

REVIEW COMMENTS:

PHONOLOGICALLY MOTIVATED ORTHOGRAPHIC VARIATION OF *THAMONG* GHANAIA N STUDENTS ON WHATSAPP

Abstract

In recent times, the use of Computer Mediated Communication has enabled researchers to acquire vast authentic, natural and current data to explain diverse human language phenomena. Researchers have for some time now been unearthing interesting innovations by users of social media as these users cumulate aspects of phonology and orthography. This study investigates how and why students on WhatsApp use alternatives of the grapheme sequence *th* for words that are pronounced with the voiced and voiceless dental fricatives. Results show that the students use *d* for *th* in some words that are pronounced with the voiced dental fricative, mirroring what they actually do when speaking, when the voiced alveolar stop replaces the voiced dental fricative (*th*-stopping). On the contrary, when it comes to words that are pronounced with the voiceless dental fricatives, it is *f* rather than *t* that is the variable of choice, even though in speech it is the voiceless alveolar stop and not the voiceless labiodental fricative that is the commonest variable for the voiceless dental fricative (pointing to *th*-fronting). The findings about the use of *f* for *th* indicates that in as much as alternative spellings can be phonologically motivated, sometimes, the alternative forms may not exactly mirror what happens in speech. The reasons given for why these variables are used when writing on social media include ease, to show solidarity or the communality that exists between the users and finally to prove that one is also 'hip' and abreast with current trends.

Keywords: Computer Mediated Communication, *th*-stopping, *th*-fronting, social media, orthography

1. Introduction

Humans have an innate compulsion to communicate - we cannot help it. It is through communication that we survive. For this reason, humans will forever be searching for new and innovative ways to make communication easier, faster and more fun. The advent of social media has made this possible. Social media includes all those computer websites and various applications that allow us to create, consume and share information as a way of being part of virtual social networks. Some common social media sites are Facebook, Twitter, Instagram, WhatsApp, Google +, SnapChat, Viber, Pinterest, Reddit, etc.

Just like speech communities, communities of practice and real (as against virtual) social networks have for years been avenues for the study of human communication, social media is fast becoming another research ground. The advantages of using social media data in sociolinguistics, for instance, are numerous. For one thing, the researcher is presented with innumerable collection of data which means the possibility of discovering very diverse and interesting sociolinguistic occurrences in a natural setting. For this reason, in the last couple of decades, many language related studies have been done using data from social media. Researchers like Yates (1996) and Tagliamonte and Denis (2008) for instance, used instant messaging data on social media and compared this to speech and writing. Baron (2004) also used instant messaging, but he went a step further to do a quantitative study of the use of

Comment [A1]: indicate

Comment [A2]: which 'forms' are being referred to here? Do you mean sounds or letter of the alphabet?

Comment [A3]: The phonological motivation has not come out clearly here. The reasons adduced here have nothing to do with phonology.

Comment [A4]: with

abbreviations and emoticons. Asante's (2016) work touches on the various word formation processes employed on social media, while Paolillo's (2001) was on code switching. Walther and D'Addario (2001) and Schnoebelen (2012) took a pragmatic look at the use of emoticons on social media, but Eisenstein, O'Connor, Smith and Xing (2010) and Doyle (2014) investigated variations in writing associated with Twitter users' geographical location.

Comment [A5]: once this part of the sentence does not directly related to the first, you can split the sentence into two.

Comment [A6]: The introduction looks more of a review of literature than an actual introduction. We will expect to know the purpose of the paper, perhaps to methodology, and findings and conclusions made here.

Comment [A7]: Please rephrase for proper synthesisation.

Comment [A8]: What does 'it' stand for as used here? CMC?

Comment [A9]: Can you define CMC?

1.1. Computer Mediated Communication

Thurlow, Lengel and Tomic (2004:83) describe any kind of communication that we engage in via the use of electronic devices such as computers or mobile phones as Computer Mediated Communication (CMC). Stasser (1992) sees it as a way through which we broker meaning in different situations we find ourselves, while Jones (1995) asserts that through CMC, social relationships are created and maintained.

Comment [A10]: This is the third use of the term 'emoticons' so far and I supposed you spell it out at the first use.

Comment [A11]:

Comment [A12]: Which of the two sites is this?

Comment [A13]: With which one?

Communication using a computer can be via sound only, text only or both sound and text. Because technology has made it possible to convey emotions and even non-verbal cues through the use of emoticons (emotional icons), CMC affords communicators the opportunity to put together the dynamism of speaking and writing (Kačmárová 2005). Some of these sites are synchronic while others are asynchronous. This means that one can communicate with others regardless of time or place through a cost effective means. What is more, users are able to save conversations for later.

Users are also at liberty to be creative with words, falling on various word formation processes to come up with innovative and interesting words. Okeke and Obasi (2014) mention that because of the cost involved in sending SMS, users are usually forced to think of ways of getting all they have to say onto one page and in trying to do this, they create new words. Asante (2016: 21-22), however, does not agree. To her, "It is the nature of CMC itself that makes people become creative" and not the cost since some sites like WhatsApp and Facebook do not place any restrictions on the length of a chat. Plester, Wood and Joshi (2009) as well as Herring (2012) reiterate that unlike in a formal learning environment like a classroom where learners may feel intimidated and afraid of being ridiculed for mistakes made, with CMC, there are no laid down rules of putting words together to make meaning, therefore users are free to go to whatever extent they wish to, as long as those they are communicating with understand them.

Comment [A14]: Space

According to Herring (2012), even though the grammar of spoken language incorporates the phonology, morphology and syntax of a language, when it comes to CMC, phonology is mostly left out and rather replaced with typography and orthography. This assertion is true to a large extent, for as Asante (2016) illustrates,

When a user chooses to write 'you' as /u/ in CMC, what the user has actually done is some kind of phonological exercise. The user has replaced the word with a letter that shares phonetic similarity with the most sonorant sound of the transcription of the represented word (Asante, 2016:13)

Comment [A15]: chooses

Comment [A16]: sonorous

Eisenstein (2015) reaffirms this by saying that some spellings in CMC may be described as being phonetic in the sense that they conform to some conceivable pronunciation of the word. He explains that some respellings can be said to be phonetically motivated because,

Phonemes are cognitively aligned to graphemes or grapheme sequences, so that patterns of substitution or deletion on the phonetic side give rise to analogous patterns in orthography. For example, *g*-deletion corresponds to an alternation between the coronal and velar nasal; this phonetic substitution would then license an analogous respelling in which the *-ing* grapheme is substituted by *-in* (Eisenstein, 2015:162)

It is this kind of spelling that this study focuses on. This current study investigates and describes what alternatives are used for the spelling of *th* words (words that are pronounced with the voiced and voiceless dental fricatives) on WhatsApp by a group of university students of English. It also finds out the reasons for these alternatives.

2. Background

According to the World Atlas of Language Studies, dental fricatives occur in about 43 (7.6%) of the languages surveyed. English is one of the 43. As English continues to spread throughout the world, speakers of English as second or foreign languages whose L1s do not have the dental fricatives have difficulty producing them.

English has the voiced /ð/ and the voiceless /θ/ dental fricatives. Gimson (2001: 184-185) establishes that learners of English will usually replace the dental fricatives with the alveolar stops /t/ and /d/. French and German speakers tend to rather replace them with /s/ and /z/, while speakers of Hindi use /tʃ/ and /dʒ/ respectively. Among the Yoruba speakers of English in Nigeria, Owulabil (2012) concluded that his participants tend to replace the dental fricatives with the dental stops. Apart from the replacement of the dental fricatives with alveolar stops and alveolar fricatives, there are occurrences of the use of the voiceless labiodental /f/ for the voiceless dental [θ] by Slovak students (Metruk, 2017). Wong (2005) recorded the use of [f, v, d, t, s, z] by Hong Kong ESL learners.

Generally, when the dental fricatives are replaced by dental stops, the phenomenon is referred to as *th*-stopping, and when they are replaced with the labiodental fricatives, *th*-fronting has occurred.

2.1 The dental fricatives in Ghanaian English

In Ghana, few studies have been conducted on the use of the dental fricatives by Ghanaian speakers of English. These studies were all conducted as part of broader studies on the pronunciation of English in Ghana. None of the indigenous languages of Ghana have the dental fricatives. Huber (2008: 85) asserts that the dental fricatives “are often replaced by the dental or alveolar plosives [t, d, tʃ, dʒ] or they are dropped altogether in word-final position”. He goes on to say that apart from these, some use affricates like /tʃ/ and /dʒ/. Again, Huber recorded very few instances of the use of /ʃ/ for /θ/ in word-final positions in certain words like *cloth*, *with* and *mouth*.

Other studies of the use of the dental fricatives by Ghanaians (Dako, 2003; Adjaye, 2005; Quartey, 2009, 2014) reiterate what Huber (2008) says. In Adjaye’s (2005) study of the realization of the dental fricatives by southern speakers of English, she came up with the

Comment [A17]: It is not clear. Do you mean university students pursuing English language programme?

Comment [A18]: Which university? What is the L1 of the target students?

Comment [A19]: Does it have author(s), editor(s)?

Comment [A20]: Out of how many languages?

Comment [A21]: What is the source of this knowledge?

Comment [A22]: has

Comment [A23]: in place of ...

Comment [A24]: who are the ‘southern speakers of English’? please clarify.

Comment [A25]: I think this conclusion may not be accurate since its use is positional; at word-final position, one would expect the voiceless labiodental fricative to be more frequently used as opposed to the other options. For example, < bath > as *baf*, < truth > as *truf*, < tenth > as *tenf*, etc.

Comment [A26]: There are two tables above so you need to specify which table you are referring to.

Comment [A27]: A similar statement has been made in pg 3. Check to avoid repetition.

identified many instances of *th*-fronting in Milton Keynes, Hull and Reading. This substitution was originally seen as a feature of the working class, but gradually the middle class, and even the upper middle class picked it up. There is however a marked difference between the use of *th*-fronting among these classes. According to West (2013), the reason for the rapid spread of this phenomenon across the UK has to do with what he calls *covert prestige*. He explains that at first working class users of *th*-fronting were perpetrating its use to show group solidarity, but in time, others elsewhere began to do same, perhaps unconsciously, and before long, it has become a sort of prestigious way of talking.

Comment [A28]: So how do you account for itself among the university students?

Th-stopping too, substituting the alveolar stops (/d/, /t/) for the dental fricatives, has been detected among some speakers of English in the United States. Some studies reveal the existence of *th*-stopping among speakers of AAE (Wolfram, 1970 and Green, 2002) and also in some dialects in Louisiana (Dubois and Horvath, 1998), New York City (Labov, 2006) and in Philadelphia and Baltimore (van den Doel, 2006).

Comment [A29]: Do you mean native speakers?

2.3 Phonology and Orthography

Each of the sounds in English has an orthographic representation. A sound has a grapheme or a cluster of graphemes (grapheme sequences) that orthographically represents it. In the same way, there are some single graphemes that represent a cluster of sounds (eg. the grapheme *x* represents the sound sequence /ks/. Sometimes, the sound and its grapheme are the same (without the /h/) while other times this is not the case. A typical example of sounds whose graphemes are different is the dental fricatives. The sounds are /θ/ and /ð/, and the grapheme is the same *th* for both sounds.

Comment [A30]: What does this mean?

Considering the fact that the literature demonstrate that speakers of English as a second or foreign language, and indeed, some native speakers of English as well, do use variables in place of the standardized sounds of English, not much research has been done on whether such variants also appear in writing. Whiteman (1982), Ball (1992) and Thompson, Craig and Washington (2004) found some features transferred from the speech to the writing of a selection of students who speak African American English. These features detected, however, very rarely related to phonology. According to Whiteman (1982:164), "non-standard phonological features rarely occur in writing, even when these features are extremely frequent in the oral dialect of the writer".

Comment [A31]: Which literature?

Comment [A32]: space

Comment [A33]: so far you haven't defined what phonology is. Is it being used interchangeably with phonetics as briefly mentioned above?

Eisenstein (2015: 170) reports, though, that evidence of *th*-stopping by Americans on Twitter exist. There, users tend to substitute the grapheme sequence *th* for *d* when the sound in the word is the voiced dental fricative. So, words like *then* and *them* may be written as *den* and *de* respectively. Einstein did not, however, record any occurrences of a substitution of *th* for *f* or any other grapheme when the sound is voiceless, even though such substitution does happen in African American English (Green, 2002).

Comment [A34]: I think you need to be consistent with the tense of your reporting verbs. You are mixing past and present tenses.

This current study found evidence of the substitution for both the voiced and voiceless dental fricatives on WhatsApp.

3. Data Collection

WhatsApp Messenger is a software that runs from a mobile device or computer. It is free and platform-independent. Users are able to send text messages, documents, their location or pictures, do voice or video calls. All one needs is a cellular mobile phone.

Among the youth in Ghana, a mobile phone is not seen as a luxury, but a necessity. Almost every student at the university level owns at least one mobile phone. Apart from the social and personal use they have for the mobile phone, WhatsApp allows students to form groups to discuss academic issues.

This study involved a WhatsApp group that comprised students who had been nominated as group leaders and assistants of a class. The members were made up of five group leaders and five assistants. If the leader for one group is a male, his assistant will be female, and visa - versa. There were therefore five males and five females. These students were in Level 300 at the time of data collection, and their average age was twenty-one.

The group was formed to generally facilitate the transfer of information from the researcher, who was their lecturer at the time, to the students via their leaders and to provide a platform for group leaders to discuss assignments and projects. The researcher was not a fixed member but she was added as and when needed. It was during onetime that the administrator of the WhatsApp group page (one of the students) forgot to remove the researcher that she found out that the students were substituting the grapheme sequence *th* with variables, something she had noticed on other platforms.

The researcher asked the administrator to forward to the researcher all chats that had occurred in the past two weeks. He had to first inform the members that someone who was doing a project work on social media wanted the data, and so members were to remove chats between the two weeks period they thought were sensitive and would not want to make public.

Upon receiving the chats, the researcher identified all the sentences that had words with *th* spellings. When her submissions were confirmed as to the use of alternative spellings of *th*, she called for a meeting with the students during which she debriefed them, and asked them to fill consent forms, if they were willing to be part of the study. At a subsequent meeting, the researcher engaged the students in a focus group discussion.

It must be noted that though there were many words in which the grapheme sequence *th* was used to orthographically represent the dental fricatives, these instances were ignored because they were not the focus of this study. The researcher selected only those words that showed the use of *th*-fronting or *th*-stopping for analysis. Twenty-six different words that had undergone *th*-fronting or *th*-stopping were identified. The sentences that contain these words can be found in Appendix.

4. Findings on *th*-stopping

Nine of words identified had the grapheme *d*, representing the voiced alveolar stop /d/, used in place of *th*, while two words had *t*. Out of this nine for *d*, six occurred at word initial positions while three occurred at word medial position. There were no examples of use at word final position. *t* occurred once in word initial and once in word medial position.

Comment [A35]: Mobile phone

Comment [A36]: This sentence doesn't seem relevant. You've already said it runs on mobile phone device. Also it is a fact that not all 'cellular mobile phones' supports the WhatsApp application.

Comment [A37]: How about the adult or the elderly? Is it seen as a luxury and not a necessity? This statement is irrelevant.

Comment [A38]: How do you proof such a claim? Any statistical data backing it?

Comment [A39]: What do you mean by 'personal use'? I thought an individual's mobile phone is for personal use.

Comment [A40]: What informed your choice of the population? What that number? Why the choice of male vs. female sample? These are important questions for the reader to know the motive behind your choices.

Comment [A41]: Up until this point the reader does not know the name of the university being referred to in this paper. Again, why Level 300 students? Are they the most users of the WhatsApp application?

Comment [A42]: Which researcher? Do you mean the author?

Comment [A43]: What does 'fixed member' mean? Do you mean regular member?

Comment [A44]: If the objective of the group was to discuss academic work, how would such discussions be 'sensitive' and not appropriate for public consumption? The author says this about the objective "...to provide a platform for group leaders to discuss assignments and projects" in the immediately preceding paragraph.

Comment [A45]: Who confirmed them?

Comment [A46]: s

Comment [A47]: can give some examples?

Comment [A48]: Are twenty-six examples enough to make such generalizations as being made in this paper? I suppose more examples may be help to clearly establish a pattern.

Comment [A49]: Check the construction

Comment [A50]: delete

The grapheme *d*, corresponding to the voiced alveolar stop /d/, was used to orthographically represent the voiced dental fricative /ð/ in all environments of a variable use observed. On the contrary, *t*, corresponding with the voiceless alveolar stop /t/, occurred just two out of the seventeen instances of the substitution of the voiceless dental fricative. This points to the fact that *d* for *th* occurs more frequently than *t* for *th*, corresponding to Eisenstein's (2015) finding that the grapheme *d* is used almost entirely in substitution for *th* for the voiced dental fricative on Twitter by Americans, while for *t* he found no occurrence at all. Again, studies on dental fricatives among Ghanaian speakers of English also indicate that the voiced alveolar stop or the voiced dental stop is the variable of choice when it comes to the realization of the voiced dental fricative (Dako, 2003; Adjaye, 2005; Huber, 2008, etc). It is not surprising therefore that its grapheme *d* occurs much more than *t* for *th*, bearing in mind that sounds are mentally linked to letters, "so that patterns of substitution or deletion on the phonetic side give rise to analogous patterns in orthography" (Eisenstein, 2015:162).

Comment [A51]: As has already been said, the position of the occurrence and other factors as the L1 background of the speaker may affect this conclusion. Truf vs. trut for truth may depend on such factors.

Comment [A52]: This conclusion, therefore, may be overgeneralised if it is not situated in contexts.

Comment [A53]: space

Comment [A54]: among others

An interesting observation is that the two sentences that had the words in which *t* was used for *th* were both in Pidgin English:

1. *Notin dey happen.*
2. *Dat tin be powerful.*

The use of *t* for *th* among speakers of Pidgin English and Students' Pidgin in Ghana is very common. A further study on whether *t* for *th* happens outside Pidgin on social media will be needed before any generalization on this point can be made.

Comment [A55]: any source of this claim?

The tables below present summaries of the findings of *th*-stopping:

Table3: Summary of findings of *d* for *th*

NO.	WORD USED	TARGET WORD	POSITIO N
1	De	The	Initial
2	Dis	This	Initial
3	Dat	That	Initial
4	Dan	Than	Initial
5	Den	Then	Initial
6	Der/Dere	There	Initial
7	Weder	Weather	Medial
8	Weder	Whether	Medial
9	Fada	Father	Medial

Table 4: Summary of findings oft for *th*

N O.	WORD USED	TARGET WORD	POSITI ON
1	Tin	Thing	Initial
2	Notin	Nothing	Medial

5. Findings on *th*-fronting

There was no recorded instance of the use of *v* for *th*. This means that the participants do not engage in voiced *th*-fronting. This ties in with spoken data of English in Ghana, which shows that /*v*/ hardly occurs as a variable of the voiced dental fricative. (Adjaye, 2005:177) indicated that it occurred 0.92% among the Akan 1.46% among the Ga, but never among the Ewe participants' realization of twenty- six words that had the voiced dental fricative. On the other hand, *f* for *th* occurred in fifteen of the words. Out of these, two were at word initial, five at medial and eight at final positions. Though Huber (2008) reported few instances of /*f*/ for the voiceless dental fricative in the speech of his participants, it only occurred at word final positions in some words.

One interesting thing about this current study is that bearing in mind that the most frequently used variable for the voiceless dental fricative for speakers of English in Ghana is /*ɸ*/ (Adjaye: 174, Huber, 2008, etc) and also being conscious of the fact that /*t*/ has an orthographic representation *t*, the participants in this study chose to rather use the grapheme *f*, which represents the voiceless labiodental fricative to represent the voiceless dental fricative. In this study, the use of /*f*/ is observed more frequently than /*t*/ and in initial and medial positions as well.

Comment [A56]: Among others

Comment [A57]: space

Below is a summary table of the findings on the voiceless dental fricative:

Table 5: Summary of findings of *f* for *th*

N O.	WORD USED	TARGET WORD	POSITION
1	Fink	Think	Initial
2	Fanx/ Fanks	Thanks	Initial
3	Birfday	Birthday	Medial
4	Nufin/ Nafyn	Nothing	Medial
5	Sumfin/Some fin	Something	Medial
6	Refink	Rethink	Medial
7	Bafin	Bathing	Medial
8	Rif	Wreath	Final
9	Fif	Fifth	Final
10	Maf	Mouth	Final
11	Paf	Path	Final
12	Healf	Health	Final
13	Psychopaf	Psychopat h	Final
14	Toof	Tooth	Final
15	Clof	Cloth	Final

6. Summary findings of the Focused Group discussion

Eight of the students turned up for the discussion. There were five males and three females. The discussion was recorded and later transcribed and analyzed. The students responded to a series of questions:

Question 1: Do you use other letters for *th* words on WhatsApp?

Majority of the students interviewed say they use these variables on WhatsApp and other social media platforms. They also indicated that they do this consciously.

Question 2: Why do you do this?

According to them, using these variables is convenient and these graphemes are easier to type. Also, typing this way is becoming more popular and if one uses them, then one is seen as being abreast with current trends, affirming the fact that the spread of this phenomenon is because of *covert prestige* (West, 2013). They also explained that *noone* really cares how you write on WhatsApp, therefore one is *free* to write as one wishes. This final reason buttresses Sproull and Kiesler (1991) and Herring's (2012) assertion that CMC does not come with some specific rules as to how to construct meaning with words, nor does it come with criticisms. This is what provides the opportunity for people to be creative, being both creators and users of what CMC offers. While this freedom exists, communicators must at the same time be constructing words that will be understood by others, by among other things, avoiding "infelicitious pronunciations" (or respelling, in this case) of words (Einstein, 2015:162).

Comment [A58]: I think this could have been discussed when discussing the sample for the WhatsApp data

Comment [A59]: What do you refer to as 'majority'? can you specify the figures, perhaps in percentiles?

Comment [A60]: Your question does not elicit this answer, I suppose.

Comment [A61]: Mention who 'them' refers to since you have begun a different paragraph.

Comment [A62]: none

Comment [A63]: at liberty

Question 3: Who do you use these variables with?

Participants indicated that they use these variables only on those social media platforms where they have close friends and mates, and not on those with people they are not too familiar with, or adults. This shows that this phenomenon is used more particularly by the youth, and it shows group solidarity.

Question 4: Do you write these variables outside social media?

Some of the students **were sure** they never write these variables outside social media while others say they use them when writing notes or doing other personal or informal kinds of writing. This is not entirely accurate. Just **like** with the use of Students' Pidgin among the youth in Ghana, the use of these variants have been detected in the examination essays and theses of students. Asante (2016:15) for instance, **reports Herring's (2012) claim** that "self-report studies indicate that young people are increasingly using e-grammar in their offline writing". This may be happening unconsciously, but the fact that it is happening at all points to the fact that students are not as in control of how they write as they think.

Comment [A64]: responded that

Comment [A65]: as

Comment [A66]: Perhaps you need to directly cite from Herring

Question 5: Do you use these variables when speaking as well?

The general consensus was that in speaking, students are more likely to use the voiced alveolar stop in environments where the voiced dental fricative should be. This they ascribed to L1 influence. They also use *d* for *th* on social media because to them, it is the closest grapheme that sounds like the voiced dental fricative. This shows that the replacement of *d* for *th* is consciously motivated, apart from the fact that it mirrors how they speak.

Comment [A67]: Consensus with who? This consensus is likely to lack empirical evidence, therefore, it cannot be factual.

Comment [A68]: How do they explain the proximity? Is it in terms of orthography so phonetics. If the latter, then *f* is rather closer to *th* than *d*. Therefore, that assertion cannot be accurate.

According to the participants, they tend to use the voiceless alveolar stop most as a variable for the voiceless dental fricative when speaking. Though through their study of English Phonetics they now know that the standardized sound is the voiceless dental fricative, their previous way of speaking supersedes or gets the upper hand unconsciously when they speak.

Comment [A69]: This expression is not clear enough. Do you mean their earlier pronunciation is still influencing them?

Using the voiceless labiodental fricative for the voiceless dental fricative invites ridicule and suggests that the user is not well educated, so they avoid using it when speaking. However, on social media, they use the grapheme *f* more than *t* for *th* because, once again, it sounds closest to the voiceless dental fricative and so using it rather shows that one is good at speaking English.

Comment [A70]: Whose advice is this? This statement is highly contestable since the so-called Ghanaian English is also used by the so-called "well educated" in Ghana.

None of the students said they use the voiced labiodental fricative for the voiced dental fricative in speech or writing.

7. Conclusion

This study sought out to investigate what variables apart from the standardized grapheme sequence *th* is used by a group of students on WhatsApp. It also **inquired into** the reasons for the choice of these variables. Results revealed that the variable of choice for *th* when it occurs in words that have the voiced dental fricative is *d*. *v* was never used in place of *th*. *f* is most used

Comment [A71]: sought

for *th* when it represents the voiceless dental fricative, while *t* occurred only two times and in sentences that were in Pidgin English.

The main reasons why the students resort to the use of these alternative ways of representing *th* was for social solidarity, show the communality that exists between the users, indicate that one is also 'hip' and abreast with current trends among the youth, and also because it is just convenient to write that way. The participants in the study explained that their choice of these variables is phonologically motivated: *f* is the grapheme that represents the sound /f/, which to them is closest to the standardized /θ/, even though in actual fact when they speak, the variable they use is /t/. Phonological motivation is also the reason behind the choice of *d* /d/ for *th* /θ/. They indicated that /d/ sounds closer to /θ/ than /v/.

The findings from this study proves that although the Ghanaian youth is more likely to be seen as engaging in *th* stopping when he or she speaks English, on WhatsApp, they alternate between *th*-stopping and *th*-fronting, and the choice of either at any one point is phonologically motivated – the grapheme that corresponds to the phoneme that they think sounds closest to the standardized sound is selected. In addition to this, in as much as alternative spellings can be phonologically motivated, sometimes, the alternative forms may not exactly mirror what happens in speech, as the use of *f* for *th* has shown.

Comment [A72]: check the sentence, rephrase and break it up; it is too long.

Comment [A73]: So far it seems the motivation is rather phonetics than phonological. They chose or replace with a grapheme that sounds closest to <th> per your explanations. Phonologically we would have expected rules that dictate how the substitutions and replacements should be done. Also as I have said, if L1 influences the choices, then the background of the participants is important for the reader to know as studies has shown how speaker's L1 can influence such behaviour.

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Appendix

1. "Watz **de** hmm 4??"
2. "**Dis** is his voice wai."
3. "Your **fada** will hear of this."
4. "Yeah....find time so **dat** we can talk."
5. "K pls **de** problem is I was not called for a long time oo **dats** all wat I hv done...so pls forgive for **dat** will not happen again pls."
6. "**Dats** all that I know."
7. "Tell him **dat** I said he shldnt come again."
8. "Pls do **dat** for me wai."
9. "U do somthin private ah **den** wen it gets out of hand u come public."
10. "He didn't wake to rebuke the sea till **de** disciples called Him."
11. "God knows everything.... He said in thebook of Isaiah **dat** he knew him from his mother's womb."
12. "Words cannot explainthe sudden and unexpected death of our citizens bt all **de** same we say to God be **de** glory for he alone knows best. May de departed souls of our lovely people rest in peace."
13. "**Der** is no need to tell u **dis** you hv to know this bro....or read revelation."
14. "She wants to know **wheder** it will come on or not."
15. "It's a matter of being vigilant and nt to follow de saying **dat dere** is lack of job opportunities."
16. "**Notin** dey happen"
17. "Hahahaha! I want to ask u @ P,**dat** must we suffer in silence."
18. "Why**de** quote?"
19. "Don't say OK to **dis** one too @ S."
20. "**Dat** msg bi general msg."
21. "**Den** it must be your imagination."
22. "These grades are better **dan** last."
23. "**Disweader** is not good for group discussions oo."
24. "E, do u knw how much a **rif** costs?"
25. "Happy **birfd**ay sweetheart."
26. "Av got **nufin** to say to you."
27. "What does the **fif**one say?"
28. "I **fink** av seen it b4".
29. "M says **fanx**".
30. "I was **bafin** wen u kald."
31. "Your **maf** like....."

32. "Come straight u would see a foot **paf**."
33. "How is your **healf** now?"
34. "She's a **psycopaf**."
35. **Dattin** be powerful
36. "Please **refink**."
37. "Buy me **sumfyn** wen cumin."
38. "You can use a **toofpick**."
39. "No, I **fink** he is a little into **somefin**."
40. "How much is the **clof**?"
41. "**Nafyn** much."
42. "Do u **fink** all your msg u post are acceptable?"