares

Table 2. shows the descriptive statistics of the three groups of deictic expressions in articles' abstracts. Three groups of abstracts in three different fields of study, each group consisted of 15 abstracts, and the total number was 45. The first group has the highest mean score 14.267, the second group is 7.000, and the third group has the lowest mean score 6.533. The standard deviations are 7.860, 3.185, and 3.998; the second and the third group are close to each other but totally different from the first group. Group 2 has the lowest coefficient of variation 0.455, indicating the least variability among its data points. Group 1 has a coefficient of variation of 0.551, while Group 3 has the highest coefficient of variation 0.612, suggesting greater variability in their respective data points.

**Table 2: Descriptive Statistics for the Frequency of Deictic Expressions**

Group	N	Mean	SD	SE	Coefficient of variation
1	15	14.267	7.860	2.029	0.551
2	15	7.000	3.185	0.822	0.455
3	15	6.533	3.998	1.032	0.612

Figure 1. shows the descriptive plot of the frequency of deictic expressions in 45 articles in three different fields. The first group (Humanity Sciences) has the highest frequency of deictic expressions. The second group (Medical Sciences) is much lower than the first group but the frequency of the deictic expressions in these articles are higher than the third group (Applied and Pure Sciences). The dot plot shows the mean for the first group of articles near to 14, for the second group 7, and for the third group of articles near 6.

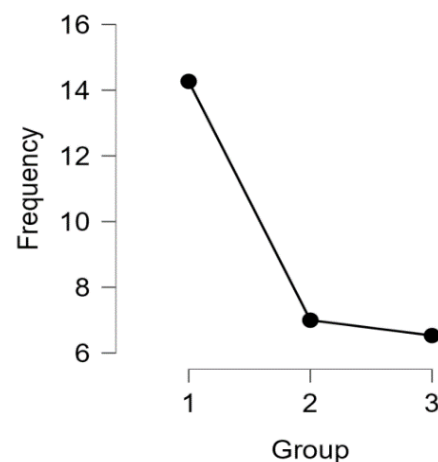


Figure 1: Descriptive Plot of the Frequency of Deictic Expressions

Figure 2. shows the bar charts of the deictic words found in the three groups. In the first group of research articles, 214 deictic words were detected; 101 personal deixis, 85 spatial deixis, and 28 temporal deixis. In the second group of articles, 105 deictic

words were detected; 60 spatial deixis, 25 temporal deixis, and 20 personal deixis. In the third group of articles, 98 deictic words were detected; 58 spatial deixis, 20 temporal deixis, and 20 personal deixis. The

second group and the third group are close to each other and they have the highest number of spatial deixis.

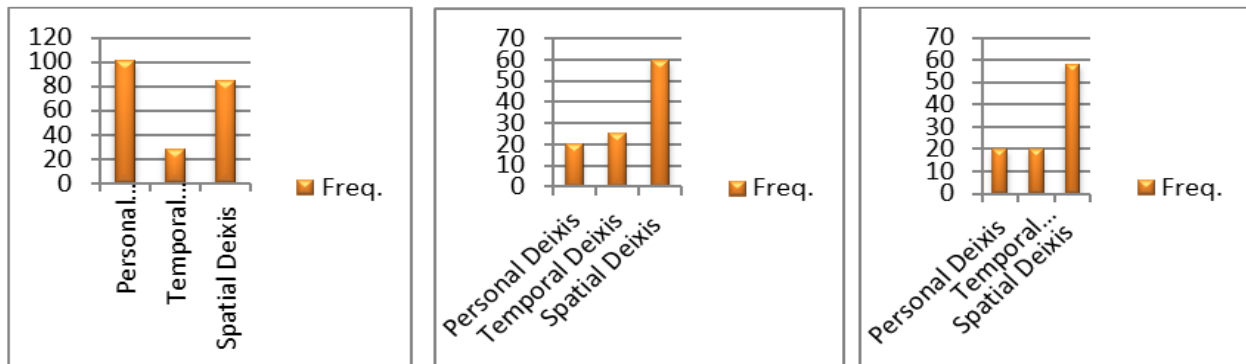


Figure 2: Frequency of Deictic Words in the First Group, Second Group, and Third Group

#### 4.2 Qualitative Content Analysis

To clarify the deictic expressions in abstracts of academic papers, the researcher conducted a qualitative content analysis of deictic words in context. Analyzing deictic words can provide insights into how language is used to indicate spatial, temporal, or interpersonal relationships. Here is a qualitative content analysis of some deictic words in the context of academic articles:

1. "It aims to analyze a combination of factors that cause personality disorder which is reflected not only in the character of the Marsh King (Helena's father) but also in Helena, who hides her true identity from her husband."

The above sentence has six deictic words (it, that, which, who, her, and her). It has personal and spatial deixis types. 'It' is used to refer to the study and it is personal deixis as it is a pronoun. 'That' is a spatial deixis as it is a demonstrative. 'which' is also a place or spatial deixis, 'who' is a personal deixis referring to Helena in the context, again the possessive pronoun 'her' is used twice referring to Helena. One sentence contains four personal deictic words because it is an abstract of an article in literary studies.

2. "Students acquire the feeling of discomfort whenever they hear the term "grammar"."

The sentence has two deictic words 'whenever and they'. 'whenever' is a temporal deixis and 'they' is a

personal deixis that refers to the Students. It is taken from an applied linguistic article.

3. "White's modernism in her stories and diaries are due to her too personal and erotic language, which allows her to belong to the Avant-Garde period."

The sentence is taken from an abstract of English literature article. It has three personal deixis and one spatial deixis. 'her' is repeated three times and all three refer to White who is a writer. 'which' is used one time to refer to the place.

4. "This cross-sectional retrospective study was carried out between January 2016-December 2021 in Erbil city."

The above sentence is taken from the abstract of a medical science article. It contains the deictic word 'This,' and it is a spatial deixis.

5. "There was significant relationship between hemoglobin level, neutropenia and type of non-hematological cancer with the intensity of oral mucositis respectively ( $P \leq 0.001$  and  $\rho = -0.352$ ,  $P = 0.027$  and  $\rho = -0.221$ , and  $P = 0.035$  and  $\rho = 0.095$ , respectively)."

The sentence is from medical science abstract of an article that contains a spatial deixis 'There'. It refers to the place that the experiment has done.

6. "A total of 1,500 women were targeted while they were accompanying another person, including children, to receive health services in Erbil."

The above sentence is from an abstract of a medical science paper. It contains two deictic words 'while' and 'they'. 'while' is a temporal deixis that refers to

the time of the experiment, and 'they' is a personal deixis refers to the participants of the study.

7. "In this paper, a comprehensive experimental study was conducted to investigate the bond performance of sand-coated glass fiber reinforced polymer (GFRP) bars embedded in normal concrete with different bar sizes and different embedded regions of concrete beams following the regulation of the Rilem beam."

The above sentence is taken from a pure and applied science abstract. It contains a deictic word 'this,' and it is a special deixis.

8. "There was a strong connection between the measuring head and the estimated head, and the model's coefficient of determination was  $R^2 = 0.9935$ ." The above line contains a deictic word 'There'. It is a spatial deictic word that refers to the place of the experiment where it happened.

9. "Twenty-four male adult albino rats (250–300g) were used in this study, which were arbitrarily assigned into four groups."

The above sentence from a pure and applied science abstract which contains two deictic words 'this' and 'which'. They are both spatial deixis.

## 5. DISCUSSION

The purpose of this study was to look into how often deictic expressions appear in academic paper abstracts of three different fields or disciplines. To find out the results, ANOVA statistics was conducted. The p-value was less than 0.001 which suggests very strong difference among the three groups. The mean value of the first group was 14.267, and the second group was 7.000, and the third group was 6.533. The mean value of the first group was very high while the second and third groups were close to each other. It means that the use of deixis in abstracts of the academic research articles of humanity sciences are much higher than in the abstracts in the academic research articles of medical and applied sciences. It is important to note that the use of deictic words can vary across disciplines and individual writing styles.

For a few reasons, humanities research article abstracts use more deictic words than those in the medical and applied sciences. The subjective and interpretive aspects of human experiences, thoughts, cultures, and societies are frequently the focus of humanities research. Deictic words are helpful for

referring to particular ideas, concepts, or examples, giving the reader more context. Research in the humanities frequently looks at contexts, times in history, and cultural or social settings. Humanities research frequently invites readers to interact with the author's interpretations and arguments, so it tends to have a more conversational style. By making reference to shared understandings between the writer and reader, deictic words help to facilitate this interaction. In contrast, objectivity, precision, and empirical data are frequently given priority in the medical and applied sciences. Research methods, findings, and conclusions are typically summarized in these fields' abstracts. They place a strong emphasis on conciseness, clarity, and the reporting of precise findings that doesn't necessitate the frequent use of deictic words.

The bar charts presented in the results section display the frequency of deictic words found in three different groups of research articles. In the first group which was the group of abstracts in academic articles of humanity sciences, a total of 214 deictic words were detected, with varying distributions among the different types of deixis. Specifically, 101 deictic words belonged to the category of personal deixis, 85 were related to spatial deixis, and 28 were associated with temporal deixis. Moving on to the second group of articles of medical sciences, the researcher observed a lower overall count of deictic words, with a total of 105 instances detected. Among these, spatial deixis was the most prevalent, with 60 occurrences, followed by temporal deixis with 25 examples, and personal deixis with 20 instances. Similarly, in the third group of articles, 98 deictic words were identified, with spatial deixis appearing most frequently at 58 occurrences. The remaining deictic words were divided between temporal deixis (20 instances) and personal deixis (20 instances). Interestingly, the second and third groups displayed similarities in terms of the distribution of deictic types. Both groups showed a higher concentration of spatial deixis compared to personal and temporal deixis. This suggests a potential pattern or trend within the research articles that emphasizes spatial relationships and references.

The reasons behind the prominence of spatial deixis in the abstracts of medical and applied sciences could be attributed to the subject matter or scope of



the articles. It is plausible that the topics covered in these articles involve discussions related to physical locations, spatial structures, or spatial relationships. Medical and applied sciences are about experiments and applications; as a result, they contain deictic words of place. This may explain why the authors heavily relied on spatial deictic words to convey their ideas and arguments. Additionally, the comparable number of spatial deixis instances in the second and third groups indicates a potential shared focus or commonality between these two sets of articles.

## 6. CONCLUSION

The goal of the study was to determine how frequently deictic words appeared in the abstracts of research articles published in the Salahaddin University and Hawler Medical University's Zanco Journals. To understand the frequency of deictic words in academic papers, the articles were chosen from three different academic disciplines: humanity and social sciences, medical sciences, and applied and pure sciences. The variation between the three groups had been calculated using ANOVA statistics. The p-value was  $<.001$ , which is a significant number. Deictic words were more prevalent in abstracts of humanities-related sciences than they were in those of applied and medical sciences. In medical and applied science abstracts, the number of deictic words varied, though not significantly from one to the other. Compared to those in the medical and applied sciences, research articles in the humanities frequently use more deictic words. This is because there is a focus on the subjective and interpretive aspects of human experiences, as well as on setting the scene and encouraging reader interaction. Contrarily, medical and applied sciences place a higher value on objectivity, accuracy, and empirical data, which reduces the frequency of deictic words in their abstracts. Additionally, there was a clear preference for spatial deixis in both the groups of the medical and applied sciences, which may point to a trend in these fields toward emphasizing spatial relationships and references. This study used abstracts of academic papers. It is recommended to conduct studies about deixis in the methodology or conclusions of academic papers.

## REFERENCES

### Primary References

- Abdullah, C. et al. (2021). Evaluation of oral mucositis in pediatric cancer patients in Hiwa Hospital in Sulaymaniyah city, Kurdistan Region, Iraq. *Zanco Journal of Medical Sciences*, No.3, Vol.25. <https://doi.org/10.15218/zjms.2021.025>.
- Abdulrahman, B., & Majeed, Z. (2023). A comparative study of scopolamine, D-Galactose and AIC13-induced Alzheimer's like disease by enhancing hippocampal neurodegeneration and memory impairment in male rats. *Zanco Journal of Pure and Applied Sciences*, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.19>.
- Abdulrazaq, H., & Wshear, P. (2023). Genetic relationship between generations of chickens using RAPD-PCR. *Zanco Journal of Pure and Applied Sciences*, No.1, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.1.11>.
- Abood, S. (2020). Effects of Using Glogster on Learning Vocabulary among Iraqi EFL Learners. *Zanco Journal of Humanity Sciences*, No.5, V. 24. <https://doi.org/10.21271/zjhs.24.5.15>.
- Ahmed, R., & Awla, Y. (2022). Error Analysis of Translation: A Case Study of ELT Department Students/ Tishk International University. *Zanco Journal of Humanity Sciences*, No.5, V.26. <https://doi.org/10.21271/zjhs.26.5.19>.
- Ahmed, S. (2023). The correlation between Blood group type and Diabetes Mellitus Type II. *Zanco Journal of Medical Sciences*, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.003>.
- Ahmed, S., & Akrawi, H. (2023). Integrated interaction between Nano, conventional potassium fertilizer and Zeolite on kinetic K-release from calcareous soil. *Zanco Journal of Pure and Applied Sciences*, No.1, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.1.6>.
- Ali, B. (2021). Inter and intrasentential code switching among late bilinguals. *Zanco Journal of Humanity Sciences*, No.6, V. 25. <https://doi.org/10.21271/zjhs.25.6.13>.
- Ali, R., & Ahmed, S. (2023). Atherogenic index of plasma as a biomarker of atherogenicity in type 2 diabetes mellitus in Erbil city. *Zanco Journal of Medical Sciences*, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.001>.
- Ali, S., & Saleh, A. (2022). Breastfeeding practices among working mothers at the workplace in Erbil city: A cross-

- sectional study. Zanko Journal of Medical Sciences, No.2, Vol.26. <https://doi.org/10.15218/zjms.2022.006>.
- Ali, Z., & Berzinji, P. (2023). Immunohistochemical expression of PTEN (phosphatase and tension homolog) in endometrial carcinoma. Zanko Journal of Medical Sciences, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.011>.
- Ameen, H., & Murad, I. (2023). Photometric analysis of SW Lac short period binary star. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.1>.
- Azeez, R. (2021). Color-code Strategy for Improving Writing Academic Paragraphs in EFL Classes. Zanko Journal of Humanity Sciences, No.2, V.25. <https://doi.org/10.21271/zjhs.25.2.15>.
- Bapir, N. (2020). The Assessment of Writing - from Paragraph to Essay for Undergraduate Students at Salahaddin University - Erbil. Zanko Journal of Humanity Sciences, No.5, V. 24. <https://doi.org/10.21271/zjhs.24.5.17>.
- Dhahir, A., & Alalaf, S. (2022). Maternal and neonatal characteristics that influence early neonatal deaths in a maternity teaching hospital. Zanko Journal of Medical Sciences, No.2, Vol.26. <https://doi.org/10.15218/zjms.2022.011>.
- Dizaye, K., & Berzinji, B. (2023). The impact of rosuvastatin on inflammatory markers in L-NAME induced hypertensive rats. Zanko Journal of Medical Sciences, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.011>.
- Faqe, A., & Abbas, N. (2022). A study of the Lexical Approach on Identification and Learning Collocations among EFL Students in private Universities in Erbil City. Zanko Journal of Humanity Sciences, No.5, V.26. <https://doi.org/10.21271/zjhs.26.5.20>.
- Hajimam, A., Ahmed, H., & Mishkin, K. (2023). Women's expectations of health care providers in the labor and delivery room in the Kurdistan Region of Iraq. Zanko Journal of Medical Sciences, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.007>.
- Hamad, O., & Mohammad, A. (2023). Behavior of High Strength Concrete Columns Intersected by Normal Strength Concrete Beams. Zanco Journal of Pure and Applied Sciences, No.1, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.1.2>.
- Mustafa, H. (2022). The Connotative Meaning of Emotional Words in Kate Chopin's The Awakening. Zanko Journal of Humanity Sciences, No.4, V. 26. <https://doi.org/10.21271/zjhs.26.4.21>.
- Ibrahim, S. (2023). The Effects of Code-switching on Teaching English from EFL Students' Perspective. Zanko Journal of Humanity Sciences, No.2, V.27. <https://doi.org/10.21271/zjhs.27.2.25>.
- Ismail, K., Hamad, A., & Bibani, R. (2023). Early Complications of Stroke in Hospitalized Patients in Erbil. Zanko Journal of Medical Sciences, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.004>.
- Jamal, A., Muhammad, B., & Rashid, S. (2022). Ultrasound evaluation of gallbladder dimensions in healthy adults. Zanko Journal of Medical Sciences, No.2, Vol.26. <https://doi.org/10.15218/zjms.2022.010>.
- Ibrahim, J. (2022). Modernism in Antonia White's Confessional Autobiographical Narratives: A study of Woman's Life in Twentieth Century. Zanko Journal of Humanity Sciences, No.4, V. 26. <https://doi.org/10.21271/zjhs.26.4.20>.
- Kareem, G., & Alalaf, S. (2022). Risk assessment and compliance with hospital guidelines for venous thromboprophylaxis after gynecological surgeries. Zanko Journal of Medical Sciences, No.2, Vol.26. <https://doi.org/10.15218/zjms.2022.012>.
- Khaleel, K., & Hussain, S. (2022). The prevalence of thyroid dysfunction and thyroid autoantibodies among patients with rheumatoid arthritis. Zanko Journal of Medical Sciences, No.2, Vol.26. <https://doi.org/10.15218/zjms.2022.009>.
- Mahmood, B. (2021). Inflectional Changes of Double Marked Form: Evidence from a Corpus Study of English Verbal System. Zanko Journal of Humanity Sciences, No.6, V.25. <https://doi.org/10.2127/zjhs.25.6.14>.
- Mamand, B., & Mawlood, D. (2023). Estimating Mean Residence Time of Groundwater in Central Basin/ Erbil using Environmental Isotopes. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.4>.
- Mirkhan, S.K. (2023). Personality Disorder in Karen Dionne's The Marsh King's Daughter: A Psychoanalytic Study. Zanko Journal of Humanity Sciences, No. 2, V.27. <https://doi.org/10.21271/zjhs.27.2.27>.
- Mohammed, N., Potrus, M., & Ali, A. (2023). Deep Learning Based Car Damage Classification and Cost Estimation. Zanco Journal of Pure and Applied Sciences, No.1, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.1.1>.
- Muhammadamin, S., & Mahmood, B. (2023). Influence of Combination Between Fertilizer Treatments and Nipping on Growth, Yield and Quality of Sesame (*Sesamum indicum*

- L.). Zanco Journal of Pure and Applied Sciences, No.1, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.1.5>.
- Mustafa, H. (2022). The Semantic Field of Sport Collocations in English. Zanco Journal of Humanity Sciences, No.6, V. 26. <https://doi.org/10.21271/zjhs.26.6.20>.
- Mustafa, J. (2021). Challenges Facing EFL Students of English Department in Some Topics of Grammar. Zanco Journal of Humanity Sciences, No.2, Vol. 25. <https://doi.org/10.21271/zjhs.25.2.13>.
- Othman, R., & Aula, F. (2023). Design and Analysis of the Dual Axis Tracking System for Solar Thermal Concentrator in Erbil City using Arduino Controller. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.5>.
- Othman, S., Hussein, Z., & Salih, N. (2023). Assessment of Radon Concentration in Blood Samples of Different Kinds of Cancer by Using CR-39 Nuclear Track Detectors. Zanco Journal of Pure and Applied Sciences, No.2, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.2.3>.
- Qader, M., & Shekha, Y. (2023). Bioremediation of Heavy Metals by using *Aspergillus niger* and *Candida albicans*. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.16>.
- Qader, Z., & Kakshar, F. (2023). Experimental Investigation on Bond Stress Behavior of Sand Coated GFRP Bars with Concrete. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.3>.
- Qadir, G., & Hadi, H. (2023). Electrodeposition of Nickel-copper alloy from aqueous solutions in the presence of organic additives. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.18>.
- Riaz, F. et al. (2023). Self-Perception of dental problems among intermediate school children in Abha, KSA. Zanco Journal of Medical Sciences, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.005>.
- Rostam, S., Shekhany, K., & Baqi, H. (2022). Utility of inflammatory makers, alanine aminotransferase, aspartate aminotransferase, and procalcitonin tests in COVID-19. Zanco Journal of Medical Sciences, No.2, Vol.26. <https://doi.org/10.15218/zjms.2022.003>.
- Saeed, A. (2023). Satire in Modernism: A Comparative Study of T.S. Eliot's 'The Love Song of J. Alfred Prufrock' and Aldous Huxley's 'Crome Yellow'. Zanco Journal of Humanity Sciences, No.2, V.27. <https://doi.org/10.21271/zjhs.27.2.21>.
- Saleem, S., Rashid, H., & Rowandizy, A. (2023). The Prevalence of Adjacent Segment Disease and Reoperation Following Transpedicular Screw Fixation of Lumbar Spine. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.23>.
- Tahsin Hussein Rassul, T. (2022). An Investigation of Constructive Alignment between Learning Outcomes and Assessment in English Department Modules. Zanco Journal of Humanity Sciences, No. 4, V.26. <https://doi.org/10.21271/zjhs.26.4.19>.
- Yashooa, N., & Mawlood, D.KH. (2023). Numerical Modelling of Groundwater Flow and Contamination Transport (TDS) in Kaniqurzala Area- Central Basin – Erbil City Kurdistan – Iraq. Zanco Journal of Pure and Applied Sciences, No.3, Vol.35. <http://dx.doi.org/10.21271/ZJPAS.35.3.2>.
- Yousif, S. (2023). Appraisalment of Mental Health Manifestations among Hypertensive Patients. Zanco Journal of Medical Sciences, No.1, Vol.27. <https://doi.org/10.15218/zjms.2023.002>.

### Secondary References

- Abd, T., & Ali, M. (2019). A Pragmatic Study of Deixis in English. Al-Esraa University College Journal for Social and Art Science, No.1, Vol.1, p.60.
- Abdul-Hussein, A. (2016). Discourse Analysis of Deictic Expressions in Beckett's 'Waiting for Godot'. University of Al-Mustansiriyah: Iraq, p.5.
- Abdullah, S. (2021). A Pragmatic Comparative Study of Deixis in Relation to Absurd Drama. Turkish Online Journal of Qualitative Inquiry (TOJQI) Vol.12, Issue 7, pp. 6797-6801.
- Alsaif, F. (2011). Deixis in English and Arabic: A Semantic-Pragmatic Study and its Pedagogical Implications. Institute of Advanced Studies in English. Supriya: University of Pune. pp.67- 91.
- Fillmore, C. (1997). Lectures on Deixis. Center for the Study of Language: Stanford, p.59.
- Hamdan, M. (2015). Syntactic and Semantic Functions of Deictic Expressions in EFL Saudi Students' Writing. Journal of Language Teaching and Research, No.2, Vol.6, pp.280-285. DOI: <http://dx.doi.org/10.17507/jltr.0602.06>.
- Hatch, E. (1992). Discourse and Language Education. Cambridge: Cambridge University Press, pp.217-220.
- Hutauruk, B. (2018). Stylistic Analysis of Deictic Expressions Used on EFL Written Essay Grade III at English Department at FKIP UHN PEMATANGSIANTAR. Journal of English Language and Culture, No.2, Vol.8, pp.99-100. <http://journal.ubm.ac.id/>.
- Levinson, S. (1983). Pragmatics. Cambridge University Press: Cambridge, pp.54-89.

- Levinson, S. (2006). "Deixis" in Horn, L. and Ward, G's *The Handbook of Pragmatics*. UK: Blackwell Publishing Ltd, pp.97, 111- 112.
- Lyons, J. (1977). *Semantics*. Cambridge University Press: Cambridge, p.636-637.
- Ningsih, P., & Fika Megawati, F. (2022). Deictic Expressions Used by Lera Boroditsky in TED Talks Channel. *Journal of Research and Innovation in Language*, Vol.4, No.1, p.15.  
DOI: <https://doi.org/10.31849/reila.4951>.
- Tfouni, L., & Klatzky, R. (1983). A discourse analysis of deixis: pragmatic, cognitive and semantic factors in the comprehension of 'this', 'that', 'here' and 'there'. *Journal of Child Language*, Vol.10, Issue.1, pp.123-133.  
DOI:10.1017/S0305000900005183.
- Wilson, V. (2011). *Research Methods: Content Analysis*. Evidence Based Library and Information Practice, 6.4, p.177.  
<http://creativecommons.org/licenses/by-nc-sa/2.5/ca/>.
- Yule, G. (1996). *Pragmatics*. Oxford: Oxford University Press, pp.9-18.