

The Role of Intonation in Disambiguating Meanings: A Phonological Study

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Abstract

In any spoken language, intonation is a common phenomenon that can be thought of as verbal punctuation. It facilitates understanding that goes beyond what words alone can express. Up until now, this suprasegmental feature has been the subject of formal and functional research. The aim of this paper is: firstly, identify the role of intonation in disambiguating meanings in English political speeches with reference to that in Arabic; and secondly, understand the types of ambiguities and analyse types of intonations that play vital roles in resolving ambiguities in both languages. The data for the case study are taken randomly from presidential speeches, specifically, from the presidents of the USA ' Donald Trump and Joe Biden'; whereas the Arabic data are taken from 'Nouri Al Maliki and Abdul Fattah el-Sisi'. These data have been analyzed at three levels of intonation ' fall, rise, rise-fall' according to J.C. Wells (2006), notation system.

Keywords: intonation, ambiguity, types of ambiguity, political speech, suprasegmental features, J.C. Wells (2006) notation system.



دور التنغير في إزالة غموض المعاني: دراسة صوتية

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الملخص :

في أي لغة منطقية يُعد التنغير ظاهرة شائعة يمكن النظر إليها بوصفه نوعاً من علامات الترقيم الصوتية، إذ يسهم في تسهيل الفهم بما يتجاوز ما تعبّر عنه الكلمات وحدها. وقد كان هذا الجانب فوق المقطعي حتى الآن موضوعاً لبحوث شكلية ووظيفية على حد سواء. وتهدّف هذه الدراسة إلى: أولاً، تحديد دور التنغير في إزالة الغموض الدلالي في الخطاب السياسية باللغة الإنجليزية مع الإشارة إلى نظيرتها في اللغة العربية؛ وثانياً، فهم أنماط الغموض وتحليل أنماط التنغير التي تؤدي أدواراً جوهريّة في حلّ هذا الغموض في كلتا اللغتين. أمّا بيانات الدراسة التطبيقية فقد استُقِيَّت عشوائياً من خطب رئاسية، وتحديداً من خطابات رئيس الولايات المتحدة الأمريكية "دونالد ترامب" و"جو بايدن"، بينما استُمدَّت البيانات العربية من خطابات "نوري المالكي" و"عبد الفتاح السيسي". وقد جرى تحليل هذه البيانات على ثلاثة مستويات من التنغير، وهي: "الهبوط، والارتفاع، والارتفاع-الهبوط" وفقاً لنظام التدوين الذي وضعه "ج. س. ويلز" (2006).

الكلمات المفتاحية : التنغير، الغموض، أنماط الغموض، الخطاب السياسي، الخصائص فوق المقطعيّة، نظام التدوين لـ ج. س. ويلز (2006).



1. Introduction

The fact that listeners may interpret the same linguistic information differently is a basic challenge in speech comprehension (Cain, Oakhill, & Lemmon, 2004). The intonation is linked to many aspects of the linguistic system, including speaker belief states (Pierrehumbert & Hirschberg, 1990), polite discourse (Astruc, Vanrell, & Prieto, 2016), bias, or presupposition (Henriksen, Armstrong, & García-Amaya, 2016), sentence function (e.g., utterance type, syntactic constituency), and pragmatic function (e.g., information structure; Casielles-Suárez, 2004; Erteschik-Shir, 2007; Casielles-Suárez, 2010). We must clarify its definitions to comprehend intonation. A term used in contemporary linguistics is intonation. It describes the variations in the speaker's voice's phonetic tones that take place when they are speaking continuously. It is the outcome of the vocal cords vibrating. There are very few human languages that do not include it; it is a feature of spoken language. "A series of musical notes, or rhythms, in a specific speech event," is how Mario Pai defines it. He thinks that one advantage of learning this trait is that it makes it easier to identify different voices. According to Bertil Malmberg, (as cited in Wells, 2006) intonation is defined as "variation in the pitch of the voice." Since English intonation is the subject of the current study, it is an essential component of oral communication that can help resolve grammatical ambiguity, transmit information, and portray the speaker's emotions. While incorrect intonation, which frequently serves as a conveyor of utterances' intentions in oral communication and is typically made by second language (L2) learners, can lead to misunderstandings or hinder interlocutors' comprehensibility, proper intonation facilitates the flow of a conversation activity (Saito & Saito, 2017; van Maastricht et al., 2017; Yarra et al., 2018).

The majority of research on intonation in recent years has concentrated on its theoretical aspects, with some scholars analyzing the prosodic encoding of a particular language (Aomin & Li, 2022; Li et al., 2022), the application of language teaching and education (Li et al., 2020; Shutova, Khromov, et al., 2020; Shutova, Nesterova, et al., 2020), and the more specific features of a single type of intonation or sentence pattern (Peust, 2019; Zou, 2019). However, not much research has been done on the function of intonation in disambiguating meaning and how it affects the relationship.

1.1 Objectives of the Study

The current study aims to identify the role of intonation in disambiguating meanings, understand the types of ambiguities and analyse types of intonations that play vital roles in resolving ambiguities.



1.2 Research Questions

1. To what extent the ambiguities can be resolved by intonation?
2. What are the types of intonation patterns that can be used to disambiguate meanings?

2. Theoretical Background

This section concerns with the intonation theory and types of ambiguity to be familiar with by readers who are interested in the studies of prosody and phonological features.

2.1. Intonation Theory

In phonology, intonation is a crucial subject that explores various aspects of speech that go beyond simple word articulation. To effectively communicate meaning, emotion, and emphasis, intonation patterns are essential. An essential component of all speech is intonation. According to O'Connor (1980), "no language is spoken on the same musical note all the time; every language has melody in it." As a result, human speech cannot be monotonized. Regarding intonation's definition, Roach (1992) notes that the phrase has "... two rather different meanings..." In a limited sense, a speaker's voice pitch modulation is utilized to change or convey meaning. In a more general and widely accepted understanding, it is comparable to prosody, incorporating not only pitch fluctuation but also variations in loudness, tempo, and voice quality. Although intonation differs slightly between people and notably between districts, every region of a nation primarily has its unique speech melody (Ward, 1972).

While some researchers determine to investigate the more specific features of a single form of intonation or sentence pattern, recent studies on intonation are strongly related to more than only its theoretical components as the application of language teaching and education (Li et al., 2020). However, they have also made their way into domains such as artificial intelligence in computer science (Lobanov et al., 2018), psychology and cognition (Sereno et al., 2016; Tomlinson et al., 2017; Voyer & Vu, 2016), speech-language pathology (Kuschmann et al., 2017; Zhang et al., 2022), and even music (Karpushina & Parshina, 2020; Mauch et al., 2014).

Various collections of intonation pattern classifications have emerged. Four tones were first utilized by Butler (Butler, 1633): level, fall, superlative, and rise. Walker (1787, as cited in Cruttenden, 1997) then proposed the notion of inflexions, which recognized five tones—rise, fall, solo, rise-fall, and fall-rise—that are used to represent tension. At the end of the 1800s, Sweet (1892, as cited in Palmer et al. 1969) suggested that there are three fundamental tones in English

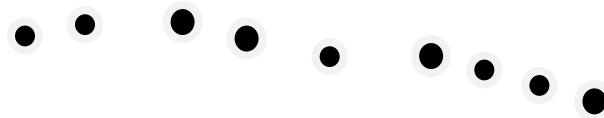


intonation: level, rising, and falling. The division of an English tone into head, nucleus, and tail was first proposed by Palmer et al. (1969). They proposed that the nucleus would be located on the syllable with the highest degree of prominence, which is typically the last stressed syllable, and that the tone of the nucleus would extend to the end of the cluster, which is known as nuclear tone. O'Connor & Arnold (1973), Halliday (1970), Cruttenden (1997), and Crystal (1969) all defined seven types of nuclear tones, although the precise categories differ. Crystal's classification (Crystal, 1969) are: rise, fall, fall-rise, rise-fall, fall plus rise, rise plus fall; O'Connor & Arnold's (1973) classification includes low fall, high fall, rise-fall, low rise, high rise, fall-rise, fall-rise, and mid-level tones; Halliday (1970) includes falling, high rise, low rise, rise-fall, fall plus low rise compound tone, rise-fall plus low rise compound tone; and Crittenden (1997) includes high fall, low fall, high rise, low rise, fall-rise, rise-fall, and level tones.

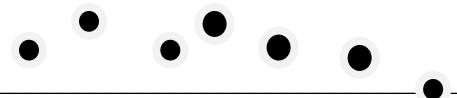
The most fundamental difference in English nuclear tones, according to J.C. Wells (2006), is between falling and non-falling. In his book, he noted that there is a clear degree of meaning shared by the several types of falling tones (high fall, low fall, and rise-fall), as well as by non-falls. This will be very beneficial if simply a broad intonation analysis is done. But in this case, it's frequently required to differentiate between rises and fall rises. This study will only use three fundamental intonation patterns—fall, rise, and rise fall—as well as the intonation notation system developed in his book English intonation: an introduction. As a result, this paper will continue to use this method to determine the intonation of each sentence used. The following sample lines that used Wells notation systems:

1. For Falls

You know \why Mary convince you to meet me?



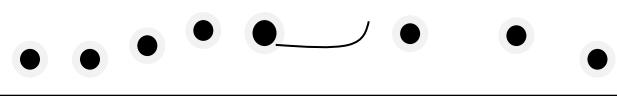
You stayed out all night, didn't you?



2. For Rises

Because you didn't reach here to take the chance.





You've recently made it.



3. For Rises Fall

But it looks like you are waiting for something.



You're going to have to make a choice.



2.2 Types of Ambiguities

There are many types of ambiguities that can be resolved by using intonation theory. These types are syntactic, lexical, and pragmatic ambiguities.

2.2.1 Syntactic Ambiguity

In language, structural ambiguity occurs frequently. Many everyday sentences that individuals interpret have local ambiguity in various places or are entirely (globally) ambiguous. A statement that starts with a local ambiguity is an example with two options:

- a. John knows the teenagers next door.
- b. John knows the teenagers are rowdy.

The basic subject-verb-object structure is present in the first sentence (a). As an argument of the verb knows, the second sentence (b) has a complex structure: the teenagers are rowdy is a sentential complement. However, the following example (The police saw the sniper with the binoculars). There are two possible grammatical structures for such sentences: either the PP with the binoculars is an argument of the verb saw or a modifier of police. It turns out that people typically overlook global ambiguity and have a single favoured interpretation, which makes globally ambiguous statements highly informative about how people receive sentences. Therefore, processing costs are not always associated with ambiguity per se (Fernández, 2010).

The previous example makes it quite evident that prosody and syntax indeed have a link. The degree to which prosody is used in speech production and how it affects human speech comprehension is still unclear, though. Experiments intended to elicit specific types of prosody form the basis of the majority of studies that assert the role of prosody in human speech

interpretation, and specifically in syntactic disambiguation. The results and the degree of "naturalness" of speech observed in these experiments vary significantly. While some studies, like Wilson et al. (2004), use read speech—ambiguous sentences in disambiguating contexts—several other studies use task-oriented dialogue or role-play, with varying degrees of speech predetermined (Bard & Aylett, 1999; Schafer et al., 2000).

2.2.2 Lexical Ambiguity

One main characteristic of the lexicon is that several words are multiply ambiguous. This indicates that words have multiple meanings, each with its lexical entry. In addition to having unclear meanings, many ambiguous words also have unclear form classes. For example, the word "bat" can refer to both a flying mammal and a piece of baseball equipment. Lexical ambiguity is rarely noticed in everyday speech, much like structural ambiguity. Similar to how grammar offers several sentence forms and lexicon offers different meanings for words people use in conversation, the hearer's language processing system quickly and subconsciously resolves both kinds of ambiguity (Fernández, 2010).

According to earlier research, speakers commonly modify their emotional prosody to provide listeners with further details about the objects they are referring to, like size and speed, which they then utilize to clear up any referential ambiguity. For instance, when innovative adjectives like "daxen" were intended to imply big rather than little, they were usually produced louder, slower, and with a lower pitch (Nygaard, et al. 2009). Additionally, when referring to fast-moving objects as opposed to slow-moving objects, speakers spoke more quickly (Shintel & Okrent, 2006). Additionally, listeners can employ intonation as one of several contextual clues to help them distinguish between words (Nygaard & Lunders, 2002). The time course of sentential and semantic impacts on the choice of a suitable meaning to disambiguate words has frequently been the subject of studies on lexical ambiguity resolution. One useful contextual indication for resolving lexical ambiguity is emotional prosody. According to some theories, processing emotional prosody—such as grief and happiness—does not appear to be influenced by L2 competency, and both native and non-native speakers have comparatively good categorization scores of emotional prosody (Bak, 2015). This perspective holds that since native speakers have been able to employ intonation patterns, it should be expected that these signals are universal and that non-native speakers can also use them.

2.2.3 *Pragmatic Ambiguity*

In oral communication, English intonation is a crucial component that can help remove ambiguity, transmit information, and portray the speaker's emotions (Wells, 2006). While incorrect intonation frequently serves as an entry point for the intentions of utterances in oral communication, correct intonation makes conversation activities more fluid. Pragmatic ambiguity can influence interlocutors' comprehensibility or lead to misunderstandings (Saito & Saito, 2017; van Maastricht et al., 2017; Yarra et al., 2018).

It is well known that an utterance's pragmatic meaning is greatly influenced by its tone or prosody. This indicates that the content of what is said and the manner in which it is stated both have pragmatic impacts in speech, and that the two are closely related. Although many pragmatics specialists agree that prosody plays a critical role, it can be difficult to comprehend how it generates these effects (Wichmann & Barth, 2009). Since intonation can express multiple components of the context, especially the pragmatic sense of discourse, it can serve as a prosodic feature to support the meaning of the context.

The pragmatic applications of intonation in pragmatics domains have historically received little attention. Because of this, linguists cannot agree on how to integrate and analyze the way intonation conveys meaning across languages in a coherent manner that includes pragmatics and intonation (Prieto, 2015, p. 1). David Brazil, however, proposed that the context of the interaction should be taken into consideration when analyzing an utterance's intonational aspects. He believes that "the communicative value of intonation is related to the purpose that a particular piece of language is serving in some ongoing, interactive event" (Brazil, 1994, p. 24). As a result, phono-pragmatics is a significant field that investigates the relationship between pragmatics and intonation that has been treated in various ways. In other words, the paper focuses on the function of intonation in separating meanings. Brazil (1997) presents two examples to illustrate how intonation shapes spoken language information.

E.g. // ↗ MARy BROWN// ↘ is a TEACHER//
// ↗MARy BROWN// ↘↗ is a TEACHER//

Brazil claims that all other aspects of these two statements are the same. Nonetheless, differences in the distribution of the two tones and their communication values account for their differences.

The idea of ambiguity has been studied since the first sophisticated theories, specifically in regard to its function in natural language and the communication and argumentative issues or tactics that arise from the various ways that a statement can be interpreted. The issue of determining the optimal interpretation of a speech act is closely linked to ambiguity from a linguistic perspective (Atlas & Levinson 1981; Atlas 2008). According to this perspective, ambiguity encompasses more than just the potential for a lexical item to have multiple interpretations. Rather, it must be viewed as the real or possible dispute or ambiguity surrounding the meaning that should be attached to a statement in a particular situation. Within this larger framework, ambiguity and misunderstanding relate to statements made in a particular context, taking into account not only the utterance's "prehistory" (Mey 2001), but also—and perhaps more significantly—the conversation's goal, the utterance's fictitious role within it, and the institutional and cultural elements that influence meaning.

3. Data Collection

The current study concerns the disambiguation of meanings of utterances by using intonation patterns as an analysis model. The researcher selects data randomly from prominent politicians' speeches. Only (45) excerpts are extracted from four presidential speeches represented by American presidents (Donald Trump and Joe Biden) and Arab presidents (Nouri Al Maliki and Abdul Fattah el-Sisi). The data will be analysed qualitatively and quantitatively to reveal accurate results and findings of disambiguating meanings in discourse.

4. Data Analysis

Only (18) excerpts are selected from the total number of data to be analysed qualitatively by the researcher. The reason behind the selection of (18) excerpts is to avoid tautology and redundancy in the analysis of the case study. The analysis will focus on Syntactic, Lexical, and Pragmatic ambiguity.

Syntactic Ambiguity

*"I have ~~A~~**GREAT** respect for women \& **NOBODY** has ~~A~~more respect for women than I \&DO. "*

Trump leaves room for interpretation in his remarks, which could indicate that he respects women more than others or that no one else does.

Meaning1: using a rise-fall tone on the terms 'great' and 'I do' to emphasize his respect for women and showing his points of view as compared with others.



Meaning 2: the term ‘nobody’ with stress and rising tone implies his ego and criticism of others.

*"We're ↗going to build a **WALL** ↗and Mexico ↘is going to **PAY** for it ↘"*

Trump’s statement has an ambiguity in its meaning, it means that either Mexico will pay the money and costs to build the wall or participate in other non-financial means.

Meaning1: the rising tone on ‘wall’ and ‘pay’ indicates that Mexico must pay money directly in an explicit way.

Meaning 2: using a falling tone on ‘Mexico’ and ‘for it’ means that Mexico can participate indirectly in non-financial means.

*"We need ↗**DOCTORS** and ↗**NURSES** and ↗**ADMINISTRATORS** ↘who can take care of the ↗sick and the ↘elderly. "*

In Biden’s speech, the statement raises the question of whether doctors, nurses, and administrators take care of patients and old people or administrators care only for the elderly while doctors and nurses focus on patients.

Meaning1: rising intonation is used to list items ‘doctors, nurses, and administrators’ to illustrate that all groups take care of patients and old people.

Meaning 2: using a pause before ‘administrators’ and a falling tone on the phrase ‘who take care’ promotes the alternative meaning ‘ each group has a different role’.

*"We will **INVEST**↗in **TEACHERS** ↗and **SCHOOLS** ↘that educate ↘our children ↗."*

Biden’s statement includes the investment in both teachers and schools or only in schools that educate children.

Meaning1: the rising intonation of ‘invest and teachers’ emphasizes the meaning that the investment will cover both teachers and schools.

Meaning 2: the falling tone on the phrases ‘that educate’ and ‘our children’ provides the other meaning that the investment is only to schools that educate the children.

"علينا ندعم ↗ الأشخاص ↗ الذين يسعون ↗ إلى التغيير ↗ في ↗ الحكومة"

Al Maliki's statement has an ambiguity in which he refers to the people who work within the government or the change comes from people who are outside the government.

Meaning1: the rising tone on 'الحكومة' indicates the people who are participating in the government.

Meaning2: the falling tone one the 'الأشخاص' stresses the ordinary people who should make changes in the government.

"زيارة الأصدقاء ↗ يمكن أن تكون ← مملة ← "

El-Sisi uses these vague statements to show whether the way of visiting him is boring or the friends themselves are boring.

Meaning1: placing the stress and rising intonation on 'زيارة' emphasizes the meaning that the way of visiting is boring.

Meaning2: using rising intonation on 'الأصدقاء' indicates the alternative meaning that the friends themselves are boring.

Lexical Ambiguity

"We're going to make America ↗**GREAT** ↴, a↗gain ↴."

Trump uses the adjective 'great' in this statement with multiple meanings which are determined by the levels of intonation. As in the following two meanings.

Meaning1: the employment of a rising tone on 'great' means that America is in the way of excellence or improvement.

Meaning 2: The falling tone on 'great' indicates that the United States is large.

"**THEY** are ↴ laughing at ↗**US**, but ↴ not for ↗ long. "

The statement used by Trump includes ambiguous pronoun references. The president using 'they', who are they? Are they other politicians? Other countries? The media?

Meaning1: the rising intonation of 'they' means that the recipients know the president refers to a particular group which has already known to them.



Meaning 2: the stress and rising tone of ‘us’ refers to the unity of the in-group and Trump presents himself and his followers as victims to those who are laughing.

*"I'm in the final weeks ↗ of my **PRESIDENCY** ↘. You don't have to **CLAP** ↘ for that ↗."*

In Biden's speech, the statement marks the end of his presidential term by the use of a falling tone on ‘presidency’. The phrase ‘you’ don’t have to clap’ can be interpreted as a sincere statement or a self-deprecating sarcasm.

Meaning1: the rising tone on ‘clap’ indicates the meaning of a sincere statement that is to be taken seriously, guiding the recipients’ understanding.

Meaning 2: the falling tone on ‘clap’ can be interpreted as a touch of sarcasm and self-flagellation.

*"The **SYSTEM** is ↘broken, but we ↗hope it will be ↘fixed. "*

Biden’s statement provides multiple interpretations of the term ‘system’ because the word can refer to the government, politics, social life, healthcare system, or electoral process.

Meaning1: The upward intonation on ‘system’ indicates that the speaker addresses the general state’s institutions as dysfunctional.

Meaning2: The downward intonation of ‘system’ indicates that the speaker means a particular system related to the political process.

"إننا نعمل على تعزيز الديمقراطية ، ↗ وكل الطوائف ← والقوميات ← لحظى بالاحترام ↗ في العراق "

In his speech, Al Maliki states whether all sects ‘كل الطوائف’ and all nationalisms are equally respected in Iraq or the priority to the sects than the nationalisms in a hierarchical paradigm.

Meaning1: the rising tone on ‘الطوائف’ and ‘القوميات’ emphasizes the equality for both of them with respect from the government.

Meaning 2: the use of the falling tone with a pause between ‘الطوائف’ and ‘القوميات’ can be interpreted that the respect is oriented toward the sects rather the nationalism.

"نحن ↗نبحث عن ↗ الإنسانية ← المفقودة في ↗ أنقاض ← الصراعات العيشية ← "

The statement that is extracted from el-Sisi's speech has a lexical ambiguity in the phrase 'lost humanity' 'الإنسانية المفقودة' which could refer to the loss of human lives or the loss of mercy, humanity, and compassion within the souls of human beings.

Meaning 1: the falling and sombre tone on 'الإنسانية' could be interpreted as the lament for losing the souls of humans.

Meaning 2: the rising and contemplative tone on 'الإنسانية' may suggest longing for the loss of mercy.

Pragmatic Ambiguity

"They're ↗ doing an a ↘MAZING job, really in ↗CREDIBLE. "

Trump employs contextual ambiguity in the statement which is unclear whether he praising and thanking a particular group or mocking and sarcasm them.

Meaning 1: the rising tone on 'amazing' and 'incredible' indicates that trump thanking and praising somebody.

Meaning 2: the falling tone or flat intonation on 'amazing' and 'incredible' with a pause prior to the phrase ' really incredible' means mocking and being sarcastic.

"China? ↗ Oh, they LOVE US ↘ , don't they ↗ ?"

Trump, here, shows his attitude towards China. Is his attitude positive or negative? Critique the diplomatic relation or praise it?

Meaning1: the use of the rising tone of 'love us' indicates the criticism and mocking toward China.

Meaning2: the use of a falling tone on 'love us' promotes the factual statement and improvement of diplomatic relations between the two countries.

"We ↘were WITH YOU↗then; we ↘are with you↗now."

President Biden uses the statement that means either the physical presence with his followers or he means the moral support for them.



Meaning 1: the rising tone of the phrase ‘with you’ indicates the physical presence.

Meaning 2: using the falling tone on the same phrase could mean the alternative interpretation which is moral support.

" \If we don't act **NOW**, \who knows \what will **HAPPEN**? "

The rhetorical question in this conditional sentence used by Biden to mark either a call for immediate action or expressing the uncertainty and doubts.

Meaning 1: the use of rising intonation on ‘now’ illustrates a call for urgent action.

Meaning 2: the falling tone on ‘happen’ implies the doubts and uncertainty.

أَنَّا نَتَجَهُ إِلَّا نَحْنُ \مَصَالِحَةُ الْوَطْنِيَّةُ \الَّتِي يُمْكِنُ أَنْ تَعْزِزَ \الْعَمَلِيَّةُ السِّيَاسِيَّةُ الْجَارِيَّةُ"

Al Maliki's statement employs pragmatic ambiguity: either the efforts of reconciliation are progressive between all parties of the political process in Iraq or he implicitly criticizes all parties of reconciliation efforts.

Meaning 1: the rising tone on ‘المصالحة الوطنية’ promotes Al Maliki's opinion about the efforts of reconciliation which is progressive between all parties.

Meaning 2: the falling tone on the same phrase indicates the alternative meaning which is the criticism of the parties.

"بِفَضْلِ اللَّهِ، \أَنَا عَبْدُ الْفَتَاحِ السِّيَسِيِّ \رَئِيسُ جُمْهُورِيَّةِ مِصْرِ الْعَرَبِيَّةِ، \أَفْتَحْ رَسْمِيًّا \قَنَاطِيلُ السُّوِيسِ الْجَدِيدَةِ"

In his declaration, el-Sisi uses the phrase ‘بِفَضْلِ اللَّهِ’ which indicates two interpretations.

Meaning 1: the employment of a rising tone on ‘بِفَضْلِ اللَّهِ’ emphasizes the religious importance of the event and deeds of Egyptians.

Meaning 2: the use of a falling tone in the phrase ‘بِفَضْلِ اللَّهِ’ can be interpreted as a usual opening and reflecting Muslims identity without deep emphasis.

The qualitative analysis of the selected excerpts from the total data provides a comprehensive understanding of the role of intonation in the disambiguation of meanings. The thematic analysis

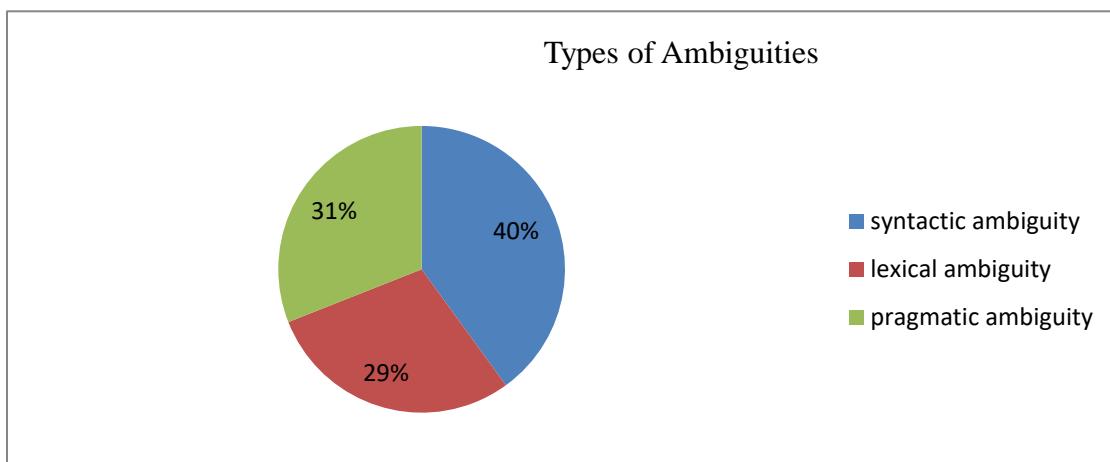


focuses on resolving meaning in syntactic, lexical, and pragmatic disambiguation to reveal that the meaning of any utterance can be determined by the levels of intonation whether falling, rising, neutral, fall-rise, or rise-fall tones. The next step of analysis is the quantitative method to explore the number of intonation occurrences that reveal the ambiguity in the data under study. As mentioned previously, the number of excerpts extracted from presidential speeches is (45) statements that will be examined statistically as shown in the tables and charts below.

Table 1: Types of ambiguity occurrences in the selected data

Types of Ambiguity		
Syntactic ambiguity	Lexical ambiguity	Pragmatic ambiguity
18	13	14

Chart 1: The percentages of types of ambiguity



Most ambiguities occurrences are syntactic with a percentage of (40%) of the total number of data. The second prominent rate of ambiguities is the pragmatic, which is (31%) respectively, while lexical ambiguity occurs with only (29%). However, these percentages reveal the multiple meanings of ambiguity in speech through the recipient's diagnosis of the tone of voice that reveals that ambiguity indicates confirmation, sarcasm, interest, support, the political positions of others and changing the recipient's point of view to be convinced by a certain political agenda. Therefore, the tone plays a fundamental role in unravelling the ambiguity and conveying the idea as the recipient wants it.

Table 2: The occurrences and percentages of the levels of intonation.

Politicians	Fall tone	Rise tone	Rises fall tone	No. occurrences
Donald Trump	8	7	1	16
Joe Biden	6	2	2	10
Nouri Al Maliki	5	4	2	11
Abdul Fattah el-Sisi	4	3	1	8
Total intonations percentages	51%	35.5%	13.5%	45

Chart (2): the number occurrences of excerpts extracted from speeches.

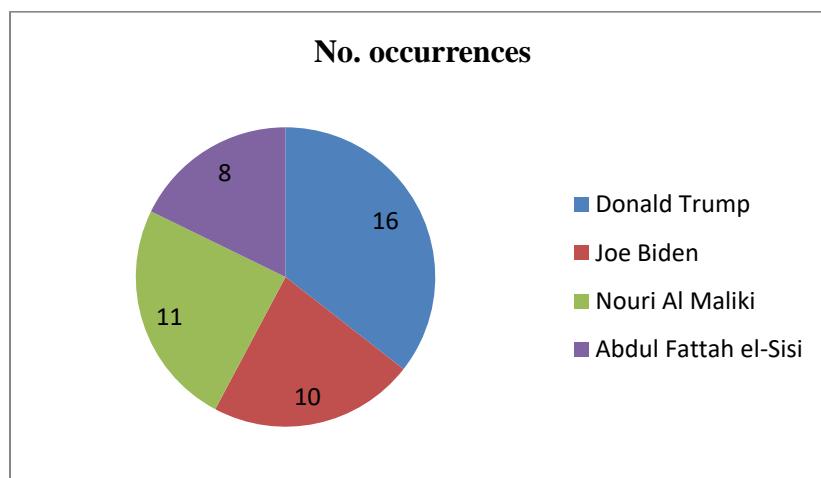
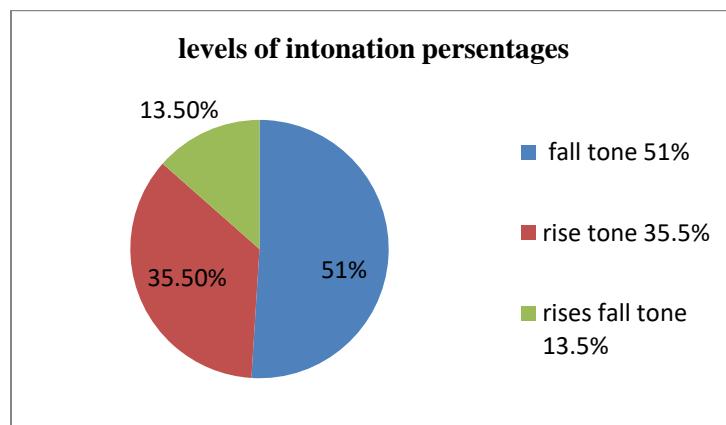


Chart (3) : the percentages of intonation's levels in all excerpts



The distribution of fall, rise, and rise-fall tones among Donald Trump, Joe Biden, Nouri Al Maliki, and Abdul Fattah el-Sisi is illustrated in Table (2) and the accompanying charts, which bring out the significance of intonation in disambiguate meanings of speeches. Fall tones, which are the most commonly utilized at (51%), indicate how important they are for conveying a sense of

urgency , determination, and assertiveness—qualities that are crucial for utterances. For example, Biden used fall tones slightly more frequently (60%) than either Trump or el-Sisi, demonstrating a combination of assertiveness and openness, whereas Trump and el-Sisi both used fall tones (50%) of the time, indicating a desire for control and resolve. Al Maliki's attempt to tackle complicated topics is also demonstrated by his usage of fall tones (45.5%), which are tempered with rise and rise-fall tones. Such patterns demonstrate how different rhetorical strategies and political or cultural backgrounds influence intonation decisions to suit the needs of speeches.

Rise tones, which make up 35.5% of instances, frequently promote audience participation. Their frequent appearance in speeches by Trump (7 times) and Al Maliki (4 times) points to a deliberate use of intonation to handle complex or changing subjects. Despite being uncommon (13.5%), rise-fall tones are used for sophisticated delivery or emotional emphasis, indicating that they are used selectively to prevent core messages from being misunderstood. Moreover, these results are reinforced by charts (2) and (3), which show the strategic variability in rise and rise-fall tones while graphically illustrating the predominance of fall tones. These graphs clarify the significance of intonation patterns in addressing audience-specific rhetorical needs and managing ambiguous meanings.

5. Conclusion

To conclude, the employment of intonation patterns in political speeches, including falling, rising, and rising-falling tones, play a crucial role in resolving ambiguous meanings and conveys attitudes towards recipients in interactions. Through intonation levels, speakers can capture the recipients' attention, provides new information, stresses on particular concepts, convince others toward a specific idea. Through the analysis of political speeches as a case data of study, the use of various levels of intonation helps in providing many functions, helping , enhancing speakers ability to influence listeners and make them effectively engage in their speech. Fall intonation is frequently used to emphasize significant phrases or ideas and to give statements a sense of completion. Rise-fall intonation promotes important ideas and presents fresh, important information that can be interpreted easily by the hearers. Rising intonation is employed to connect concepts to provide a sense of continuity and to increase participation and awareness through inquiry. These selections of intonation patterns improve the speakers' ability to communicate effectively by allowing them to draw out important ideas, attract the audience, offer innovative viewpoints, and direct their comprehension to solve any vagueness in utterances.



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