

# Spoken Code-Switching in Written Form? Manifestation of Code-Switching in Computer Mediated Communication

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## Abstract

Code-switching (CS) is a common occurrence in spoken language among bilingual and multilingual language speakers. This makes its use a customary practice in Computer Mediated Communication (CMC) genres as used by such speakers. This study examines instances of Code-switching in the Computer Mediated Communication data collected in order to find out whether code-switching in CMC is equivalent to code-switching in spoken language in terms of spontaneity, motivation and discourse functions. The study is based on previous studies in code-switching, for example, Gumperz (1982), and Myers-Scotton (1992). These studies point to the fact that code-switching in spoken language can be “conscious and deliberate” when it is motivated by various factors. The examined CMC data is derived from Kenyan University students and is in form of messages from various CMC genres including SMS text messages, e-mail, Instant Messages and Social Network Sites such as Facebook and YouTube. The languages in focus are Swahili, English and vernacular languages which are spoken in Kenya. The findings suggest that although code-switching in CMC is to some extent similar to spoken code-switching in terms of language manifestation and deliberateness, its discourse functions reveal features that are specific to CMC contexts. The study concludes that code-switching in CMC should be viewed and treated as a unique and distinct entity from spoken-code-switching in order to capture its inherent attributes.

## Keywords

code-switching (CS) – computer mediated communication (CMC) – Swahili – SMS text messages – e-mail – instant message chats – social network forum

## 1 Introduction

Computer Mediated Communication (hereafter CMC) incorporates a rich accumulation of multilingual data. This multilingual data is not only, reflected through the presence of CMC messages in different languages, but also through the use of more than one language or code within a single CMC message. Such multilingual data is both remarkable and important for code-switching studies, since some of it provides new dimensions and challenges. However, as Androutsopoulos (2013) points out, a majority of previous studies have marginalised code-switching data originating from CMC perhaps with the main reason being that it is not clear whether code-switching in CMC as a data source is a valid reflection of spoken or written language, or if it is a hybrid of the two styles (Dorleijn and Nortier, 2009: 128–129; Hinrichs, 2006: 19).

Several influential studies have been conducted focusing on the motivations and discourse functions of code-switching (see Gumperz, 1982; Myers-Scotton, 1992; Muysken, 2000). It is clear that data used in these studies were from face to face spoken conversations. In turn, this has led to code-switching theoretical frameworks being formulated based on face to face conversations or discourse data. It is therefore worth noting that a majority of code-switching theoretical frameworks are based on spoken language. Their transferability to written messages or even CMC messages has hardly been questioned (Hinrichs, 2006: 29). This study questions whether these motivations, discourse functions and theories of code-switching based on spoken data still apply to code-switching data in CMC contexts. In order to address this problem, this study intends to answer the following questions:

1. How is code-switching manifested and distributed across CMC genres?
2. What languages are used in CMC code-switching?
3. To what extent do discourse functions of code-switching in spoken language apply to code-switching in CMC?
4. Is code-switching in CMC conscious or spontaneous in comparison to code-switching in spoken language

### 1.1 *Background Studies on Code Switching on the Internet*

Computer Mediated Communication is a very fertile, yet an uncultivated area especially in regard to grounding theoretical frameworks that are particularly developed for CMC. Currently there is no framework developed especially for code-switching in the CMC context. The spoken language framework has to be adapted as a starting point. There have been a number of studies on CMC and

language (see Barasa, 2010; Baron, 1984; Bodomo, 2009; Crystal, 2001; Danet and Herring, 2007; Frehner, 2008; Hård af Segerstad, 2002; Herring, 2001, 2007). However, very few studies for example Devic (2007); Durham, (2003); Georgakopoulou, (1997); and Hinrichs, (2006), concentrate specifically on code-switching in CMC. Unsurprisingly even fewer studies give proposals on how the data should be collected, analysed, and the caution that should be taken when making generalisations based on code-switching data from CMC sources. This section reviews such studies, among them being Hinrichs, (2006), Dorleijn and Nortier, (2009), and Androutsopoulos, 2013.

Hinrichs (2006) presented an extensive study on code-switching in CMC in his book titled *Codeswitching on the Web*. In the study, Hinrichs used existing influential code-switching frameworks to examine the functions and motivations of code-switching that lead Jamaicans to switch between English and Jamaican Creole (Patois) in private e-mails and social network forum posts as the CMC genres. Hinrichs' findings showed that in most cases, English was used as the base language, while Jamaican Creole appeared as a reservoir for a particular function. An important observation by Hinrichs is that code-switching models based on spoken language do not always work for code-switching in CMC, for example, his data contradicted Gumperz's conversational analytic model which links a language directly to group identity. He also points out that conditions of written language differ from those of spoken language (Hinrichs, 2006: 29).

Dorleijn and Nortier (2009) have also notably contributed to the study of code-switching in CMC in their exploration of the manifestation of code-switching on the internet. One of the issues raised by their work is the question of the viability of CMC data for code-switching studies. Their findings reveal that there should be caution when generalising code-switching findings in CMC since some of the results may be solely based on the languages being studied. An example of this is from their findings which showed that code-switching between Moroccan and Dutch is mainly for stylistic and identity purposes while code-switching between Turkish and Dutch is mainly based on the compatibility of the syntactic and grammatical structure of the two languages.

Androutsopoulos (2013) discusses how code-switching is expressed in CMC contexts, and how it compares to both code-switching in spoken and written language. This discussion is based on a summary of the studies related to code-switching in CMC beginning from 1996 to 2009. For each of the studies, the summary illuminates several categories ranging from the CMC genre under study, the participants, the languages under focus, the social setting and the data analysis approach. The summary clearly shows that there is a major gap in

studies of code-switching across different CMC genres. One of the conclusions in Androutsopoulos' study is that code-switching can occur in any CMC genre "be it unidirectional or interactive, synchronous or asynchronous, dyadic or public, private or professional" (Androutsopoulos, 2013: 5).

### 1.2 *Spoken and Written Code-Switching*

In order to tackle the validity question about code-switching data originating from CMC, one needs to answer the question about what is considered as the ideal source of code-switching data and how does the data from this source compare with the CMC data in regard to code-switching. As already pointed out, early code-switching studies were based on spoken language which was considered as the ideal source of code-switching data. Dorleijn and Nortier (2009: 127) point out that it is a general assumption in sociolinguistics that the more spontaneous and unconscious the speech is, the more accurate and valid its code-switching data is. Undoubtedly, this assumption is controversial owing to the fact that the validity of data should not solely depend on spontaneity. Besides this, the question that arises is whether written code-switching is considered to be deliberate or spontaneous in comparison to spoken code-switching.

Another disputable issue in spoken versus written code-switching is presented by Androutsopoulos (2013) who explains that "[t]he correspondence of online written CS to its offline spoken counterpart is a common concern, but also a contested issue" (Androutsopoulos, 2013: 668). Spitzmüller (2006: 33) criticises the likening of CMC to spoken language by observing that the "prima facie similarities between [CMC] and [spoken language] communication are functionally not similar at all". Hinrichs (2006: 20) also takes a similar stance and claims that although CMC initially appears as conceptually spoken, it is still written text. The general implication therefore is that the conditions of spoken or written language may differ from CMC language, which is not simply written or spoken language or even spoken-written language for that matter.

## 2 Method

This study was part of a major study by Barasa (2010) whose focus was on the use of language in CMC genres like SMS text messages, e-mail, Instant Messages (IM) also referred to as online chats, and posts and comments on online Social Networking Sites (SNS) and fora using Kenyan languages.

Kenya was chosen because in addition to being one of the sub-Saharan African countries with a high Internet penetration, it is highly multilingual with more than 42 vernacular languages with English and Swahili as the

official languages and Sheng as the youth slang. This setting is very unique in supplying not only linguistic data, but also code-switching data in particular.

### 2.1 *Participants*

The participants in this study were university students and young urban professionals (yuppies) in Kenya. They were all required to be Kenyan and under 36 years. This group is considered to be representative of the average CMC user in Kenya. It was deemed that both groups, that is the university students and the yuppies have free or affordable access to computers and Internet networks which they utilise at their institutions and in their work places at subsidised costs or free of charge. These groups also own cell-phones and find it cheap and convenient to send text messages for communication with their peers. In addition, these groups are eager to communicate using new CMC applications (Apps) and technologies.

### 2.2 *CMC Genres*

It appears that most studies on CMC and language usually focus on only one, or at most, two CMC genres (Androutsopoulos, 2013). However this study focuses on four CMC genres, which are SMS text messages, e-mail, Instant Message chats and online Social Network Sites fora.

The aforementioned CMC genres can be described as follows: SMS stands for Short Message Service. This is a service available to mobile phone users, which enables them to send and receive typed short text messages via their mobile phone. It is also referred to as text messaging or texting. E-mail involves sending and receiving messages in form of “letters” and other attachments mediated by a networked computer communication technology. Instant Messaging also known popularly as *chat*<sup>1</sup> is a form of synchronous CMC that allows two users to exchange typed messages back and forth, which is similar to a conversation albeit online. Social Network Sites (SNS) are public or semi-public online sites where members with similar interests register and set up profiles, in order to share and discuss matters of common interest. Examples of Social Network sites include Facebook, YouTube, Twitter and LinkedIn.

Instant message chats are the most comparable to spoken conversation while e-mail can be viewed as the closest to the traditional letter. An SMS text message on the other hand is closest to what used to be the telegram. It is short, rapid and urgent since it is expected to be read so long as the receiver's

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1 Note that there is a difference between an instant message and an online chat. An online chat involves a group discussion in a virtual ‘chat room’, while instant messages are between two interlocutors.

TABLE 1 *Features of the selected CMC genres*

CMC Genre	e-mail	SMS	IM	SNS
Spoken-like	✗/✓	✓	✓	✓/✗
Written-like	✓	✗ / ✓	✗	✗ / ✓
Synchronous	✗	✗ / ✓	✓	✗/✓
Asynchronous	✓	✓	✗	✓
Space limitation	✗	✓	✗	✓/✗
Unlimited space	✓	✗/✓	✓	✗/✓

## Key

✓ yes

✗ no

✓/✗ sometimes (often)

✗/✓ sometimes (not often)

phone is on and within network.<sup>2</sup> Interestingly, communication via online Social Network Sites is not immediately comparable to any traditional communication method and thus online Data from Social Network Sites is unique because it is in the form of a comment posted on a thread in an online social discussion forum. It is therefore “public” since it can be viewed by the members of the forum and in some networks even by non-members. Additionally, the message is expected to abide by the forum’s rules and guidelines, otherwise the forum’s administrator has the right to edit or block it altogether. Since an online Social Network Site is a community-based genre, it is difficult to categorise its features, considering that, a message on a Social Network Site can be spoken-like or written-like depending on the formality level of the forum, subject under discussion or the commenter’s/participants style. In addition, comments posted on Social Network Sites can also be synchronous in form of a real-time discussion if all the participants are online at the same time (see Table 1).

This approach of data collection from several CMC genres is unique because it draws conclusions based on data from different CMC genres, yet the data is from the same participants. In other words, this approach is useful in making generalisations, for example, on how Kenyan university students and Yuppies use language in the different CMC genres. Table 1 presents a summary of the features of the selected CMC genres. Each of the selected CMC genres has its own unique features which can be used to explain the findings.

2 It is relatively rare to have unread SMS messages. There is usually an urge to quickly read and perhaps reply the message as soon as it arrives regardless of the receiver’s context.

TABLE 2 *Summary of data collected for the study*

CMC Genre	Total number of messages collected for the qualitative study	Number of messages selected for quantitative analysis	Total number of words per genre for quantitative analysis
e-mail	780	35	4,347
IM	197	32	4,325
SMS	2,730	300	4,347
SNS	1,720	212	4,349
<b>Total</b>	<b>5,427</b>	<b>579</b>	<b>17,368</b>

### 2.3 *Data Collection*

In the main study, the participants were asked to forward to the researcher, the last 4 e-mails sent every month, for two months. This yielded 780 e-mails. The researcher also asked the participants to forward 2 sent SMS text messages every week for 2 months which totalled to 2,730 SMS messages. The participants were also asked to forward a copy of Instant Message chats that they participated in. This gave a total of 197 chats. For Social Network Sites data, the researcher collected a total of 1,720 messages in the form of posts and comments from online newspaper sites, Facebook, YouTube and social networks discussion fora such as Mashada.com, RCBowen.com, and Kenyanlist.com. A total of 5,427 CMC messages were collected from which the researcher selected 579 messages for the quantitative analysis. This was done by systematic sampling where every fourth message from each genre was selected. The final corpus that was used for quantitative analysis consisted of approximately 4,350 words per genre with the messages distributed as shown in Table 2. Since e-mails and Instant Message chats tend to be longer in general, their number in the sample is lower than that of SMS text messages and posts from Social Network Sites. However, the number of words for all the genres is proportionate. For the purpose of this paper, some of the data will be presented descriptively to illustrate instances of code switching and its use in a given context. Additionally, some quantitative data will be provided to illustrate the instances of code-switching in the four genres.

## 3 **Results and Discussion**

This section presents the results of the study, and a discussion of the findings. It begins with a general view in sections 3.1 and 3.2 where the overall results are

presented quantitatively in order to answer research question 1 and 2. The first research question regards the manifestation and distribution of messages with code-switching across CMC genres, while the second research question is about the languages used in code-switching. Afterwards, the findings relating to research question 3 concerning the discourse functions of code-switching in spoken language and in CMC, and research question 4 on the spontaneity of code-switching in CMC are addressed qualitatively in section 3.3 and 3.4. (see section 1 for research questions).

### 3.1 *Manifestation and Distribution of Messages with Code-Switching Across CMC Genres*

The results of this study indicate that out of the 579 messages that were used for quantitative analysis, 59% were found to contain instances of code-switching as shown in Table 3. This is over half of the analysed messages which is not surprising owing to the multilingual nature of the participants. In summary, these findings show that less than half Instant Message chats contain code-switching, which is 14 out of 32 messages. On the other hand, over half of SMS text messages and posts on Social Network Sites contain code-switching. The results indicate that at 89%, e-mails have the highest presence of code-switching.

The unexpected result is the relatively low percentage of the instances of code-switching in Instant Message chats in comparison to the other CMC genres. It was expected that Instant Message chats would register the highest instances of code-switching since it is the most similar to spoken conversation among CMC genres. These results point to the fact that there is more to code-switching in CMC than just spoken language in written form.

It is also interesting to note that with regard to e-mails, these findings contradict Durham (2003) who investigated language choice in e-mails via a Swiss mailing list among students in various medical schools in Switzerland whose language of instruction was German. Durham's study showed that most e-mails were in English and code-switching was hardly present which suggested that English is favoured as a lingua franca in multilingual professional networks. In fact according to Durham, code-switching in e-mails was impractical and confusing such that it was easier to rely on English as the main language. Our findings also contradict Hård af Segerstad (2002: 258) whose data registered e-mails without code-switching. The explanation of this was that Hård af Segerstad's e-mail data were from official e-mails of a formal nature and therefore used only one language whereas the present study used data from informal e-mails. Thus it is plausible that the presence of code-switching in e-mails in professional contexts differs from code-switching in informal e-mails.



TABLE 3 *Percentage of code-switching in CMC messages across genres*

CMC Genre	Messages selected for quantitative analysis	Messages with code-switching per genre	% of messages with code-switching per genre
e-mail	35	31	89
IM	32	14	44
SMS	300	186	62
SNS	212	110	52
<b>Total</b>	<b>579</b>	<b>341</b>	<b>59</b>

### 3.2 *Languages used for Code-Switching in CMC Messages*

In order to summarise the number of languages used in each CMC message, this study coined the terms *bilingual code-switching*, *trilingual code-switching* and *polylingual code-switching*. *Bilingual code-switching* refers to cases where two languages were used in the same message, while *trilingual code-switching* implies that three languages were used in the message (see Message 1 and 2 respectively). *Polylingual code-switching* on the other hand means that more than three languages were used in the same message (see Message 3). Message (1) is an example of bilingual code-switching which uses two languages (English and Swahili),

#### Bilingual message

(1)		<i>ati who???</i>	
		ati	who?
	<i>Languages used</i>	Swahili	English
	<i>Literal translation</i>	<i>ati</i>	<i>who?</i>
		what/that	who?
	<i>Translation in context</i>	What, who?	
		chat	Instant message (IM)

Message (2) is an example of trilingual code-switching which uses three languages (English, Swahili and a vernacular language)

Trilingual message

(2) *waaaaat?????????? wacha wewe! lakini wemwega?*

	waaaaat	wacha wewe! lakini	wemwega?
<i>Languages used</i>	English	Swahili	vernacular (Kikuyu)
	<i>waaaaat</i>	<i>wacha wewe! lakini</i>	<i>wemwega?</i>
<i>Literal translation</i>	what?	stop you!	but are you fine?
<i>Translation in context</i>	What? You can't be serious! but are you fine? e-mail		

Message (3) is an example of polylingual code-switching which uses more than three languages/codes (English, Swahili, vernacular and Sheng).

Polylingual message

(3) *hi dear, nang'o? umetuliza videadly aje?? sisi 2ko 2.*

	hi dear,	nang'o	umetuliza	vi-	deadly	sisi 2ko 2
<i>Languages used</i>	English	Vernacular (Luo)	Sheng	Swahili	English	Swahili <sup>3</sup>
	<i>hi dear,</i>	<i>nang'o</i>	<i>umetuliza</i>	<i>vi-</i>	<i>deadly</i>	<i>sisi 2ko 2</i> <i>sisi tuko tu</i>
<i>Literal translation</i>	hi dear	how are you?	you have vanished	prefix – adverb of manner	deadly	us we are just there
<i>Translation in context</i>	Hi dear how are you? you are too quiet. we are ok.					SMS

Table 4 summarises the number of languages used for code-switching in the quantitative data and the number of CMC messages containing the code-switching in each CMC genre.

3 The words are in Swahili but numeral 2 is pronounced in English.

TABLE 4 *Number of Languages in code-switching in CMC messages*

CMC Genre	Bilingual code-switching (2 languages)	Trilingual code-switching (3 languages)	Polylingual code-switching (>3 languages)
e-mail	16	12	3
IM	6	5	3
SMS	109	66	14
SNS	55	44	8
<b>Total</b>	<b>186</b>	<b>127</b>	<b>28</b>

In summary, the findings in Table 4 show that bilingual code-switching is the most prevalent in CMC with a score of 55%. This is followed by trilingual code-switching with a score of 37% and finally polylingual code-switching with 8%. This can be explained by the linguistic background of the participants. University students and young urban professionals (yuppies) in Kenya speak both Swahili and English which are the country's national and official languages respectively. In addition, this group of participants falls in the youthful age-bracket and are more apt to speak the code Sheng which is the country's youth slang (Githinji, 2009; Ogechi, 2002; Githiora, 2002; Abdulaziz and Osinde, 1997; Mazrui, 1995; Myers-Scotton, 1993). The group is also likely to speak a vernacular language. Given this multilingual landscape, it is common for the participants to use at least two or three languages in a CMC message. However, the use of more than three languages is not very common perhaps because the fourth (or next) language is likely to be a vernacular language. This implies that it is less probable for participants to share the vernacular language given that there are around 42 vernacular languages in Kenya. Additionally, most vernacular languages in Kenya do not have a conventional orthographic system and thus many users are inexperienced in writing in a vernacular language.<sup>4</sup> For this reason, it can be concluded that code-switching that includes a vernacular language is less common in CMC contexts.

Table 5 presents a quantitative summary of the language distribution in code-switching among the genres. The Table juxtaposes CMC messages that use either English, Swahili or a vernacular language in code-switching and those that do not.

4 The use of vernacular in CMC might be one of the keys to standardizing and popularizing written forms of vernacular languages.

TABLE 5 *The presence/absence of languages in CMC code-switching*

Presence/absence of vernacular incode-switching	e-mail	SMS	IM	SNS	Total	%
Messages with vernacular	12	61	9	42	124	36
Messages without vernacular	19	125	5	68	217	64
Presence/absence of English in code-switching	e-mail	SMS	IM	SNS	Total	%
Messages with English	27	127	10	83	247	72
Messages without English	4	59	4	27	94	28
Presence/absence of Swahili in code-switching	e-mail	SMS	IM	SNS	Total	%
Messages with Swahili	21	142	10	80	253	74
Messages without Swahili	10	44	4	30	88	26

All in all, the findings demonstrate that code-switching between English, Swahili and Sheng, without including a vernacular language is the most prevalent in the CMC genres. This is expected considering that these are the standard languages (and code) that are shared by the majority of participants.

As predicted, the results in Table 5 confirm that the use of English and Swahili code-switching in CMC is quite high at 72% and 74% respectively. This generally reflects the speech patterns among the Kenyan “elite” which includes university students and yuppies. E-mail uses mainly English and Swahili more than vernacular in CMC code-switching mainly because it is a more formal and written-like genre. Similar to e-mail, SMS text messages use both English and Swahili. However, an unexpected observation is that, Swahili appears to be a little bit more popular than English in the code-switched messages. This could be explained by the fact that since most SMS text messages are informal, it is common to code-switch using only Swahili and Sheng or vernacular without English. Given the Kenyan setting, Swahili is considered as the national language and thus more informal than English which is referred to as the official language. As already pointed out, Instant Message chats are more spoken-like and employ the use of all the languages without favouritism. The Social Network Sites results are similar to the e-mail results with the predominant use of both English and Swahili.

In as much as the messages with vernacular code-switching are fewer compared to those without, it is interesting that at 36%, the use of vernacular in CMC is not as low as what would have been expected. In genres like

e-mail, SMS text messages and Instant Message chats, it can be assumed that the interlocutors share a vernacular language. Additionally it can also be assumed that there is a kind of informality and familiarity between the interlocutors. Social Network Sites are a public and “blind” genre because the poster has no control of who the receivers are. In order to circumvent this barrier, posters use the vernacular language deliberately in a way that is akin to tribalism in order to include all the receivers who share the vernacular and exclude those who do not. In other cases, the posters use the vernacular code-switching spontaneously especially in the use of vernacular elements such as vocabulary that are publicly well known by the receivers. In such a case, it is used neutrally, with no attempt to include or exclude any receiver.

### 3.3 *To What Extent do the Discourse Functions of Code-Switching in Spoken Language Apply to Code-Switching in CMC?*

The results reveal that generally, code-switching in CMC manifests itself in a similar way like code-switching in spoken language but with some exceptions and additional functions.

A major exception worth pointing out is that code-switching in CMC does not fully incorporate Myers-Scotton’s (1993) markedness model of code-switching. The deliberate and non-spontaneous functions of code-switching such as establishing power relations, the exploratory function, or the language choices for example the marked and unmarked choices discussed in the model are seldom used in CMC. This is mainly because either the interlocutors already know each other for instance in Instant Message chats, SMS text messages and informal e-mail, or they are on a public Social Network Sites forum with no motive to establish power relations or to explore if the receiver shares the vernacular language. This clearly proves that code-switching in CMC has a different setting from spoken code-switching.

As has already been pointed out, there are some code-switching instances that appear to be uniquely CMC based. These have been placed under media affordance because their presence is determined by the genre as explained below.

#### 3.3.1 Rapidity

A main feature of synchronous CMC is rapidity (Hård af Segerstad, 2002; Rheingold, 2008; Bodomo, 2009; Barasa, 2010). This is done in an attempt to make the dialogue spoken-like. In general, synchronous CMC such as an Instant Message, the chat, is hurried and message senders tend to type the message as it pops out in their mind. Hence, it is likely that code-switching occurs because

while composing the message, the sender types the first word that comes to mind regardless of the language, so long as it creates a rapid flow and that the message can be understood by the receiver. This code-switching function is common in Instant Message chats because of its synchronous nature (see Message 4)

- (4) Mary: *sasa msupuu, you there??*  
 Anne: *niko poa kabisa*, how are u doing?  
 Mary: we're doing ok- stress *tu za kawaida*  
 Anne: that's life *hebu* hang in there...  
 Mary: uko wapi?  
 Anne: *niko job*. n u?  
 Mary: *niko lib chopping for an exam* kesho!

Instant message (IM) chat

Mary:	<i>sasa msupuu, you there??</i>			
	<i>sasa you there??</i>			
	<i>msupuu,</i>			
<b>Languages used</b>	Sheng	English		
	<i>sasa you there??</i>			
	<i>msupuu,</i>			
<b>Literal translation</b>	Hi	you there?		
	pretty <sup>5</sup>			
<b>Translation in context</b>	Hi pretty lady, are you online now??			
Anne:	<i>niko poa kabisa</i> , how are u doing?			
	<i>niko</i>	<i>poa</i>	<i>kabisa,</i>	how are u doing?
<b>Languages used</b>	Swahili	Sheng	Swahili	English
	<i>niko</i>	<i>poa</i>	<i>kabisa</i>	<i>how are u doing?</i>
<b>Literal translation</b>	I am	fine	completely	how are you doing?
<b>Translation in context</b>	I am quite fine, how are u doing?			

<sup>5</sup> *Supuu* is a Sheng word for *pretty* and is used in informal contexts to refer to ladies.

Mary:	we're doing ok- stress	<i>tu za kawaida</i>
	we're doing ok- stress	<i>tu za kawaida</i>
<b>Languages used</b>	English	Swahili
<b>Literal translation</b>	<i>we're doing ok- stress</i>	<i>tu za kawaida</i> we're doing ok- stress only of usual
<b>Translation in context</b>	we're doing ok, except for the usual stress	
Anne:	that's life	<i>hebu hang in there...</i>
	that's life	<i>hebu hang in there...</i>
<b>Languages used</b>	English	Swahili English
<b>Literal translation</b>	<i>that's life</i>	<i>hebu hang in there...</i>
<b>Translation in context</b>	That is life, you better hang in there...	
Mary:	uko wapi?	
	uko wapi?	
<b>Language used</b>	Swahili	
<b>Literal translation</b>	<i>uko wapi</i> you are where?	
<b>Translation in context</b>	where are you?	
Anne:	<i>niko job.</i>	<i>n u?</i>
	niko	job. <i>n u?</i>

	<b>Languages used</b>	Swahili	Sheng	English	
		<i>niko</i>	<i>job</i>	<i>n u?</i>	
	<b>Literal translation</b>	I am (at)	work	and you?	
	<b>Translation in context</b>	I'm at work, What about you?			
Mary:		<i>niko lib chopping for an exam kesho!</i>			
		<i>niko</i>	<i>lib</i>	<i>for an exam</i>	<i>kesho!</i>
			<i>chopping</i>		
	<b>Languages used</b>	Swahili	Sheng	English	Swahili
		<i>niko</i>	<i>lib</i>	<i>for an exam</i>	<i>kesho!</i>
			<i>chopping</i>		
	<b>Literal translation</b>	I am (in)	library	for an exam	tomorrow
			studying		
	<b>Translation in context</b>	I'm in the library studying for an exam tomorrow!			

The words and phrases in italics indicate code-switching. There is no apparent pattern visible so far, and thus it seems that the message has just been typed out word for word as it comes to the mind. Although this practice might appear trivial in spoken code-switching, it is an important reason for CMC code-switching where messages tend to be typed swiftly in an attempt to maintain synchronicity. Paolillo (2011) sums this up in his statement that, synchronous genres of CMC exhibit a higher frequency of spoken-like code-switching than their asynchronous counterparts. This could also be interpreted to mean that some genres of CMC use code-switching more spontaneously than others.

### 3.3.2 Least Effort

According to Zipf (1949), humans tend to use the most convenient approach especially when seeking for information. Similarly in CMC, when composing a message, the sender will often choose the most convenient input that requires



the least effort to avoid strain. In some instances, this leads to code-switching where a different language is used because the word or phrase is shorter and easier to type than in the original language (see an example of this in Message 5).

(5)	ashassign mtado?????		(19 characters)
	asha-sign	mta-do?????	
<b>Languages used</b>	Swahili-English	Swahili-English	
	<i>asha-sign</i>	<i>mta-do?????</i>	
<b>Literal translation</b>	he/she has – signed	you(plural)	
		will do?	
<b>English translation</b>	He has already signed.		(40 characters)
	What will you do?		
<b>Swahili translation</b>	Ameshaweka sahihi, mtafanyaje?		(30 characters)

SNS post

The original code-switched message appears to be easier to type than its English and Swahili counterparts. This makes code-switching in this message deliberate. It should be noted that least effort is independent from the space available in the CMC message. Examples of least effort include ignoring the use of capital letters at the beginning of a sentence (Message 5) or when a sender would rather type a whole word using conventional spelling rather than face the “burden” of looking for numbers or smileys to abbreviate it.

Currently, a majority of developers of CMC devices have realised the need for least effort and have introduced spell-checkers and automatic completion features in their devices. These features are meant to make composing of messages and typing easier for the user by providing suggestions of the words that the user wants to type. In such cases, it may actually be easier to let the spell-checker provide the longer word automatically. The end result is that some messages seem to be longer but have been typed using minimal effort. However, the use of spell-checkers so far is in languages that have dictionaries. Another limitation of spell-checkers and automatic completion features is that they only adhere to the spelling of the language that has been set, for example, American or UK English, French, German, and Spanish, among others. They are

therefore not of much use in code-switching contexts. These limitations make the spell-checkers and automatic completion features less useful in the Kenyan setting where code-switching is popular and most vernacular languages do not have dictionaries.

### 3.3.3 Space Limitation

The restriction of the length of CMC messages results in conscious and carefully edited messages. In these cases, code-switching is used for economy in order to save space as shown in Message (6), which is an example of code-switching between English and Swahili.

(6)		I thot I told u the wedo was juzi		(33 characters)
		I thot I told u the	wedo	was juzi
<b>Languages used</b>	English	Sheng	English	Swahili
		<i>I thot I told u the</i>	<i>wedo</i>	<i>was juzi</i>
<b>Literal translation</b>	I thought I told you	wedding	was	the day before yesterday
<b>English translation</b>	I thought I told you that the wedding was on the day before yesterday.			
				(70 characters)
<b>Swahili translation</b>	Nilidhani eti nilikuambia ya kuwa harusi ilifanyika juzi			
				(57 characters)

SMS

The message is in English except for the words *wedo* (*wedding*) and *juzi* (the day before yesterday) which are in Sheng and Swahili respectively. Equivalentents of the message in English or Kiswahili show that the initial version with code-switching is relatively shorter with only 33 characters and uses the least space thus saving the user a lot of space. Code-switching can in this regard be used to shorten a CMC message. Currently, this practice is common in SMS text messages and posts on Social Network Sites in the Kenyan context. In SMS, a shorter message within the limit of 161 characters is cheaper; otherwise it would be split and charged as two messages if it surpasses 161 characters. Similarly, many Social Network Sites limit the number of characters to 500. This limitation has an influence on the language used in the message. Instant Message chats and e-mail do not have space limitation. In such cases, it can be

claimed that resorting to code-switching in order to save space is undoubtedly deliberate.

### 3.3.4 Creativity and Fun

Georgakopoulou (1997: 153) claims that code-switching is used in CMC to accomplish the spoken conversation cues that are absent in CMC. These include cues like gestures, posture, prosody, intonation among others. This means that CMC users need to be creative in order to achieve this through code-switching. In some cases, CMC users utilise code-switching in order to show their prowess in innovation and also as a means to show conformity to trends. They use code-switching as a means of implying group membership or to improve their image by appearing knowledgeable. The creative use of code-switching may reflect positively upon the message sender.

In many Kenyan contexts, code-switching is used creatively in a ‘fun’ way to communicate. An example of this is in political campaign slogans like “unbwogable”<sup>6</sup> and “tunawesmake”<sup>7</sup> where code-switching is used creatively to communicate. In “unbwogable”, *bwogo* means ‘cannot be scared’ in the Luo vernacular language, while *un-* and *-able* are English affixes. In “tunawesmake”, *tu-* and *na-* are Swahili prefixes (*tu-* is the plural marker; *na-* is the present tense marker), *wes* is a deviation of the Swahili auxiliary verb *weza* ‘can’ and *make* is an English lexical verb. This creativity is popular among the youth as reflected in CMC messages. It is especially enhanced as one is stimulated to be creative in spelling and that can include code-switching. In this respect code-switching in CMC is different from spoken code-switching and definitely deliberate.

### 3.4 *Is Code-Switching in CMC Conscious or Spontaneous?*

From the findings presented in the previous section (see 3.3.), it is clear that code-switching in CMC exhibits functions that are inherent in spontaneous spoken language. This supports the hypothesis that code-switching in CMC is spontaneous but only to a certain extent because of some unique functions that have been identified as solely belonging to CMC. These functions might require careful planning, thus making the message conscious.

6 *unbwogable* was Raila Odinga's campaign slogan in Kenya's 2008 presidential elections.

7 *tunawesmake* is Peter Kenneth's campaign slogan for Kenya's 2013 presidential elections.

## 4 Conclusion

The findings and discussion in this paper show that bilingual code-switching is popular in CMC especially between English and Swahili, mainly because these two languages are standardised and are shared by a majority of the Kenyan population. However, this does not mean that vernacular languages are inconspicuous in code-switching. The findings reveal that the use of vernacular languages in CMC is slowly gaining momentum regardless of their lack of standardisation. This study has also established that Myer's Scotton's markedness model is not applicable to code-switching in CMC due to contextual differences.

On the whole, this study confirms that despite complexities in categorising the functions of code-switching in CMC based on the motivations of code-switching in spoken language, both share similarities to a large extent. Additionally, code-switching in CMC is propelled by its own unique functions that are dependent on the media affordance and the characteristics of the specific CMC genre. There seems to be an underlying assumption that most of these unique functions of code-switching in CMC are not spontaneous but are consciously planned. However, there is a possibility that with continued and repetitive use, (which can be equated to practice) the pattern or style can be ingrained in the user, making it appear spontaneous. This is an area that is not entirely clear because of the complexity of measuring spontaneity. It is therefore recommended that a psycholinguistics model should be developed to measure the spontaneity in composing and typing CMC messages (Barasa, 2010: 336).

In terms of the precluding controversy as to whether CMC is spoken language in text form and the claims that CMC should be viewed as a hybrid language or a language that did not exist before (Ferrara, Brunner and Whittemore, 1991; Murray, 1988; Yates, 1996; Crystal, 2001), the findings in this study suggest that, perhaps CMC should be considered as a genre of its own because even though it shares some features with spoken conversation and written text, it has some additional features that are uniquely CMC.

## References

- Abdulaziz, Mohamed and Ken Osinde. 1997. Sheng and English in Nairobi. *International Journal of the Sociology of Language*, 125: 1–21.
- Androutsopoulos, Jannis. 2013. Code-switching in computer-mediated communication. In Susan Herring, Dieter Stein, and Tuija Virtanen (eds.), *Pragmatics of Computer-mediated Communication*, 667–694. Berlin: Mouton de Gruyter.

- Barasa, Sandra. 2010. *Language, mobile phones and internet: a study of SMS texting, email, IM and SNS chats in computer mediated communication (CMC) in Kenya*. Utrecht: LOT.
- Baron, Naomi. 1984. Computer mediated communication as a force in language change. *Visible Language*, XVIII (2): 118–141.
- Bodomo, Adams. 2009. *Computer-mediated communication for linguistics and literacy technology and natural language education*. Hershey, PA: Information Science Reference.
- Crystal, David. 2001. *Language and the Internet*. Cambridge: Cambridge University Press.
- Danet, Brenda and Susan Herring. 2007. *The multilingual Internet: Language, culture, and communication online*. Oxford: Oxford University Press.
- Devic, Hanna. 2007. *Code-switching in computer mediated communication - a case study of Croatian-English discussion forums*. (MA Thesis). University of Freiburg.
- Dorleijn, Margreet and Jacomine Nortier. 2009. Code-switching on the Internet. In: Barbara Bullock and Almeida J. Toribio (eds.) *The Cambridge handbook of code-switching*, 127–141. Cambridge: Cambridge University Press.
- Durham, Mercedes. 2003. Language choice on a Swiss mailing list. *Journal of Computer mediated Communication* 9 (1). Downloadable at <http://jcmc.indiana.edu/vol9/issue1/durham.html> (accessed July 4, 2014).
- Ferrara, Kathleen, Hans Brunner and Greg Whittemore. 1991. Interactive written discourse as an emergent register. *Written Communication* 8 (1): 8–34.
- Frehner, Carmen. 2008. *Email, SMS, MMS: The linguistic creativity of asynchronous discourse in the new media age*. Bern: Peter Lang.
- Githinji, Peter. 2009. *Sheng, styleshifting and construction of multifaceted identities. Discursive practices in the social negotiation of meaning*. Saarbrücken: VDM Verlag Dr. Müller.
- Githiora, Chege. 2002. Sheng: Peer language, Swahili dialect or emerging Creole? *Journal of African Cultural Studies* 15 (2): 159–181.
- Georgakopoulou, Alexandra. 1997. Self-presentation and interactional alliances in e-mail discourse: The style-and code-switches of Greek messages. *International Journal of Applied Linguistics* 7: 141–164.
- Gumperz, John. 1982. Contextualization conventions. *Discourse strategies*, 130–152. Cambridge: Cambridge University Press.
- Hård af Segerstad, Ylva. 2002. *Use and adaptation of written language to the conditions of computer-mediated communication*. Göteborg: Göteborg University.
- Herring, Susan. 2001. Computer-mediated discourse. In Deborah Schiffrin, Deborah Tannen and Heidi Hamilton (eds.), *The handbook of discourse analysis*, 612–634. Oxford: Blackwell Publishers.
- Herring, Susan. 2007. A faceted classification scheme for computer-mediated discourse. *Language@Internet*. Downloadable at: <http://www.languageatinternet.org/articles/2007/761> (accessed July 4, 2014).

- Hinrichs, Lars. 2006. *Codeswitching on the web English and Jamaican Creole in e-mail communication*. Amsterdam: John Benjamins.
- Mazrui, Alamin. 1995. Slang and codeswitching in Kenya. *Afrikanistische Arbeitspapier* 42: 168–179.
- Murray, Denise. 1988. The context of oral and written language: A framework for mode and medium switching. *Language in Society* 17: 351–373.
- Muysken, Pieter. 2000. *Bilingual speech: A typology of code mixing*. Cambridge: Cambridge University Press.
- Myers-Scotton, Carol. 1993. *Social motivations for codeswitching: Evidence from Africa*. Oxford: Clarendon Press.
- Myers-Scotton, Carol. 1992. Codeswitching in Africa: A model of the social functions of code selection. In Robert K. Herbert (ed.), *Language and society in Africa*, 165–180. Johannesburg: Witwatersand University Press.
- Ogechi, Nathan. 2002. *Trilingual codeswitching in Kenya: Evidence from Ekegusii, Kiswahili, English and Sheng*. PhD dissertation, Hamburg University.
- Paolillo, John. 2011. “Conversational” codeswitching on Usenet and Internet relay chat. *Language@Internet*, 8(3). Downloadable at: <http://www.languageatinternet.org/articles/2011/Paolillo> (accessed July 4, 2014).
- Rheingold, Howard. 2000. *The Virtual Community: Homesteading on the Electronic Frontier*. London: MIT Press.
- Spitzmüller, Jürgen. 2006. Spricht da jemand? Repräsentation und konzeption in virtuellen räumen. Downloadable at <http://www.spitzmueller.org/docs/chat-05.pdf> (accessed July 4, 2014).
- Yates, Simeon. 1996. Oral and written linguistic aspects of computer-conferencing. In Susan Herring (ed.), *Computer-mediated communication: Linguistic, social and cross-cultural perspectives*, 29–46. Amsterdam: John Benjamins.
- Zipf, K. George. 1949. *Human Behavior and the Principle of Least Effort: An Introduction to Human Ecology*. Cambridge: Addison-Wesley Press.