

Full Length Research Paper

Pausing preceding and following to in to-infinitives of Obama's G-20 summit speech in London: Read vs spontaneous speech

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Research on pausing in read and spontaneous speech has been the concern of researchers in the past few decades. While elicited data reveals that in read speech pauses preceding heads of phrases are produced considerably longer by native speakers of English than pauses following heads in read speech, the situation tends to differ in spontaneous speech. Based on this premise, this study reports on President Obama's audio recording of the speech he made in the G-20 Summit in London in 2009, thus aiming to describe different silent pausing strategies, as they were employed by the President during his address to an international community. The recordings of both the first part of the speech he made during the opening of his address, assumed as a recitation of previously written text and during question-answer session, when he spontaneously responded to questions of international journalists were measured in milliseconds. Measurement was conducted utilizing Goldwave, the sound analyzing software. Each part was analyzed separately in terms of pauses preceding and following the to particle in to-infinitive phrases, and later, a comparison between the two types, read and spontaneous, was made in order to observe any potential differences/similarities between the two types of speeches. Obtained results display significant differences between pausing preceding and following to in read speech, in that the to particle was kept intact with the infinitive phrase while in spontaneous speech, preceding and following pauses did not display any statistically significant differences in terms of duration.

Key words: Pausing, prosody, speech, teaching speaking/reading, principles and parameters theory.

INTRODUCTION

In the history of thought much debate has focused on the overriding principle in the cognition and behaviours of man. While some thinkers including Socrates and Plato argued that some innate faculties were effective in man's cognitive and psychological growth, some including Locke and Hume advocated the primacy of experience in man's cognition and psychology. Drawing mainly upon

Plato and Socrates, Chomsky tried to account for the development of language capacity in man referring to reason. He elaborated his ideas in what he termed as Universal Grammar Theory (UG) and a subset of this theory -Principles and Parameters Theory (PPT), which aims to explore universal principles in every language and varying parameters across languages.

According to PPT, parameters are certain linguistic features which vary from one language to another. Those parameters are effective not only on how phrases in a sentence are made up but also on how they are uttered. Particularly, the rhythm of the speech is partly determined

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by the formation of phrases. English, as a head-first language, has verbs and prepositions before complements (Cook and Newson, 1996) and thus the *to* particle acts as the head of the *to*-infinitive phrases (Truckenbrodt, 2005).

In this paper, we aim to investigate the rhythm of President Obama's speech. In particular, we are interested in the difference between the rhythm of the read and spontaneous speech. With rhythm, we do not mean the average speed of the president's reading and speaking in general; more specifically, this paper addresses the issue of pausing times preceding and following "*to*" particles in *to*-infinitive phrases in the read and spontaneous speech of the President. In another study focusing on the pausing time difference preceding and following "*to*" particle in *to*-infinitives in the read and spontaneous speeches of native speakers of English, Bada and Genç (2008) found that pausing preceding "*to*" was significantly longer than in the following position in read speech and in spontaneous speech it was just the opposite.

Thus, our motivation for this study is twofold: on the one hand we are interested in to what extent reading and speaking patterns of the President exhibit similarities and differences with those of the participants in Bada and Genç's study, which would also provide novel justification for or contradict the arguments in Bada and Genç's study.

Secondly, from a PPT perspective, we see the strengths or weaknesses of Obama's speech, in particular, we see to what extent the integrity of infinitive phrases were observed in the speech of a president, considered as an effective speaker by most people.

RELATED RESEARCH

Studies on pausing dates back to the late 1960s; since Goldman-Eisler's (1968) study, scholars' attention has been drawn to the issue of pausing and referring to Goldman-Eisler more than 250 ms figure has often been considered as a standard criterion because less pausing times than 250 ms has been regarded as a necessary factor in articulation.

In the studies on speaking, researchers seek to find out the correlation between boundaries and pausing. For instance, Hansson (2005), studying native Swedish speakers' oral discourse, showed that about 73% of the pauses in spontaneous speech occur in one of the following three positions: a) between sentences, b) after discourse markers and conjunctions and c) before accented content words. In another study Esposito et al. (2004) revealed that like the adults' oral discourse, the children's oral discourse pausing, marks the boundaries of narrative units. In yet another study on pausing in

speech Van Donzel and Koopsman-Van (2005) found that both in spontaneous speech and in prepared speech, pausing is employed to structure the continuation of the discourse.

Oral discourse has not been the sole investigation in pausing studies: researchers have also dealt with pausing in reading or which is sometimes termed as read speech. In two separate studies for instance Megyesi and Gustafson-Čapková (2005; 2005) found that while silent pauses in professional reading occurred mainly at sentence boundaries, in non-professional reading most of the silent pauses occurred at phrase boundaries. In another study on pausing phenomenon in read speech, Fant et al. (2003) compared pausing times between novel reading and radio bulletins. They found that while the average pausing time between sentences in radio bulletin was 0.530 s; in novel reading, it was found to be 1.100 s. From a quite different standpoint, Krivokapic (2007) investigates the possible factors playing a role in determining the duration of pauses between utterances or phrases. With reference to the results, she argued that while preboundary effects are due either to linguistic structure or to information load, linguistic structure and cognitive factors are effective on the post-boundary pause length.

Bringing a new aspect to pausing studies, Bada (2006) investigated the pausing difference preceding and following '*that*' in the use of *that* clauses by English native speakers and Turkish speakers majoring in English. He found that although pausing preceding *that* was much longer than in the following position in the production of native speaker group, it was observed to be just the opposite with the Turkish group. Again, comparing native speakers and non-native speakers' pause patterning, Riazantseva (2001) in her study divided Russian speakers of English into two proficiency groups as high and intermediate and compared their pause patterns with those of 20 native speakers of English. She found that the advanced students' pause patterns were in line with those of the native speakers.

Trask (1999) argues that prosodic phenomena are notoriously difficult to study; researchers however, have made progress in examining at least some of these phenomena. Our endeavour with this study is yet another progressive step in examining the pausing aspect of prosody. This study is concerned with the pausing strategies of a native English speaker, the President of the US. We specifically focused on pausing times preceding and following '*to*' in *to*-infinitive phrases in Mr. Obama's press conference speech in London following the G-20 summit. Since the study only focuses on intrasentential pausing regarding *to*-infinitives, intersentential pauses were not taken into consideration.

To the best of our knowledge no president's prosody has been the subject of either a single study or a part of

Table 1. T-test result for pausing times preceding and following to-infinitives in reading (RST).

Pausing time	N	X s	SD	Df	t	p
PP	39	0.0855	0.166	38	2.530	0.016
PF	39	0.0175	0.022			

larger studies. Therefore, in this study there is no equivalent point of reference to compare and contrast the speech analyzed.

To-Infinitives

With its chief role as a complementizer preceding infinitive forms of verbs, the infinitive marker *to*, which unlike most other words, does not fit into any category, also precedes two complex infinitive markers in order *to*, so as *to*, which introduces adverbial clauses expressing purpose. Finally, the infinitive marker *to* occurs as part of other multi-word lexical units including *ought to*, *used to*, *have to* (Biber et al., 2007). Below are three sentences exemplifying the three uses of *to* mentioned earlier:

She did not hesitate to tell the boss that some employees were stealing office supplies.

The doctor operated in order to save his patient's life.

The teacher ought to give them a test this week.

Research questions

In our analysis, we aim to investigate the following questions:

Does length of a pause preceding *to* in to-infinitive phrases differ from a pause following *to* in President Obama's read and spontaneous speech, delivered at G-20 summit in London? And, if so, is the difference statistically significant?

What may be the potential reasons for any difference, if there is any, between pausing time preceding and following *to* in to-infinitive phrase?

MATERIALS AND METHODS

President Obama met the members of the press at the news conference at ExCel Center in London at the conclusion of the G20 summit on April 2, 2009. His speech at that conference consisted of two parts: in the first part, he spoke about his plans to deepen international connections, which we assume was pre-prepared and thus considered as read speech text (RST) and the second during which he answered the questions of journalists of different nationalities— question/answer session —considered as spontaneous speech text (SST). The conference started at 6:44 PM and ended at 7:36 PM at local time. His read speech text consists

of 1368 words and spontaneous speech, of some 4300 words. The transcription of the President's speech, questions directed by the journalist and Mr Obama's answers were published by the website www.whitehouse.gov and the video of the press conference can be accessed at the web site <http://www.americanrhetoric.com/speeches/barackobama/barackobamag20summitpressconference.htm>.

Data analysis

The US President's news conference speech following the G20 summit held in April, 2009 in London was analyzed in a twofold procedure. Upon determining the use of *to* in read speech and spontaneous speech sections, we conducted a t-test between preceding and following times of *to* in to-infinitives, in read and spontaneous speeches. Measurement was conducted utilizing Goldwave, the sound analyzing software. The instrument utilized in the study is GoldWave Version 4.26, "a comprehensive digital audio editor, rated as one of the best on the ZDNet Software Library, receiving 5 stars!" features, of GoldWave can be cited as below:

1. Plays, edits, mixes, and analyzes audio;
2. Applies special effects, such as fade, equalizer, doppler, mechanize, echo, reverse, and more;
3. Digitally remasters and restores old recordings with noise reduction and pop/click filters;
4. Records audio from cassettes, records, radio, etc. through computer's line-in;
5. Makes digital copies of audio CD tracks using the CD audio extraction tool;
6. Views a variety of real-time graphs and VU meters;
7. Converts files to/from different formats, such as wav, mp3, ogg, aiff, au, vox and even raw binary data 1

RESULTS AND DISCUSSION

In the first part or step of our analyses, we initially conducted an analysis on the preceding and following pausing times that is. we analysed and conducted a t-test on the preceding and following times of "to" in President Obama's read speech text. In Table 1, we can observe the frequency of to-infinitives, mean pausing times and significance of the difference between preceding and following pausing times in read speech text.

As seen in Table 1, the total frequency of "to" as infinitive marker in read speech was only 39. The mean pausing time preceding prepositions was 0.0855 s and

¹ For more information the reader is referred to www.goldwave.com

Table 2. T-test result for PP and PF to- infinitives in speaking (SST).

Pausing time	N	X s	SD	Df	t	p
PP	100	0.1230	0.354	99	0.123	0.902
PF	100	0.1287	0.354			

the following time 0.0175 s. The t-test result for both measurements, $p = 0.016$, suggests a significant difference. Below are a few verbatim examples of infinitive phrases from the President's read speech text:

Faced with similar global challenges in the past, the world was slow to act, and people paid an enormous price.

The United States is also partnering with the private sector to clean out the troubled assets,...

And we also agreed on bold action to support developing countries, so that we aren't faced with declining markets that the global economy depends on.

In the sentences above and other sentences with to-infinitive phrases, Mr. Obama gave significantly more pausing time in the preceding positions and subconsciously hinted at the integrity of infinitive phrases. The President's pause patterns are in line with those of the native speaker participants in Bada and Genc's (2008) study in that both the President and the other native speakers gave more pausing time in preceding to in their read speech. In the second part of our analyses, we conducted an analysis on the preceding and following pausing times. Again we analysed and conducted a t-test on the preceding and following times of to in President Obama's spontaneous speech text. In Table 2, we can observe the frequency of to-infinitives, mean pausing times and significance of the difference between preceding and following pausing times in spontaneous speech text.

As seen in Table 2, the total frequency of "to" as infinitive marker in speaking was 100. The mean pausing time preceding prepositions was 0.1230 s and the following time 0.1287 s. The t-test result for both measurements, $p = 0.902$, does not suggest a significant difference. Below are a few verbatim examples of infinitive phrases from the President's spontaneous speech text:

We wanted to make sure that we had a strong, coordinated response to growth.

And how each individual nation acts to deal with that is still going to be vitally important.

And a crisis like this reminds us that we just have to put in some common-sense rules of the road.

Mr. Obama's pausing pattern following and preceding "to" in spontaneous speech in the above examples and

other sentences including to-infinitive phrases differed from the pausing pattern in read speech. From the two analyses, the results of which are displayed in tabular forms, we can observe that while pausing following and preceding to, in to-infinitive phrases in spontaneous speech did not yield a significant result, the difference pausing preceding and following to in read speech was significant.

The role the "to" particle plays as head as argued by the PPT, asserts itself in prosodic features of the President. We were able to observe that pausing strategies implemented by the President were partly in line with this principle. While the President produced pauses in read speech displaying the head function of to in to-infinitive phrases, in spontaneous speech however, there was no significant difference between pausing preceding and following to. Thus there was no indication of the head role of to in the spontaneous speech of the President.

Thus our findings in this study are partly in line with the findings of Bada and Genc (2008) in that, as with the native speakers participating in their study who gave more pausing time preceding "to" in read speech, so did Mr. Obama in read speech. Unlike the patterns in spontaneous speech of the participants in Bada and Genc's study, however, Mr. Obama's preceding and following pausing times did not reveal a significant difference. The findings of Bada and Genc's (2008) study revealing more pausing time following to in to-infinitives in spontaneous speech and again more pausing time preceding to in read speech provide partial support for PPT since strategies of the participants in their study of English in reading and speaking were found to be in agreement with PPT. Thus pausing times in Mr. Obama's spontaneous speech and those of the native speakers in Bada and Genc's study contradict, which would mean that while on the one hand we see some native speakers being aware of phrase integrity in their native tongue, on the other, we see one native speaker who does not emphasize this integrity due to his rapid cognitive processes.

The context of the speeches also accounts for the pausing patterns differences between Mr. Obama and the native speakers of English participating in Bada and Genc's study. While the participants of Bada and Genc's study first watched a movie and then elaborated on various aspects such as themes, characters, plot and messages in the film, Mr. Obama was conversing with

the journalists. Therefore, although the participants' speech was more like of a monologue kind, the President did get involved in dialogues. Regarding effects of different tasks on pausing patterns, Schönplflug (2008) argues that specific patterns of pauses are linked to specific cognitive processing in a plausible way, is supported by measure of mean pause length. The child participants of Schönplflug's study were asked to either retell the story verbatim or retell its gist. The results showed that mean pause lengths were longer when verbatim retrieval was asked for, as compared to gist retrieval and high correct gist recall was characterized by more and shorter pauses.

Conclusion

In this study we focussed on a speech given by the US President, Hussein Barack Obama at the news conference held at ExCel Center in London at the conclusion of the G20 summit on April 2, 2009. Our aim was to investigate whether there was any significant discrepancy between pausing time preceding and following "to" in to-infinitives in the read speech and spontaneous speech of the President's press conference.

Findings of this study reveal that while preceding pauses in to-infinitive phrases in read speech were significantly longer than the following ones, in spontaneous speech; however, there was not a significant difference between the preceding time and following time pausing figures. Thus, one interesting outcome of this is that while the President's pausing patterns in read speech comply with the PPT, the pausing patterns in spontaneous speech contradict with those of read speech with the PPT. We argue that the difference in pausing patterns between spontaneous speech and read speech might either be due to individual differences (some people could have faster cognitive process than others) or to the context of the speech.

In conclusion, this study reveals, albeit referring to only one person, that read speech and spontaneous speech have different dynamics. Upon an analysis of the President's speech this difference is made clear;

regardless of the fact that "to" functions as the head of infinitive phrases, pausing time preceding and following to in read and spontaneous speeches display differences

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