CHALLENGES OF NEOLOGIZATION ON THE INTERNET [II]

BY

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
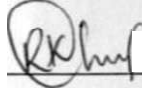MASTER OF ARTS IN INTERPRETATION

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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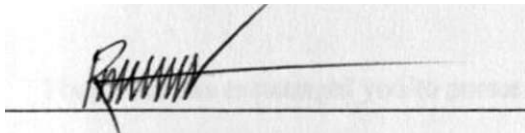The thesis has been submitted for examination with our approval as the university supervisors.

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DEDICATION

God

Thank you for the knowledge, strength and guidance throughout the course.

My Parents

Felix Munyua

Doris Munyua

Thank you for the strong academic foundation upon which this achievement is based.

My Loving Wife

Eunice Mukiri Karani

Your tireless support and encouragement has been the pillar of my success.

My Cherished Son

John Vianney Mutuma (J.V.)

I hope dad has encouraged you to pursue education to the highest level possible.

ACKNOWLEDGEMENTS

ABSTRACT

This paper presents the results of a linguistic study on the challenges of neologization on the Internet. The language in focus here is Kiswahili.

The study follows the framework of lexical pragmatics theory. The main objective was to investigate the extent to which Kiswahili neologisms that have resulted from localizations programs by Google and Microsoft pose challenges to the users of the Internet.

This study is organized in five chapters. Chapter One focuses on introduction. Issues discussed here are: background to the study, statement of the problem, objectives, hypotheses, rationale, scope and limitation, theoretical framework, literature review, and methodology.

In chapter Two, we classify and discuss the neologisms. The classification is based on the process involved in their creations.

In chapter Three, we compare the localization perspective between Google and Microsoft. It is in this chapter that we strive to see which group had the best practices in the creation of the neologisms and, consequently, better communicative effectiveness of the neologisms.

Chapter Four tests the theory. The data collected was subjected to the processes of lexical pragmatics to find out if the theory could adequately analyze it.

Chapter Five concludes the study. Remarks on the research findings and hypotheses are made, conclusions drawn and recommendations for further studies made. It is in this chapter that we acknowledge the fact that by the mere fact that most of the neologisms are very new, this pose a challenge to their understanding by many Internet users.

LIST OF ABBREVIATIONS

APCICT   Asian and Pacific Training Centre for Information and Communication Technology

CVCV   Consonant Vowel Consonant Vowel

ICT   Information Communication Technology

IT   Information Technology

LIP   Language Interface Pack

LTU   Lexical /Terminological Unit

LU   Lexical Unit

N   Noun

TU   Terminological Unit

TUKI   Taasisi ya Uchunguzi wa Kiswahili

USA   United States of America

V   Verb

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Every language is seen to have unlimited creativity and can readily be adapted to meet changes occurring in the life and culture of its speakers. According to Mead (1902:21) the main weight of such changes falls on vocabulary. Vocabularies can change very quickly both in word stock and meanings. Modern technology is one area that has brought about these changes.

Mead (1902:32) further says that every language can alter its vocabulary very easily, which means that every speaker is capable of adopting new words, accept or invest new meaning for the existing words and even expand meanings of words and phrases. This is what neologizing is all about.

According to Rey (1995:65) neologism as lexical units of a language, consists of morpheme words, complex words and certain lexicalized phrasal units. He further says that morpheme words are "grammatical" words which according to different theories are considered part of or excluded from lexicon and that they are usually few in number and have stable paradigms.

The so called "lexical words on the other hand are very numerous and belong to open sets and those with simple morphemes being less affected by novelty. Simple neologisms are usually borrowed words, old proper names and abbreviations. These are usually very many.

Rey (1995:66) splits the core area of neology into two groups:

a) The area of borrowings and other forms, which are unpredictable and alien to the grammar of the language.
b) The area of morphology, which by its semantic structure reflects a deeper syntactic structure

He highlights practical implications for this division. First, he says that words formed by a base and suffix, a prefix and a base or two bases and more complex words, can enter the lexicon by forming a conceptual or communicative unit, thus becoming part of the lexicon. Breal cited in Mead (1902) has similar sentiments. He however admits that despite this acceptance to the lexicon on basis of authority from grammar, final admission is largely determined by socio-cultural restrictions. For example, *stima* and *umeme,* all Kiswahili words refer to electricity but somehow *umeme* seems to enjoy better acceptance than *stima.* This means that the move from the potential (morphology) to real (lexicon, neologism) is a psychological and sociological matter and not simply a linguistic one.

Rey (1995:68) further identifies 3 types of neology and attempts to distinguish between them.

(a) Formal neology: He says that this can be as a result of application of grammatical rules to the morpheme store of the language.

This, he says is the case of potential neologisms of the system which thereby manifests the scope and regularity of its rules (suffixation, prefixation, composition).

Acronymy and abbreviation often use formal combinatory power of phonemes and any time the sequence of names of initial letters conforms to the rules of accepted in the language, (for example, KVKV in Kiswahili) the neological abbreviation can quickly enter general usage.

This is what led to quick acceptance of Kiswahili neologism such as TUKI (Taasisi ya uchunguzi wa Kiswahili) Ukimwi (Upungufu wa kinga mwilini etc). If this is not the case, Rey (1995:69) asserts that the initials whose names can be spelt phonetically though perhaps not very elegantly for example, AUT in English, the syllables are interconnected. These in most cases are "logical proper names" as called by some scholars. This rule applies to scientific and technical neologisms such as DNA, BMW and LSD.

(b) Semantic neology: Rey (1995:70) says that this feature is found in all neologism without exception. He adds that for formally new neologism, semantic novelty can be total as in the case of loanwords, partial in the case of creations by affixation and composition or very weak in the case of acronyms and abbreviations.

(c) Pragmatic neology: This is identified in relation to communication. This is the neology as looked on the basis of concrete processes of language and its functional form. This aspect is important in the sense that it provides a basic for the acceptability of neologisms among language users.

1.2 Statement of the Problem

According to Wikipedia, neologism refers to a newly created word, phrase, or usage. It can also refer to an existing word or phrase which has been assigned new meaning.

The terminologists who have been working on Kiswahili Internet searches, have widely used neologisms for the new concepts and phenomena brought about by advancements in science, technology, economics and many other fields. Most of these neologisms however are so new that only a very small section of Kiswahili users can understand them.

As a result, an interpreter or a translator relying on internet for terminology on new concepts may end up communicating to a very small portion of the audience. In other cases, the audience may have a different neologism for the same concept thus making the situation even worse.

The purpose of this study therefore will be to analyze the challenges of neologization on the Internet. We shall identify the neologisms, their suitability over others that already exist and the options available for the interpreter or translator in case their use doesn't succeed in rendering the message well.

1J Objectives

The objectives of the study are:

1. To identify and discuss neologisms used on the Kiswahili Internet searches.
2. To establish a classification of the neologisms and examine their communication effectiveness.
3. To discuss the processes involved in the formation of the neologisms.
4. To compare localization perspectives to find out which one is more effective.

1.4 Hypotheses

The following are the hypotheses of the study:

1. The lexical items on Kiswahili Internet searches are neologisms.
2. The processes involved in the formation of the neologisms can be analyzed adequately within lexical pragmatics framework.
3. The formation of neologisms is governed by predictable patterns.

1.5 Rationale

Internet search engines such as Google are very important tools for any language practitioner and particularly interpreters and translators. Substantial amount of research has been done by scholars on Internet search engines.

However, to the best of our knowledge, no one has done any research on Kiswahili neologisms on the Internet. Mmbwanga (2010) in his unpublished MA thesis has looked into new words on the Facebook and this has been a motivation to us to study the neologisms on Kiswahili Internet searches in order to fill knowledge gap in this area.

Secondly, Kiswahili is fast growing and attaining international status. According to Dr. Mwita in Kimani's (2010) Internet post, Kiswahili has over 120 million speakers within the East Africa common market. It is a language of the African Union and is becoming an increasingly important part of the Internet fabric. He further observes that locally relevant web tools will make communication within the East African

region much easier. In Kenya, Kiswahili is now one of the official languages. This means that all the business of the government should be conducted in both English and Kiswahili. Despite this development, there has not been a systematic study on the tools that will facilitate translation and interpretation of documents and speeches respectively into Kiswahili and more so, the challenges that exist in their usage. Google chrome is one such tool that is widely used in the search for lexical equivalents. The need for translation and interpretation tools motivates this study.

The study will at the same time serve as a reference tool for students who wish to pursue or broaden knowledge on Kiswahili neologization on the Internet.

1.6 Scope and Limitation

This study will focus on neologisms within the framework of lexical pragmatics. Through the approach, the study will provide a systematic account of the lexical items in question.

All types of neologisms will be put into focus, including:

- Unstable neologisms: neologisms that are extremely new, being proposed or being used by a very small proportion of people.
- Diffused neologisms: neologisms which have reached a significant audience but have not yet been accepted.
- Stable neologisms: neologisms that have gained recognizable and probably lasting acceptance.

The study will be confined to the World Wide Web (www)/http Internet protocol because so far what has been done in terms of Kiswahili Internet searches is self limiting to www and cannot be found on the other protocols. The data will be limited to the glossaries generated by Microsoft office applications (Kiswahili version) and Google.

The study will focus on basic computer applications due to constraints of time. Future researchers/studies will handle the more advanced applications.

1.7 Theoretical Framework

1.7.1 Introduction

The study will draw on lexical pragmatics theory. The lexical pragmatics theory was developed by Blutner R. (1990). According to this theory, lexical items of a language are analyzed in a particular manner and interpreted according to a particular context. This means that a lexical item will first be analyzed depending on the type of meaning change it undergoes in a particular context. Context plays a critical role in meaning as some lexical items acquire different meaning under certain contexts.

Lexical pragmatics, according to Blutner (1990) cited by Mmbwanga (2010:5) constitutes two main issues: lexical semantics and conversational implication.

Lexical semantics strictly refers to word meaning. It goes further and even accounts for multi-word units. The following is a simple model of lexical semantics:

WORD: 'bird

Lexical Semantics

CONCEPT: BIRD

The set of birds

CATEGORY
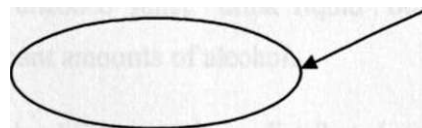
From Wilson D. (2006/07:2)

The goal of lexical semantics is to study the relationship between words and the mentally- represented concepts they encode. Conversational implicature refers to the relationship between what is said and what is meant in a conversation.

Lexical pragmatics theory distinguishes three main types of lexical pragmatics processes. They are **narrowing, approximation** and **metaphorical extension.**

1.7.2 Lexical Narrowing

In lexical narrowing, a word is used in a more specific sense than the encoded one, resulting in a narrowing of the linguistically-specified denotation. This is illustrated below.
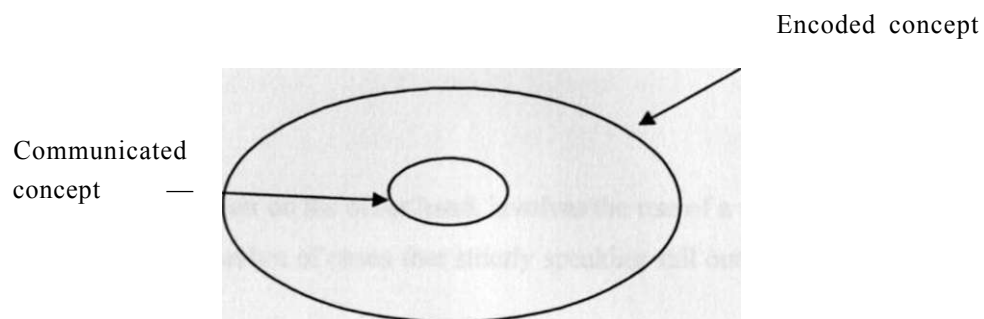
The effect of narrowing is to highlight a particular sub-part of the linguistically-specified denotation. The following examples clearly illustrate this.

1. All doctors drink   ('drink liquid', 'drink alcohol', 'drink a lot of alcohol')
2. Red face, red eyes, red sunset, red apple, red stamp, red watermelon;

In (1) above, drink might convey not the encoded sense 'drink liquid' but more specifically, 'drink alcohol', or 'drink significant amounts of alcohol.

In (2), each use of red would pick a slightly different colour, distributed over the object in a slightly different way for example, red apple has red peal while a red watermelon has a red flesh Wilson D. (2006-2007:3)

According to Wilson D. the central task for lexical pragmatics is to explain what triggers the narrowing process, what direction it takes, and when it stops.

1.7.3 Lexical Broadening

Lexical broadening consists of approximation and metaphorical extension.

In broadening, a word is used to convey a more general sense than what is encoded with consequent widening of the linguistically-specified denotation.
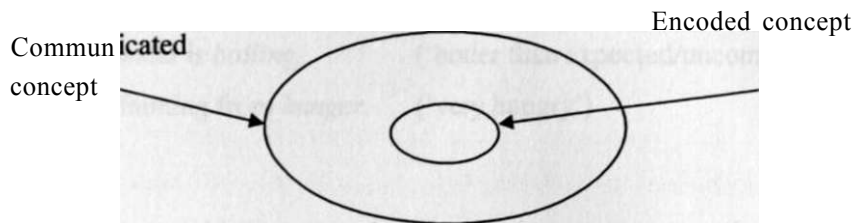
1.7.3.1 Approximation on the other hand, involves the use of a word with a relatively strict sense to a penumbra of cases that strictly speaking fall outside its linguistically-specified denotation.

The following sentences have employed approximation in their construction:

1. This coat costs *1000* dollars, ('about 1,000 dollars') (round numbers)
2. This injection will be *painless,* ^nearly painless,) (negatively defined)

The following is a graphic illustration of approximation.
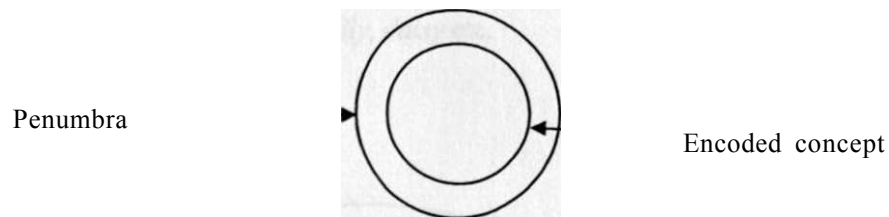
1.7.3.2 Hyperbole

This may be seen as a more radical type of broadening, which allows the communicated concept to depart much further than the encoded concept.
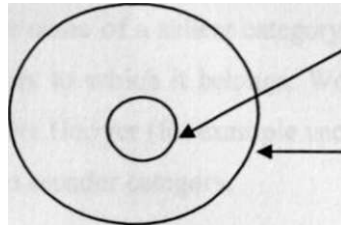
Encoded concept

Communicated concept

Let us use the sentences below to illustrate:

1) The water is *boiling*.   ('hotter than expected/uncomfortably hot')
2) P m fainting from *hunger*.   ('very hungry')

Sentence (1), would be approximation if the water were almost boiling, and a hyperbole if the water was merely hotter than expected, or uncomfortably hot. Sentence (2) would be approximation if the speaker were on the point of fainting and a hyperbole if she was simply very hungry.

1.7.3.3 Metaphor

According to Blutner (1998), cited in Wilson D. (2006-2007) a metaphor is seen as a more radical widening. Look at the following sentence:

Mary is *a rose, a lily, a daisy, a violet; a jewel, a ruby, a pearl.*

This sentence is a metaphor rather than an approximation because Mary falls very far outside the normal denotation of *rose, lily, daisy* etc.
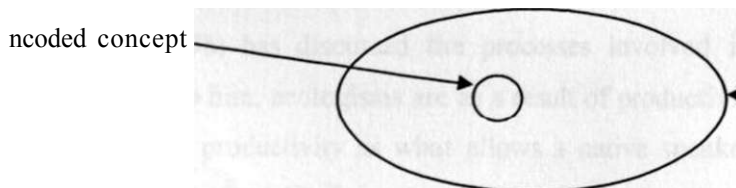
ncoded concept

Communicated concept

1.7.3.4 Category Extension

In category extension, the name of a salient category member is extended to apply to the whole broader category to which it belongs. Words that start out as names of a particular brand of item like Hoover (for example vacuum cleaners) may end up being used to apply to the whole broader category.

1. I have a cold. I need a *Kleenex* ('disposable tissue').
2. Have any *sellotapel* (sticky tape).

In (1), one might be understood to be asking, not specifically for *kleenex,* but for any brand of disposable tissue and in (2), the person could be understood to be asking not specifically for *sellotape* but any brand of sticky tape.

At present words like Google are being used to mean any type of Internet search, yet we know the term is a brand name for the popular Internet search engine called Google.

There are several other examples of broadening or category extension which contain constructions like the next X, the next Y for example:

1) Handguns are the next *flick-knives.*
2) Mint is the new *basil.*
3) Ironing is the new *yoga.*

1.8 Literature Review

This section will review the empirical literature, theoretical literature, Kiswahili literature, dictionaries, and literature on the Internet.

1.8.1 Review of Theoretical Literature

Fischer (1998) has discussed the processes involved in creation of neologisms. According to him, neologisms are as a result of productivity and creativity processes. He explains productivity as what allows a native speaker to produce a number of principally uncountable formations. Creativity on the other hand, he says, is extending the language system in a motivated but unpredictable way. Fischer (1998:181) quotes

Ullman (1962) in his discussion of the various types of motivation for new word coinage. These motivations include:

- phonetic motivation, common in onomatopoeia,
- morphological motivation, which gives rise to words whose meaning can be derived from the constituents of the word,
- semantic motivation, common in metaphors and metonyms,
- stylistic motivation, present in figures of speech, and
- graphic motivation for example in acronyms which use upper case such as INSET (In service training).

Alain Rey (1995) has discussed in depth the concept of neology and terminology in general. According to him, a neologism can be a simple morpheme- word or complex such as the noun or verb phrase, accepted by usage or conform to grammatical rules of the language in question.

According to Rey (1972), there are five criteria of evaluating neologisms:

(a) System conformity, which he says involves phonological and graphical conformity to the structure of the language. However, he points out that this may not be realized in the case of what he calls absolute creations such as onomatopoeia, abbreviations, and acronyms.

(b) Semantic potential. He says that a word needs to be properly motivated semantically for it to be considered useful.

(c) Productivity. At the transformational level, a neologism should be able to permit the creation of derivatives or compounds.

(d) Distinctiveness.

(e) Acceptability within the socio-cultural setup.

Baym (1996) has given great input to the language used on the internet. Her study provides insights into this study especially on the socio-linguistic aspects of Kiswahili neologisms.

Crystal (2001) and Crystal (2006) in his books: *Language and the Internet* has contributed immensely to the language used on the internet.

1.8.2 Review of Empirical Literature

In this section, we will review what has been done by scholars in the area of language on the Internet. To the best of my knowledge, perhaps only Mmbwanga (2010) has done a related study. In his unpublished MA thesis, he has done a detailed study of new words and new meanings on the Facebook. He has used lexical pragmatics theory to analyze the data. According to him, two processes responsible for creation of new words on Facebook are lexical narrowing and broadening. He further observed that borrowing from other languages and affixation was used to a great extent in creation of new words.

Chege (2009) in another unpublished MA thesis has used the theory of Constraints and Repair Strategies to describe rules and principles applied in the phonological and morphological nativization of Kiswahili and English loanwords into Maasai.

1.8.3 Review of Literature on Internet

Erickson et al (1998:4) define Internet as an instant and universal access to the world of information. According to him, all that one need is Internet explorer and access to the World Wide Web to gain access to a limitless amount of information.

Today, Internet is in no doubt the single most important and universal system for sharing and exchanging information. Erickson notes that Internet initiated a communications revolution. It bridges time, distance, and culture. The World Wide Web is what most Internet users use most of the time.

Perhaps it is as a result of recognition of the importance of Internet as an information exchange tool that most Internet service providers have decided to diversify the languages used for Internet searches. Kiswahili is one of the beneficiaries of this innovation.

Today we have Microsoft office applications Kiswahili version, Facebook Kiswahili version, and Google Kiswahili search Engine which as said earlier we will limit our study to. Google Kiswahili search engine has three versions i.e. Gmail, Google maps and Google chrome.

In his unpublished article, Kimani (2010:3) quotes Joe Mucheru as saying that the development will go a long way in improving operation the day-to-day lives of the people of East Africa Community, where according to Dr. Leonard Chacha over 120 million people speak Kiswahili.

Gmail is a free- based webmail with Swahili search which users of the service will be able to "dress" their Gmail display and even automatically translate foreign language into Swahili.

Kachwanya (September 22, 2009) in an Internet post, points out of that despite the enormous promise that Internet in Swahili brings, it has its share of problems. He points out that most people do not understand the technical words used. Many people in the region still consider English superior to Kiswahili. Lack of marketing effort by Microsoft and Google was also cited as derailing fast usage of this innovation.

According to Louis Otieno, the General Manager Microsoft East Africa and Southern Africa, the users of the Kiswahili version could localize their interface by installing a language interface pack (LIP) which has a glossary of over 300,000 words. LIP converts the entire Microsoft office products such as Word, Excel, Outlook and PowerPoint from English into Kiswahili.

1.8.4 Review of Kiswahili Literature

Momanyi (2010:6) in unpublished article acknowledges the fact that Kiswahili, like any other language may lack terminology to explain new concepts thus be necessitated to develop its own terminology to explain those concepts. She further cautions that when doing so certain rules regarding word coinage must be observed. She highlights some of the ways through which new words are created such as acronymy and borrowing.

She further expresses her concern over the large scale borrowing from English which sometimes is done without observing phonological and morphological rules of borrowing. Momanyi quotes Besha (1972) in the same article who argues that borrowing is not the only way to create a new tem when a new concept comes up.

Nkwera (1978:22) is of the opinion that we can expand Kiswahili lexicon by getting new words from Kiswahili dialects and even local Bantu languages. He adds that Kiswahili being an African language should not be allowed to lose that identity by excessive borrowing. Kiango (2004) in an unpublished seminar paper proposes methods that KiLINUX would use to coin new Kiswahili words for use in computers. He talks about two methods of word coinage. The first one is arbitrary coinage where a completely new word is coined and then giving it a new meaning for example:

Golo   Solar system

Kisopo   Radar

The second method is where one uses a certain criterion such as looking at physical characteristics of phenomena. Akida (1973) as quoted by Momanyi (2010) has in fact used the criteria to coin scientific terminologies. A good example is abdomen - *fumbatio* (fumbatio has been coined by looking at its function which is a bag-like thing holding things like liver, kidneys, appendix and others). He further gives other methods of creating new words including:

(1) Borrowing by translation for example, beanfly - *miharange,*

Armyworm - *viwavijeshi.*

(2) Inclusion of words from dialects and Bantu languages.

(3) Semantic transfer where a Kiswahili word is given new meaning for example *kupe* (someone who lives by others sweat).

(4) Acronymy, abbreviating, affixation, and repetition.

In his conclusion, Kiango observes that the methods suggested are never used in isolation. They complement each other since each of them has its strengths as well as weaknesses.

1.8.5 Review of Literature on Dictionaries

A dictionary is defined by the *Longman Advanced Leaner's Dictionary* as a book that gives a list of words in alphabetical order with their meanings in the same or another language usually their pronunciations.

Wikipedia calls a dictionary by other names like work book, lexicon or vocabulary. It defines a collection of words in one or more specific languages often listed alphabetically, with usage information, definitions, etymologies, phonetics pronunciations and other information. Perhaps, this definition rhymes with Loun (1985:53) who says that dictionaries can cover a very wide range of information related to words. Loun (1975:79) adds that the greatest attribute of a dictionary is that the meaning of words is the basic concern. Fred et al (1975:38) identifies three types of dictionary classifications:

i) Classification by range: Here we look at the volume and the spread of material assembled. He further subdivided this approach into three according to variable emphasis on: (a) density of entries

(b) The number of languages

(c) The extent of concentration on purely lexical data.

ii) Classification by presentation: This classification involves what Fred et al (1975:38) calls externals such as topographic style, use of special symbols and abbreviations, inclusions of grammatical remarks, and graphical illustrations.

iii) Classification by perspective: Fred says that this classification concerns the lexicographer's logistics and strategies.

Going by the classification by range, and looking at the number of languages variable, we have monolinguals, bilinguals, trilinguals and even quadrilinguals The *Kamusiya Kiswahili Sanifu* is one good example of a monolingual dictionary offering meaning of common Kiswahili lexemes. In addition, in the *Kamusi* there are a few specialized terminologies which have already been accepted into the language lexicon.

Synonyms are also given where a word has them. *The Longman Learner's Dictionary* is the other monolingual dictionary of great importance for our study.

Both *Kamusi ya Kiswahili Sanifii* and *the Longman Advanced Learner's Dictionary* provide deeper understanding of the usage of the word and sometimes they give the etymology of the word which in turn helps to comprehend its usage better.

The TUK.I *English - Swahili Dictionary* and TUKI *Swahili - English Dictionary* comes in handy in provision of equivalents in either of the languages. Although most of the lexicon is common words in many instances the Internet Swahili localizers used in dictionaries to get equivalents for common words before assigning them new meanings on the Internet.

Fred et al (1975:66) also identifies special dictionaries which comprise of highly specialized vocabularies of trades, crafts, arts and sciences. He adds that these types of dictionaries are unrepresentative of the common lexicon. Bergenholtz et al (1995:28) refers to these dictionaries as containing language for special purposes (LSP). He says that LSP dictionaries provide both encyclopaedic and linguistic information. Bergenholtz et al (1995:20) adds that most specialized dictionaries are prepared for users with the same native language. They are also often designed for experts, semi experts and lay people such as professional translators.

According the Wikipedia, the glossaries provide simplest meanings of the concepts especially in specialized fields. Bergenholtz et al (1995:28) identifies glossaries as a type of reference material alongside dictionaries encyclopedias, wordbook and word lists. In this category is the Babylon ICT dictionary. It is an online dictionary but can be down loaded freely and hosts thousands of ICT terms in seventy five languages. Microsoft KiLinux glossary and the Google glossary obtained from Tamarind Translations Company and such important materials in fact, sources of our data.

Numerous ICT glossaries are also available online. The IGCE ICT glossary and the UN - APCICT (2011) glossaries provide explanation to thousands of ICT terminologies.

1.9 Methodology

1.9.1 Data Collection

Primary data will be collected from Microsoft and Google glossaries. The glossaries will be downloaded from the Internet through Google search engine. The Google search engine is preferred to other search engines such as Bing and Yahoo because it is richer in data. The Kiswahili style guide used by the Microsoft Open Swahili Localization Project will also be used as a source of data.

Since the data available in the above sources is enormous, a sample of between one hundred and one hundred and fifty neologisms will be selected. Both purposive and probability sampling strategies will be used.

Purposive sampling will be used to select as much data as possible, which the researcher believes need to be discussed. The data selected through purposive sampling will then be put into various categories. Thereafter, stratified random sampling technique will be used to select the final sample from each category.

Publications in form of books and journals as well as unpublished materials like theses and Wikipedia articles will provide information and literature to inform the study.

1.9.2 Data Analysis

The data will be analyzed using categories that provide the most comprehensive analysis of the processes involved in creation of neologisms: borrowing, abbreviations and acronyms, affixation, compounding and adopting.

Lexical pragmatics approach will be used to interpret and analyze the data. The two processes of lexical pragmatics theory: narrowing and broadening will be used.

1.10 Summary

This chapter formed the basis of the study. It set off by introducing the topic of the study giving background of the study, statement of the problem, objectives of the

study, hypotheses, rationale, scope and limitation, theoretical framework, literature review, and methodology .

In the background of the study section, we sought to elaborate the concept of neologization as linguistic phenomena. The statement of problem explained why we think there is a gap in knowledge in the area of the study. Objectives were clearly stated reflecting on the topic of study. The hypotheses were based on the objectives. The rationale clearly showed the justification of the study. The scope and limitation confined the study to neologisms on Google and Microsoft.

The theoretical framework explained how the lexical pragmatics theory would be used to analyze the neologisms in the data. Literature review provided us with insights into what scholars have said and done on the topic. Finally the methodology gave a detailed plan of how the research was to be conducted.

CHAPTER TWO

CLASSIFICATION OF THE NEOLOGISMS IN THE DATA

2.1 Introduction

This chapter seeks to classify the neologisms used in our data. The classification is important as it lays a foundation of their discussion in the later chapters. The classification is on the basis of the processes involved in their formation. We thus have acronyms and abbreviations, compounds, loan words and derivations.

Most of the Kiswahili words used on the Internet are either newly created words or existing words which have been assigned new meaning. The reason behind the words being neologisms is that Internet is a new phenomenon among Kiswahili users and therefore new terminologies needed to be created to express all the concepts that came with it. The task of coming up with appropriate terminologies was undertaken by language experts with help from specialists in Information Technology. This was done in localization projects of Microsoft Company, Google search engine and the *Kamusi Project.*

The new lexical units formed and the new meanings assigned to the existing lexical units were then adopted. However, it is important to state that the program of localization by all the above entities is an ongoing process with prospects for future localization programmes.

This chapter samples and examine the Kiswahili neologisms available in the glossaries of Microsoft and Google search engine as well as provide insights into the processes involved in the formation of the same neologisms.

2.2 Typologies of Neologisms in the Data

The neologisms used in the data can be applied to what Rey call structures lying between the morpheme and the phrase. He adds that between these two structures lies the domain occupied by the words (Rey 1995:65). In our data, we will talk about morphemes in reference to free morphemes as well as derivational morphemes which apply rules of affixation (suffixation and preflxation). Both processes have been responsible for creation of numerous lexical units referred to as neologisms in this

study. For instance, from a single verb like the one below, other words in the data were coined:

Uliza   (Querry - V)

                              Ulizo   (Querry - N)

                              Kiulizo   (Question mark)

Phrases in our data are equally many. Most of them are as a result of loan translations of English phrases. An example to illustrate this is *kokota na dodosha* which is a translation of drag and drop. There are also phrases which use -a- linked modifiers (wa, la, cha, ya) for example:

     kompyuta ya mezani   (personal computer)

     jina la mtumiaji   (username)

2.2.1 Acronyms and Abbreviations

Acronyms and abbreviations have widely been used in Microsoft Kiswahili KiLinux glossary which is the core of our data. We categorise them according to Zahariev (2004:17) whereby he categorizes acronyms and abbreviations into four:

- Letter abbreviations for example:

  KM (Kompyuta ya Mezani) 'Personal Computer'

- Read as letter sequence for example:

  WWW (Wavu wa Walimwengu)   'World Wide Web'

- Read as word for example:

  IKU (Itifaki kudhibiti Urushaji) File Transfer Protocol

- Mixed for example:

  3P (Pande 3)   '3 Dimension'

The other criteria that we will use to classify of neological acronyms and abbreviations, is the one used by the Microsoft Style Guide. Here, we have acronyms and abbreviations that came out the localization process.

English	Acronym	Kiswahili	Acronym
Alternate	Alt	Kibadala	Kbdl
American Standard code for Information Interchange	ASCII	Msimbo Sanifu wa Marekani wa Mabadilishano ya Habari	ASCII
Bulletin Board Service	BBS	Huduma za Ubao wa Matangazo	HUM
carbon copy	cc	Nakala	nkl
Central Processing Unit	CPU	Kitengo Kikuu cha Uchakataji	KKU
Control	Ctrl	Kidhibiti	ktbt
Frequently Asked Questions	FAQ	Maswali Yaulizwayo Marakwamara	MYM
File Transfer Protocol	FTP	Itifaki ya Kuwasilisha Faili	IKF
For Your Information	FYI	Kwa Taarifa Yako	KTY
Internet Servive Provider	ISP	Mtaji Huduma Wavuti	MHW
Reference	Ref	Yahusu	Yah
Transmission Control Protocol	TCP	Itifaki ya Kudhibiti Urushaji	IKU
Uniform Resource Locator	URL	Kioneshi Sanifu Rasilimali	KISARA
World wide web	WWW	Wavu wa Walimwengu	WWW
I/0(input/output)		Ingizo/zao	I/Z

OK   SAWA

bps   bks

PC   KM

2.2.1.1 Localized Acronyms and Abbreviations

The other category is that of acronyms or abbreviations which have been localized but have not been spelled out in both English and Kiswahili because of space constraints. The following are examples:

English	Kiswahili
DOM source of Selection	Uteuzi wa Chanzo DOM
LAN(Local Area Network)	LAN (Mtandao Kiambo)
RSS Feeds	Mlisho RSS
SVG only	SVG tu
ISP (Internet Service Provider)	ISP (Mtoaji Huduma Wavuti)
IP (Internet Protocol	IP (Itifaki Wavuti
OCSP server	seva OCSP
FIPS mode	Modi FIPS

Some acronyms and abbreviations are considered commonly understood and were therefore neither localized nor spelled out in English. They include:

CD

DVD

ISO

CRC

ID

RGB

ISP

n/a

- SQL
- TCP/IP

In addition to the above, the Kiswahili style guide has measurement abbreviations used in product user interface and in technical documentation. Some of them include:

English	English abbreviation	Kiswahili	Kiswahili abbreviation
Gigabyte	GB	Gigabaiti	GB
Gigabit	GBit	Gigabiti	GBit
Kilobyte	KB	Kilobaiti	KB
Kilobit	KBit	Kilobiti	KBit
Point	Pt	Pointi	Pt
Inch	Inch	Inchi	No abbreviat

The long list of acronyms and abbreviations in the Kiswahili Internet searches confirm Zahariev's assertion that both are universal phenomena and are important source of new language elements.

2.2.2 Compounds

According to *Wikipedia,* a compound is a lexeme that consists of more than one stem. In other words, two or more words are joined to form one new lexical unit. This new unit may take the form of one, two or more words. If the compound is made up of two or more words, an hyphen can be used to separate them or they can exist independently. There are numerous compound neologisms on the Internet. The following are some of the examples:

English	Kiswahili
actions menu	menyu - vitendo
applications	programu - tumizi
default search engine	injini -tafuti msingi
fullscreen mode	modi skrini-nzima
menu bar	mwabaa-menyu
search engine	injini -tafuti
break point	kituomwisho
copyright	hakimiliki
foreground	mandharimbele
intranet	wavutindani
javascript	hatijava
keyboard	baobonye
stylesheet	lahamtindo
spell checker	kikagua tahajia
security warning	hadhari ya usalama
public domain software	programu huria
inbox	kisanduku pokezi
home page	ukurasa kaya
hard copy	nakala chape
hard drive disc	diski kuu
express setup	muundo usanidi
drag and drop	kokota na dondosha
digital camera	kamera dijiti
dialog	kisanduku ongezi
dial-up networking	mtadao simu
database	hifadhi data
data bank	kanzi data
country code	msimbo nchi
control panel	paneli dhibiti
clipboard	ubao pogoa
character set	seti kibambo

bold button	kitufe koza
alternative key	kibonye mbadala
blank space	nafasi tupu
blind carbon copy	nakala fiche

Each of the above compound neologism represents one concept despite the fact that the each component word might have its own different meaning.

2.2.3 Loan Words

Loan words forms the bulk of the neologisms found on Kiswahili Internet searches. They are presented as borrowed words which have been phonologized in order to fit in Kiswahili word phonology and morphology. Loan translations and borrowings from Kiswahili dialects and Bantu languages are also part of this class of neologisms. The list below has loan words which we will be referring to in our discussion in the later chapters.

English	Kiswahili
account	akaunti
acronym	akronimia
adapter	adapta
auto	oto
auto format (n)	fomati (n)
automatic	otomati
axe	aksi
beep	bipu
beta	beta
bit	biti
boolean	buleani
cache	kache
caret	kareti
catalog	katalogi
categories	kategoria
category	kategoria

chart	chati
chrome	kromu
demo	demo
dial	dayo (n)
digit	digiti
digital	dijitali
disc	diski
disk	diski
driver	dreva
dump	dampo
fax	faksi
flip	flipu
folder	folda
format (n)	fomati (n)
font	fonti
gallery	galari
gecko	gecko
getter	geta
graphics	grafiki
icon	ikoni
italic	italiki
log (n)	logi (n)
logarithm	logi
media	media
memo	memo
menu	menyu
micro	mikro
monitor (n)	monita
office	ofisi
operator	opereta
scan (v)	skani (t)
size	saizi
suite	suti

switch	swichi
tag	tagi
template	templeti
trojan	trojan i

As we can see from the data, English loans are adapted to Kiswahili by way of sounds especially final vowels in order to fit in Kiswahili word structure. Words like *data, demo and memo* already conform to that structure and are left unchanged.

2.2.4 Derivations

Derivations are words formed by adding affixes to an existing word or base thus changing the semantics of the word. The following Kiswahili neologisms are as a result of application of affixes to the root of the words.

English	Kiswahili
access(n)	fikio (n)
accessibility	ufikikaji
activate	amilisha
active	amilifu
animation	uhuishaji
archiving	ujalidi
associate	nasibisha
association	unasibisho
attachment	kiabatisho
boot(n)	washo (n)
browser	kivinjari
citation	mtajo
classify	ainisha
code signing	msimbo
combination	muunganiko
compression	mfinyanzo
connection failure	unganisho shinde
control (n)	kidhibiti
converter	kigeuzi

counter	kihesabio
cracker	mharibu
customize	kaidisha
deactivate	amilishua
debugger	kieua
descending	teremua
designing	ubunifu
disability	ulemavu
disable	lemaza
display (n)	zinzo (n)
drive	kiendeshi
editor	mhariri
embedded	futike
feed (n)	mlisho
frame work	kiunzi
hacker	mdukizi
highlighter	king'azo
interrupt (n)	katizo
package	kivunge
pagination	ukurasishaji
recycle bin	kisuduru
registration	usajili
registry	masjala
screen saver	kilezi
shading	urangishaji
transfer (n)	uhawilishaji
uninstall	sakinusha

Many languages in the world use derivation to create new words. Through derivation numerous neologisms have been created for use in Internet searches that use Kiswahili. As the data shows, derivation has been done at the level of nouns (nominal derivation) and verbs (verbal derivation). In nominal derivation, affixes are added to the root or stem of the word. The prefixes are added in order to enable the noun to fit

in one of the Kiswahili noun classes. The suffixes give the nouns various senses. Verbal derivation in the data mainly involves adding of suffixes in the root of a verb in order to give the verb different senses.

2.2.5 Phrasal Neologisms

English	Kiswahili
administrator setup	usanidi wa mtawala
discussion board	bodi ya majadiliano
disc space	nafasi ya diski
error code	msimbo wa hitilafu
mail box	sanduku la barua
Net Reset Error	Hitilafu ya Kusetu Upya Mtandao
personal computer	kompyuta ya mezani
page view	mwoneko wa ukurasa

Phrasal neologisms in the data represent neologisms that are formed when '-a'-linked modifiers are used to link the words that form the compound neologism. Examples of such modifiers are 'wa', 'ya', and 'la'.

2.2.6 Blends

A blend is a word formed from parts of two or more other words. These parts are sometimes, but not always, morphemes (www.wikipedia). Our data has the following three examples drawn from Microsoft glossary.

Neologism	Component Words	English Equivalents
msidoti	mstari+doti=msidoti	dotted line
chatiriri	chati+tiriri=chatiriri	flow chart
ngarusi	kinga+virusi=ngarusi	antivirus

2.3 Word Formation Processes

2.3.1 Introduction

Word formation refers to the various strategies of creating new lexical units. Mbwanga (2010:19) cites Algeo et al (1982) as having identified five processes involved in creating new words: combining, shortening, blending, coinage, and shifting senses of old words as well as in some cases, their morphemes.

However, in our study we will discuss the following word formation processes which are responsible for creating new words in Kiswahili:

- Acronymy abbreviating

- Compounding

- Borrowing

- Derivation

2.3.2 Acronymy and Abbreviating

Acronyms are universal phenomena of systematic abbreviation of expressions and represent the most productive source of new lexicon items for many languages Zahariev (2004:12). The Microsoft Kiswahili style guide defines an acronym as a word made up of initial letters of the major parts of a compound term if it is pronounced as a new word. However, Zahariev (2004:16) disputes this kind of definition by arguing that it does not account for many acronyms such as DNA (for deoxyribonucleic acid). This is why perhaps the definition by Akmajian's et al (2001) as cited by Mmbwanga (2010:22) that acronym formation is a process that entails abbreviation and shortening of words holds more water.

According to Zahariev (2004:17), acronyms fall into four separate categories:

- Abbreviations such as NY (for New York) or CD (for compact disc).

- Letter sequences for example DNA, CIA.

- Read as word for example SQUID (Superconducting Quantum Interference Device) or TUKI in Kiswahili (for Taasisi ya Uchunguzi wa Kiswahili).

- Mixed or split such as 3M (for Minnesota Mining and Manufacturing Company).

Kiswahili searches have a number of acronyms and abbreviations, some of which have been localized while others remain untranslated.

2.3.2.1 Localized Acronyms and Abbreviations

This category comprises of acronyms and abbreviations which have been translated into Kiswahili. These have spelt out words that comprise the acronym or abbreviation as well as the language specific translation and the resultant acronym or abbreviation as in the examples below:

English	Acronym	Kiswahili	Acronym
Alternate	Alt	Kibadala	Kbdl
Bulletin Board Service	BBS	Huduma za Ubao wa Matangazo	HUM
Reference	Ref	Yahusu	Yah
Uniform Resource Locator	URL	Kioneshi Sanifu Rasilimali	KISARA
World wide web	WWW	Wavu wa Walimwengu	WWW

2.3.2.2 Unlocalized Acronyms and Abbreviations

The other category is that of acronyms or abbreviations which have been left untranslated. Some have been followed by their full spelling in English in case they will require to be explained in Kiswahili and others have been left without any explanation. The reasons behind leaving the acronym or abbreviation in the form it appears in the original language are two.

(a)According to the Kiswahili style guide, acronyms and abbreviations are often used in an unpredictable way. The guide gives an example of an abbreviation like **DLL** which is an important file extension that a software program will need to run properly and if **DLL** is replaced by another acronym, the program will probably crash.

The following are examples:

English Acronym	Kiswahili Equivalent
English Acronym	**Kiswahili Equivalent**
DOM Source of selection	Utezi wa Chanzo DOM
LAN (Local Area Network	LAN (Mtandao KiamboJ
RSS Feeds	Mlisho RSS

(b)Some acronyms and abbreviations are considered commonly understood and therefore they are neither localised nor translated into Kiswahili. They include:

- **CD**
- **DVD**
- **ISO**
- **ID**

(iii) Measurement abbreviations used in product user interface and in technical documentation. Some of them include:

English	English abbreviation	Kiswahili	Kiswahili abbreviation
Gigabyte	GB	Gigabaiti	GB
Gigabit	GBit	Gigabiti	GBiti
Kilobyte	KB	Kilobaiti	KB
Kilobit	KBit	Kilobiti	KBiti

2.3.3 Compounding

According to *Wikipedia*, a compound is a lexeme that consists of more than one stem. In other words, two or more words are joined to form a new word. Bauer (1983) is cited by Mmbwanga (2010:20) as saying that compounds result from a process called

compounding or composition and which means putting two words together to form one. However Akmajian (2001:33) demonstrates that compounds are not limited to two words only as found in *sailboat rigging.* Many languages employ compounding as a strategy for creating new words. Kiswahili is not an exception; a good number of Kiswahili neologisms on the Internet are compounds. Kiswahili allows formation of **noun + noun, noun + verb** and **verb +verb** compounds. Let us start with **noun + noun** formation.

ufichojina

uficho + *jina*

Noun +Noun = Compound Noun

In this class of compounds, two nouns *uficho* and *jina* are joined to form *ufichojina* which means anonymity. The second noun in this case acts as a modifier of the first noun. The following are some of the examples:

mwanagenzi

mwana + *genzi* = mwanagenzi

Noun + Adjective =Compound Word

Mwana in the above example represents a person and *-genzi* is an adjectival root whose meaning is an apprentice. In the context of our study, *mwanagenzi* refer to a beginner.

There are compounds which have been hyphenated in order to separate the two words forming it. According to the Microsoft Kiswahili style guide this separation is intended to minimize what they refer to as the effort that would otherwise be used by the user to disentangle the inverted phrase. An example of such compounds is:

programu - tumizi

programu + tumizi

Noun + Adjective = Compound Word.

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Programu - tumizi refer to application(s). Another example is *mwito - toka* which involve joining of a noun and a verb to form a compound that means call - out.

Kahigi (2004:11) says that it is possible to create compounds without necessarily joining the words as long as the words represent one concept. He gives examples like *pembe mwinamo* and *nusu duara* which are Kiswahili equivalents for angle of depression and semi circle respectively. These kinds of Kiswahili compounds are many on the Internet but we will list a two:

nakala   fiche

nakala   = fiche

Noun + Adjective = Compound Word.

Nakala fiche refers to a blank carbon copy.

programu   tunzi

programu   +   tunzi

Noun + Adjective = Compound Word

Programu -tunzi means composer.

2.3.4 Borrowing

Loanwords form the bulk of the neologisms found on Kiswahili Internet searches. They were brought into Kiswahili lexicon through the process of borrowing. Haspelmath et al (2009:36) cites Thompson et al (1988) as saying that borrowing in its restricted sense, refers to incorporation of foreign elements into speaker's native language. He further describes a loanword as a word that at some point entered the lexicon of a language through borrowing (or transfer or copying).

Once a foreign word finds its way into a language, its form and sometimes its meaning are changed and it becomes an integral part of that language Zanawi (1979:4). However, borrowing is never done haphazardly; it is guided by both social and linguistic factors. Haspelmath et al (2009:76) identifies some of the potential

factors as including: semantic complexity, abstractness, and syntactic factors such as word-class affiliation like noun versus verb versus adjective; content word versus function word.

English loanwords are integrated into Kiswahili lexicon on the Internet through two types of adaptations: phonological adaptation and morphological adaptation.

2.3.4.1 Borrowing by Phonological Adaptation

Borrowed words are often adapted to the Swahili norm, usually by inserting vowels into consonant clusters and after word- final vowels. The inserted vowels depend largely on the phonological environment Haspelmath (2009:90). For example the word computer is rendered as *kompyuta* in Kiswahili rather than *kompiuta* because of the above argument. There are many loanwords on all the Internet searches which are formed through phonological adaptation including:

English	Kiswahili
comma	koma
icon	ikoni
computer	kompyuta
licence	leseni

Within the category of phonologized loanwords are those lexical units that did not undergo any phonological changes because they already appeared in the form that was acceptable in Kiswahili word morphology. Examples include *java, demo, data* and *memo* which already conform to CVCV phonological structure of many Kiswahili words.

2.3.4.2 Borrowing by Morphological Adaptation

Haspelmath et al (2009:90) say that each of the major word categories: noun, adjective and verb has its own characteristic paradigm to which loan words have to be adapted. He adds that, each borrowed noun for instance has to be assigned a class whose choice is based on a mix of semantic and phonological criteria. For example

class 1 and 2 of Kiswahili nouns comprise of all living organisms which mainly take noun prefix *m* in singular form and *wa* in plural.

Bon-owed adjectives and verbs on the other hand are morphologically less integrated than nouns. Native adjectives take a nominal prefix in agreement with the class of the head noun. For example, we will say *kitambaa kichafu - vitambaa vichafu* <dirty cloth -dirty cloths>.

In the above example, *chafu* is a root which takes prefix *ki* present in the head noun.

2 .3.4.3 Loan Translations

Zenawi (1979:4) refer to loan translations also as loan shifts. He adds that they contain only indigenous morphemes but has a foreign structure. Loan translations form the bulk of the loanwords found in Kiswahili localization projects by Google, Microsoft and the *Kamusiproject.* They include:

English	**Kiswahili**
alternative key	kibonye mbadala
decimal numbers	namba desimali
menu proxies	menyu proksi
maximize	tanua

2.3.4.4 Loanwords from Kiswahili Dialects and Bantu Languages.

Loan words from Kiswahili dialects and Bantu languages are as a result of what Rey refer to as internal borrowing; the kind of borrowing from a variety of the same system (Rey 1995:69). These are not many because of two reasons. Firstly, time was limited for the localizers and therefore they were unable to do any meaningful research into these words. Secondly, most of the dialects and Bantu languages lack dictionaries which could have been consulted. The following are few examples:

Neologism	English Equivalent
nywila	password
kaya	home

Nywila, according to Sewangi, was borrowed from *nywila nywila*, a word that was used as a secret code by the fighters in Tanganyika during the *Majimaji* uprising. On the other hand, *Kaya* was borrowed from *Mijikenda* which means home or village.

2.3.5 Derivations

The online *Oxford English dictionary* defines derivation as a word formed by adding affixes to an existing word or base thus changing the shape and the semantics of the word. Through derivation, numerous Kiswahili words can be formed from a single root. This process was heavily relied on to create new words for use on Kiswahili Internet searches. For example, the following verbs gave rise to three terminologies each.

fikia 'access' (V)	*fikio*	access-N
	ufikiaji	accessibility
	ufikio	accessing
lisha 'feed'	*mlisho*	feed-N
	milisho	feeds
	ulisho	feeding

Derivation in all Kiswahili localizations programmes is done in two levels:

i.   Nominal derivation

ii. Verbal derivation

2.3.5.1 Nominal Derivation.

Nominal derivation, refer to forming nouns from roots of words. The words formed through this process are what Mohamed (2001:29) call noun deverbatives. According to him, the resultant nouns carry a prefix and a suffix. The prefixes concerned are class prefixes while suffixes can take various forms with each form representing certain semantic significance.

The suffixes which Haspelmath et al (2009:90) otherwise call final vowels in Kiswahili are: *i, -e, -o -u, -a,* and *-ji.* The following is a brief discussion of each.

Suffix-L

Mohamed (2001:29) describes -i as an agentive suffix because it indicates the person or thing performing an action expressed by the verb. Examples drawn from the data include:

Noun	English Equivalent
kithibiti	control
kigeuzi	converter
kitenganishi	delimiter
kiendeshaji	operator (device)

Mbaabu (1985:108) say that suffix - i can be used with prefix - u to form abstract concepts as exemplified below:

Noun	English Equivalent
ujalidi	archiving
uhalisi	authenticity

Suffix -e

Nominal derivations that apply suffix -e shows the person or object experiencing the action. We will cite two examples out of many in the data.

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Noun	English Equivalent
dulishe	highlighted
aridhishe	bulleted

Suffix -o

Nouns formed of suffix -o represents two types of meaning:

(i)The instrument or object used for doing a task. For example:

Noun	English Equivalent
vikorokoro	accessories
misimbo	ciphers

(ii)The noun shows the ultimate result of action being performed.

Noun	English Equivalent
Mtengo	allocation
Mwimo	focus

According to Mbaabu (1985:108), the nominal deverbatives formed through affixation of -u are few in Kiswahili. They are indeed very few in all the localization projects: The few such noun neologisms in our data include:

Noun	English Equivalent
umuhimu	importance
pungufu	less

Verbs Denoting Denial

Verbs that denote denial take prefix si- as demonstrated in the following examples:

Noun	English Equivalent
siamilifu	inactive
sitangamanifu	incompatible
sibayana	virtual

2.3.5.2 Verbal Derivation

Mohamed (2001:35) observes that verbal derivation subsumes six major grammatical categories: passive, stative, causive, prepositional, conversive and reciprocal. Out of these reciprocal and causive were used to form neologisms in our data.

Verbs in Reciprocal Form

In Kiswahili, verbs in reciprocal form take suffix *-ua* or *-oa* depending on the vowel present in the root. However, our data comprise of those that have suffix *-ua*

Verb Equivalent	English Equivalent	Passive State	English
sanidua	uninstall	sanidi	install
futua	undelete	futa	delete
simbua	decrypt	simba	encrypt

Verbs in Causative Form

There are nouns which were transformed into verbs by using suffix *-ish* and later used to form nouns by applying suffix *-ji.*

English Noun	Kiswahili Verb	Kiswahili Noun	
space	nafasisha	unafasishaji	'spacing'
update	sasaisha	usasaishaji	'updating'
customize	kaidisha	ukaidishaji	'customizing'

2.4 Summary

This chapter dealt with the neologisms used on Kiswahili Internet searches and the processes involved in their formation. In the Introduction section, we have explained the rationale of having Kiswahili on the Internet. The word forming processes discussed the various strategies used in creating the neologisms. The strategies are: acronymy and abbreviating, compounding, borrowing and derivation.

Acronymy and abbreviating dealt with the neologisms resulting from abbreviating and shortening of words. In compounding, we discussed strategies employed to form compound words; examples are given to elaborate each strategy. Borrowing tackled the two types of adaptation used to integrate English words into Kiswahili. These strategies are phonological adaptation and morphological adaptation. Other types of loans which are loan translations and borrowing from dialects and Bantu languages are discussed in this section too. Lastly, we have discussed derivation technique where affixation (prefixation and sufflxation) were key issues in both nominal derivation and verbal derivation.

CHAPTER THREE

COMPARISON OF LOCALIZATION PERSPECTIVES BETWEEN GOOGLE AND MICROSOFT

3.1 Introduction

In this chapter, we set to compare the localization perspectives between Microsoft and Google in order to find out which one is more effective. In doing the comparison, we will seek to determine the extent to which the lexical items in both Microsoft and Google glossaries accurately adhered to the rules of Kiswahili grammar in particular its phonemic and syllable structure, word structure and meaning. We will also discuss the level of clarity of the meaning of the terms to the user. We will also discuss some of the terminological discrepancies between the two glossaries. Lastly, we will highlight some of the ambiguities resulting from usage of some of the neologisms.

3.2 Accuracy in Adherence to Grammar

3.2.1 Phonological Adherence

At the phonological level, most of the neologisms have demonstrated consistency with Kiswahili phonemic inventory and syllable structure. At the level of words, all the loan words (nouns, verbs and adjectives) display the final phoneme being a vowel as is the norm in all Kiswahili words. Consider the following examples drawn from Microsoft and Google glossaries and which appear in the Microsoft Word window.

English	Kiswahili
font	fonti
ruler	rula
program	Programu

All the English lexemes above end with consonants but when phonologized into Kiswahili, they assume a final vowel 'a' as is required of Kiswahili lexemes.

However, the rule of final vowel is violated in when forming acronyms because as Zahariev (2004:14) notes, some acronyms can be spelled out as letters and not words as shown in the examples below:

Acronym	Full word	English equivalent
Kbdl	kibadala	alternate
Ktbt	kithibiti	control
Nkl	*nakala*	carbon copy

3.2.2 Morphological Adherence

At the level of morphology, Kiswahili words usually have prefixes and suffixes. Kiswahili prefixes in nouns as Mohamed (2001:53) explains usually mark class while the suffixes mark different senses of the word. Each borrowed noun has to be assigned a class. The choice of the class is based on a mix of semantic and phonological criteria. Zanawi (1979:90). For example, any noun representing a living organism and takes prefix *m-* in singular form and *wa-* in plural form is assigned class 1 and 2.

Loan words similarly, once formed must be assigned a noun class among the many classes that there are in Kiswahili because as Rey (1995:37) observes, the designatory and denominatory power of a sign (word, noun or term) is derived from the class of referents to which it corresponds. In the data that we are working with, it is possible to assign each noun neologism in a class according to classification by Mbaabu (1995:65) as exemplified below:

class 1 and 2

	Kiswahili Noun	English Equivalents
Microsft	msanidi- wasanidi	installer-installers
Google	msimamizi wa tovuti - wasimamizi wa tovuti	website-manager website managers.

Class 3 and 4

Microsoft	mtandao - mitandao.	Internet - Internets,
Google	mkahawa bwaka - mikahawa bwaka	cyber cafe - cyber cafes

Class 5 and 6

Microsoft	jina - majina	name-names
Google	onyesho - maonyesho	display-displays

Class 7 and 8

Microsoft	kisoma onyesho - visoma onyesho readers	screen reader-screen
Google	kibambo - vibambo	character-characters

Class 9 and 10

Microsoft	lebo - lebo	tag - tags
Google	hatijava - hatijava	javascript - javascripts

Class 11 and 10

Microsoft	ukurasa kaya - kurasa kaya	home page - home pages
Google	ukurasa - kurasa	page - pages

<u>Class 14</u>

Microsoft	usanidi	installation
Google	uwekaji	installation

Sufflxation is another morphological process that was applied to create neologisms on the Internet searches. According to Chege (2010:67) sufflxation is a process whereby affixes are attached to the end of another morph. Sufflxation was applied to the existing words at the end of the root or stem in order to give the words new meaning and form. In Kiswahili, words are derived from other words by adding suffixes such as -a, -e, -i, -o, -u, -ji, -vu, -fu,-sh-. Both Microsoft and Google consistently used this strategy to create very many neologisms. The following are some examples from our data.

	Kiswahili Noun	**English Equivalent**
Google	kikasha pokezi	inbox
	mpangilio	layout
	uokoaji	recovery
	sanikisha	install
Microsoft	nyongeza	add - on
	uangalifu	attributes
	uangavu	brightness

3.3 Inaccuracies in Adherence to Grammatical Rules

3.3.1 Phonological Inaccuracies

In a number of occasions, both Microsoft and Google created neologisms which did not pay total attention to Kiswahili phonetic regimes. This problem is particularly seen in the case of borrowed words. As Kiango (2004:8) observes, creation of the loan words in Kiswahili ought to be guided by spelling and pronunciation of the word from which it is borrowing. Kiango points out that in quite a good number of Kiswahili words, a consensus has not been reached as to how they ought to be spelled. He cites examples like December which some Kiswahili users render as *Desemba* and others as *Disemba*. Despite this argument, some neologisms in the data portrayed obvious contravention of the rules of Kiswahili grammar as demonstrated by the following examples where borrowing is done from the English language:

Automatic

Google   otomatiki

Microsoft   otomati

In the phonologization process of the word automatic, Google observed the phonemic rules by factoring in all the syllables present in the English word. However this did not happen in the case of Microsoft loan where the last syllable /ic/ was left out in the borrowed word.

Another inaccuracy is present in the Microsoft glossary where *infrared* is phonologized as *infaredi*. In this case, sound /r/ in the syllable /fra/ has been deleted hence resulting with a completely new syllable /fa/. This inaccuracy does not affect the resultant word but also may cause ambiguity in the meaning of the word.

Media in the Microsoft glossary has remained the same in both English and Kiswahili renditions yet the correct pronunciation of the word is *mi. dda* and therefore the right Swahili word would have been *midia*. The same problem manifests in *gecko* where the Microsoft glossary rendered it the same way in Kiswahili. This is an obvious and grave error since Kiswahili doesn't have sound /ck/ in its phonemic directory; instead

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the sound should have been presented as /k/. Therefore, the correct Kiswahili equivalent should have been *geko*

3.4 Clarity of Meaning

When we talk about clarity, the question we are asking ourselves is whether a word, phrase or expression is easily understood. Clarity of the neologisms in the Internet searches is to a very large extent influenced by the level of accuracy and consistency of the localized language. To a very large extent, both Microsoft and Google have been keen on consistency in the use of terminologies they have created. However being the two lead groups in the localization process, there has not been sufficient effort to standardise their glossaries hence there are a number of concepts which are referred to by different terms in both Microsoft and Google glossaries as we will demonstrate later in this chapter.

3.4.1 Clarity at the Level of Word Structure

To a very great extent, both Microsoft and Google gave preference to single word-neologisms which according to the Microsoft style guide, have a greater potential of being easily understood. Where it was not possible, Microsoft and Google simple compounds and acronyms were created. Effort to create simple compound neologisms was made with substantial success. Consider the following compounds:

	Kiswahili Term	English Equivalent
Google	kadi ya mkopo	credit card
Microsoft	kameradijiti	digital camera

The term *kadi ya mkopo* is a very clear translation of credit card and is not likely to present any difficulty in understanding to the Internet user. Similarly, the meaning of *kamera dijiti* is quite clear to any person who would come across it on the Internet.

Where compounds are made up of more than two words, efforts are made to disentangle the meaning by use of hyphen to separate the constituent lexemes as found in

matini - msimbo fiche   'encrypted script'.

3.4.2 Uniformity in Terminology Usage

There is uniformity in creation of many terms between Google and Microsoft localizers. Most of the English terms that have Kiswahili equivalents in the available English - Swahili dictionaries displayed uniformity. For example,

Term	Kiswahili Equivalent
verify	thibitisha
browse	vinjari

The equivalents for verify and browse in all English - Swahili dictionaries are *thibitisha* and *vinjari* respectively.

The same case applies to compounds which were borrowed as loan translations into Kiswahili for example:

bookmark (N)   *alamisho*

There are terms that are very clear semantically and therefore the localizers did not have a problem with coming up with a common Kiswahili term. This case applied to terms like:

Term	Kiswahili Equivalent
export	hamisha
import	ingiza

According to the UN - APCICT glossary of ICT terms, to import is to save information from one computer program to another and therefore the Kiswahili term *ingiza* is a perfect equivalent of the term because it conveys the same meaning as the English term. The same argument applies to *hamisha*, the Kiswahili equivalent for export which the same glossary explains as the process of retrieving any text or information created by one program and transferring it to another program.

Uniformity is also found in stable neologisms the type that Rey (1995:77) says have gained recognizable and probably lasting acceptance. A good example of such neologisms is *tovuti* which is the Kiswahili equivalent of website. This neologism was

created immediately after the advent of Internet and became what Mead (1902:22) refers to as neologisms that "epidemically' enter into a language and remains.

3.5 Meaning Ambiguities

Acronyms and abbreviations usage presents major source of ambiguity in both Microsoft and Google versions. According to Zahariev (2004:28), acronyms represent significant barriers for humans to understanding specialized text. This is because of two main reasons:

(i) Acronyms and abbreviations are highly polysemous. Zahariev cites an example of'CIA', an acronym which was found to have sixty four senses by Acronym Finder. The same effect is presented in Kiswahili acronyms used on the Internet. Consider the following example:

KM   (Kompyuta ya Mezani)   'Personal Computer'

KM in the above example represents Kompyuta ya Mezani an equivalent of Personal Computer. A problem arises because the acronym has a much less popular sense because many Kiswahili and English language users know the acronym to represent *Kilomita* (Kilometer). This problem can result to significant difficulties for Internet users trying to identify its use.

(ii) Most of the acronyms are short and according to research findings by Zahariev (2004:27) short acronyms present difficulties in understanding them due incidences of accidental matching and most of them have lower pronunciability.

Excessive reliance on loan translations pose a problem of ambiguities in meaning especially to a user whose understanding of English is limited. Yet, localizers had earlier been warned in the style guide that it is important for them not to assume that users in the target group have any technical understanding of English. In fact the truth is the contrary; most of the people who use computers with Language Interface pack are novice computer users who depend heavily on localized terminology in their software to understand how to use that software (www.kilinux). According to Vigouroux et al (2009:207) the Google localization program can be seen as having

more of a symbolic function and pre-supposes knowledge of English to access the more substantive information one is searching for.

Another difficulty is presented in compounds or what Melby (1995:61) calls multi-item terms in which both components of the LTU might already be in the lexicon with individual senses. Consider the following Kiswahili compound neologism:

> *kituo mwisho*   'break point'

Kituo mwisho is a compound made of two words each with its individual sense. *Kituo* could mean stop, full stop, or a station while *mwisho* means end. An Internet user who might rely on meaning of these individual components of the compound is likely to miss out completely on the meaning of the compound.

The other ambiguity is observed in cases where an LTU in English has no corresponding LTU in Kiswahili. Melby (1995:65) calls this situation a 'hole'. Consider the following examples:

> *Mkao wa ukurasa*   page orientation
>
> Page set up

English has given two terms for the two concepts. Page orientation is the way in which a rectangular page is oriented for normal viewing while page set up has to do with paper margins. But Kiswahili presents the two as one concept which is not correct.

Consider also the case whereby both software and program are refereed to as *programu.* The user has to heavily rely on context to decode what is being referred.

Instances where one concept has been given different equivalents by Google and Microsoft present another possible cause of ambiguity among Internet users who rely on localized version or product. There are many of such cases but we will cite just a few examples.

English Term	Google Equivalent	Microsoft Equivalent
Password	nenosiri	nywila

According to Matisse Enzer's glossary of Internet terms, a password is a code used to gain access (login) to a locked system. It is perhaps the concept of being a code that Microsoft localizers gave the Kiswahili equivalent as *nywila.* Sewangi explains that *nywila* was coined from *nywila nywila*, a secret code that was used by the Maji maji fighters of Tanganyika during the Maji maji rebellion. On the other hand, Google's equivalent of password is *nenosiri,* a compound created from neno 'word' and *siri* "secret'. Many Kiswahili Internet users are likely to make an intelligent guess on the meaning of Google's term based on the composition of the compound. However, nywila is obviously what Rey (1995:77) calls unstable neologisms that is being proposed and known to only a very small subculture. This kind of neologism will have to pass into what Mead (1902:21) calls the vocabulary of criticism before gaining currency among users.

English Term	Google Equivalent	Microsoft Equivalent
Archive	maakava	jalada

The glossary of ICT terminology explains an archive (N) as a word used to describe documents or files that are not immediately needed but which should not be completely discarded. It is also used to describe stored messages that have been contributed to discussion list. The Kiswahili equivalent of the word according to Google is *maakava* whose etymology is *makavazi,* a Kiswahili word that according to TUKI English - Swahili dictionary means educational collection and displaying area. *Jalada,* which is the Microsoft's Kiswahili equivalent for archive on the other hand means a cover of something like a book. It is therefore logical to argue that Google's equivalent of archive has better clarity than the Microsoft's. The same argument applies to the achive (V) which Google applies causative suffix *-sh-* to create *akivisha.* Microsoft's verb *jalidi* still suffer ambiguity because it implies to cover (for example a book) which is in fact far from the truth.

English Term	Google Equivalent	Microsoft Equivalent
Background	mandharinyuma	usuli

Background is defined by the *Longman Dictionary of contemporary English* as the scenery or space behind the main objects or people in a view. The Kiswahili equivalent for background by the Google localizers is a compound made of two words; a noun *mandhari* which *TUKI Swahili - Dictionary* defines as view and *nyuma* which means back. On their part, Microsoft localized the same term as *usuli* which means background in the sense of origin or cause of something. This makes the Microsoft Kiswahili equivalent misleading because background in the context of IT means the processes being undertaken by the computer behind the user's view rather than cause or origin of things as implied by *usuli.*

3.6 Summary

This chapter compared the localization perspectives between Google and Microsoft. The comparison was done by showing where the two glossaries followed correctly Kiswahili grammatical rules in particular rules of phonology and morphology. We also critically looked at instances where the rules were not followed strictly. Lastly, we asked in a way of discussion if the neologisms created were easily understandable by Internet users. In doing this, we discussed some of the issues that can hamper clarity of the neologisms.

CHAPTER FOUR

DATA ANALYSIS AND LEXICAL PRAGMATICS THEORY

4.1 Introduction

In this chapter, we will incorporate the data that was described in the earlier chapters into the processes of lexical pragmatics theory. The processes in the lexical pragmatics theory are classified by Wilson (2006:2) into two: narrowing and broadening. Lexical broadening includes the following varieties: approximation, hyperbole, metaphoric extension, category extension and neologism. Wc will be striving to establish whether the lexical pragmatics theory can be used adequately to analyze the data used in this study.

Wilson (2006:1) argues that words are often used in ways that depart (sometimes a little, sometimes a lot) from their 'literal' meaning, the ones assigned to them by grammar. This is what lexical pragmatics is about. But he goes further to say that lexical pragmatics raises wider issues such as lexical semantics, nature of concepts and acquisition of word meanings. Lexical semantics is concerned with looking at the relationship between words and mentally represented concepts they encode. Wilson argues that there is generally a gap between the sentence meaning assigned by grammar and the speaker's meaning conveyed on a particular occasion of use. This he adds is true not only at the level of whole utterances but also at the level of individual words.

In a nutshell, lexical pragmatics establishes that there is a gap between the concept encoded by a word and the concept communicated by the same word. The gap between the concept encoded and the concept communicated provides data for lexical pragmatics, and the goal of lexical pragmatics is to explain how hearers bridges the gap. Melby (1995:56) adds that meaning of words is not random; it is dynamic and always motivated. Let us now look into the lexical pragmatic processes that were highlighted earlier in this chapter.

4.2 Lexical Narrowing

Wilson (2006:1) says that in narrowing, a word is used in a more specific sense than the linguistically encoded one, with consequent narrowing of the linguistic denotation. The effect of narrowing is to highlight a particular sub-type of the linguistically specified denotation. Here are some illustrations:

(1) **dirisha**   'window'

As used in the sentence below:

Funga dirisha.   'Close window'

In the data, *dirisha* is given as the Kiswahili equivalent for an English term *window*. It follows then that in computer context, *close window* would be rendered in Kiswahili as *funga dirisha*. What we observe here is that the lexeme window has shifted from its usual use which has to do with an opening in the wall of a building, a vehicle or any other structure for letting in air and light and narrowed to a specialized reference which is one of a number of areas into which a computer screen is divided. Wilson (ibid: 4) adds that narrowing is highly flexible and context dependent process. Mmbwanga (2010:47) says that the hearer, using his encyclopaedic knowledge interprets the concepts in relation to the context thereby arriving at the right conclusion of what the intended message was.

(2) *Ingia*   'login'

Ingia generally means enter. In the Microsoft glossary, it is the Kiswahili equivalent of login.

The meaning of the word *ingia* in the above phrase has undergone change in its ordinary use. In Kiswahili, *ingia* means to enter or go into something. But in the context of IT, the meaning has been narrowed to the procedure used to get access to an operating system or application, usually in a remote computer.

(3) *Pembejeo*   'input'

Pembejeo means inputs for example fertilizers, pesticides, and herbicides used in Agriculture. However it has been used in the phrase below by Google in a narrow sense to mean input data.

pembejeo data   'input data'

(4) *jukwaa*   'forum'

The Kiswahili lexeme (jukwaa) is used in Google Outlook Express to mean forum. This term generally is used to a stage. But on the Internet, it is a discussion area on a website where members can post discussions and read and respond to posts by other forum members. When an Internet user comes across such a term, the cognitive effects are activated to deduce the meaning of the term. Cognitive effects trigger the brain to search for appropriate meanings of words and symbols Melby (1995:94).

4.3 Lexical Broadening

In lexical broadening, a word is used to apply to objects, events or actions that fall outside its linguistically-specified denotation. According to Wilson (2006-07:1) broadening, like narrowing is triggered by the search for relevance, and involves the construction of ad hoc concepts based on information made available by encyclopaedic entry of the encoded concept. It is also a flexible, context-dependent process. There are several varieties of broadening: approximation, category extension, hyperbole and metaphor.

4.3.1 Approximation

Approximation is a minimal type of broadening where a word with a relatively strict sense falls outside its linguistically-specified denotation. According to Lewis (1973:3) as quoted by Wilson (2006/7) certain situations require absolute precision while others do not as long as the information is true enough to be accepted by the hearer. Approximation involves loose uses of round numbers, geometric terms and negatively-defined terms. In our data approximation is most likely to manifest in measurement terminologies/neologisms.

(5) *megabaiti*   'megabyte'

   Kifaa hiki kina megabaiti mbili.

   "This device has a capacity of two megabytes'.

We know that one megabyte as a measurement capacity of a device is equivalent to one million bytes. But in the context of the above sentence, the capacity of the said device will obviously not be exactly two million bytes; rather it is something slightly above two million bytes.

Another example of approximation in measurement neologisms concerns measures for calculating speed of data transmission. Look at the following example:

   (6) 10 kb/s   ' 1 0kilobytes per second'

A computer downloading a document at such speed can only be on basis of approximation since we can never have constant downloading speeds. The speed here will be slightly above or below 10 kbps.

4.4.3 Metaphorical Extension

Metaphorical extension is another form of radical broadening of linguistically-specified denotation. According to Lewis (1983) as quoted by Wilson (2006-07), metaphoric extension and hyperbole uses of figurative language to encode both literal and figurative meaning. Metaphors serve as essential components of human cognition which is conceptual in nature and is a means through which the abstract and intangible areas of experience can be conceptualized in terms of the familiar and concrete. Cruise (2000:05). Cruise adds that word senses are clearly related metaphorically. He says that polysemous meanings that a word develops begin as metaphoric extensions of primary meaning of that word. For example, head in the sense of a head of a person (which is the central sense) head of a company, head of a bicycle presumably originated as metaphoric extension head in its primary sense of the upper part of the body. Melby (1995:57) talks of an author who calls an automobile a *dog* in the context that the automobile is unstable on slippery roads, essentially waging its tail like a dog.

Mmbwanga (2010:51) cites Ullman (1970) as saying that a word can be given one or more figurative senses without loosing its original meaning; old and new meaning will live side by side as long as there is no possibility of confusion between them. Let us look at some examples from the data in order to understand better.

(7) *Puku*   'mouse'

The example above is derived from the Microsoft glossary. *Puku* is a Swahili word which means a field rat or what we commonly know as a mouse. Since a metaphor is the expression of an understanding of one concept in terms of another concept where there is some similarity or correlation between the two, the physical properties of a mouse have been transferred to a computer device that is used to tell a computer what to do, including moving the cursor and choosing things on the screen. It got its name because the wire coming out of the end of the first computer mice reminded people of the tail of a real mouse. Fouconnier and Turner (2003:6) talk about something they call "source' and 'destination'. They argue that it is this concept that gives rise to new meaning. In the case of *puku* the rodent and *puku* the computer device, the earlier is the source and the later is the destination. And when the word acquires technical sense, thus becoming LTU, one becomes the term and the other, word. Melby (1995:69).

(8) Mlango   wa   mawasiliano

The above phrasal neologism from Microsoft is the Kiswahili equivalent of *communication port.* A communication port according to the computer dictionary (www.computerhope) is a serial communications used to connect devices such as a modem. The ports are usually designated as COM1, COM2, COM3, and COM4 on IBM compatible computers running Microsoft Windows. The neologism as we can see is made up of three words: *mlango* which generally means a door,' a' linked qualifier *'wa'*and *mawasiliano* which means communication. From the neologism we can clearly see that the port is likened to a door because it performs a function similar to that of a door. In this way we can say that *mlango* has acquired two meanings. The first one is that of an ordinary door and the second, is the metaphorically extended one -a port.

(9) *sogora*   'wizard'

Sogora is a Kiswahili word that means a person who considers himself an expert in a task. In the data, the neologism is the equivalent of wizard. According to the 1CT glossary, a wizard is an automatic creation of preset templates using guidance from the user. The information is inserted into the wizard when the user answers the questions asked displayed on a range of screens. Once all the information has been entered the wizard is closed and the user is presented with the completed document containing the information in the pre-set format. It enables users make the best use of the available facilities and to use complex features of software programs which they would not otherwise be able to do. (www.teach-ict).From this explanation, we can therefore conclude that *sogora* has been used metaphorically.

4.3.4 Category Extension

Category extension is a variety of lexical broadening where the name of a salient category member is extended to apply to the whole broader category to which it belongs. It is typified by use of salient brand names like *hoover* to denote a broader category of 'vacuum cleaner' or *sellotape* to denote any 'stick tape' Wilson (2006:4). It is common nowadays, for instant, to hear someone say that he has 'Googled' the meaning of a certain word even when he used a search engine different from Google. And this demonstrates how a single highly salient and easily processable brand name can acquire an extra encoded sense.

Personal names such as Chomsky, Hitler and common nouns often lend themselves to category extension. All dictators can be regarded as belonging to a broader category in which Hitler is the salient member as in the case of (10).

(10)   Gaddafi was Africa's *Hitler*.

Wilson (2006:7) gives more examples of category extension (as used at Wimbledon 2003) where constructions like *the next x* or *the next y* are used.

(11)   Handguns are the new *flick-knives*

Here, the analogous relationship between handguns and flick-knives is brought out clearly. The flick-knives evoke the category of simple weapons carried by people for self protection in the earlier days but which currently have been replaced by handguns. Examples of category extension on the Internet Kiswahili neologisms are presented in form of lexical terminological units (LTU) whose usage is not as dynamic as the general vocabulary Melby (1995:53).

(12)   Ili kulinda nyaraka zako zisipotee endapo utapoteza kompyuia yako, zitunze kwenye yahoo yako kila mara unapoziandaa.

In order to protect your documents against loss in case you loose your computer, always save them in your *yahoo.*

(13)   Nitakuhifadhia waraka wako kwenye CD.

I will save your document in a CD.

(14)   ^lNitakum-pesa.'

I will 'm-pesa' u.

In (12) above, the writer is likely to have used *yahoo* to mean any email account: hotmail, Gmail or any other. Similarly, CD in (12) may be understood to mean any type of data storage disc which can be CD-R (compact disc recordable) which is for data in general and music files, CD-RW (compact disc re-writable) which is the same as a CD-R but you can erase the old data and put on different files multiple times or even a DVD (Digital Versatile Disc) usually used to hold on movies, but you can use it to hold other data can hold more data.(http://en.wikipedia).

The same argument apply to sentence (14) where *m-pesa,* a popular mobile money transfer service is used by many Kenyans to refer to any other mobile money transfer (Yu cash, Airtel money, Orange money and others).

4.4 Concluding Remarks.

In this chapter, we have looked at the processes of lexical pragmatics theory in an effort to establish if the theory could adequately analyze the data of the study. The lexical pragmatics processes that we looked at are narrowing and broadening. In broadening we looked various varieties namely: approximation, metaphorical extension and category extension. The data provided in the study showed evidence of these processes. However, as noted, hyperbole which is one of the varieties of broadening was not discussed. The reason is because the data is terminological in nature rather than merely lexical. As a result, usage of figurative language such as hyperbole was absent.

CHAPTER FIVE

CONCLUSION AND RECOMENDATIONS

5.1 Introduction

This chapter is divided into four sections. In the first section, we give the summary of the findings of the research. In the second section we give some remarks on the hypotheses. The third section gives the general conclusion and the last one gives recommendations for further research.

5.2 Summary of Research Findings

This study set to investigate the neologisms used on Kiswahili Internet searches. From the data presented, it was found that the lexical items and phrasal neologisms exhibit change in meaning in the context of IT. Some of the neologisms maintained their original forms while others especially the borrowings underwent necessary modifications in order to be accepted in Kiswahili. The modifications were done at both phonological and morphological levels.

At the phonological level, words were adapted to the Kiswahili norm by inserting vowels into consonant clusters and after word-final vowels. As said earlier in Chapter Two, the vowels inserted depend largely on the phonological environment Haspelmath (2009:90).

At the morphological level, Kiswahili words have prefixes and suffixes. In nouns, prefixes mark class and that is why any noun neologism must be modified to fit in one of the Kiswahili noun classes depending on the prefix it gets Mbaabu (1985). The nominal suffixes take final vowels -i, -e, -o, -u, -a, -vu -fu, or -ji with each final vowel giving the noun certain semantic significance. Kiswahili verbs, on the other hand have prefixes and suffixes too. The prefixes mark senses like person, tense and object. Although the Microsoft style guide had proposed creation of neologisms by prefixing Kiswahili verbs, for example 'Anachat' (for He/she chatting), such neologisms are not in the data. But suffixes are used in verbal derivations to subsume grammatical categories such as passive, causive, conversive, prepositional and reciprocal.

The neologisms formed are basically a mixture of what Melby (1995:6) refers to as lexical terminological units (LTU) and terminological units (TU) rather than items of general vocabulary or lexical units (LU). Lexical units are items of general vocabulary such as:

templeti   "template'

amilisha   'activate'

Terminological units are units of specialized terminology; for example:

trojani   trojan

Itifakiya Kuwasilisha Faili   File Transfer Protocol

Lexical terminological units are units that can be general terminology in some contexts and specialized terminology in other contexts for example:

Puku   'mouse'

Puku can be used as general Kiswahili vocabulary to mean mouse the rodent and at the same time it can be used as a specialized terminology to mean a device for instructing a computer what to do, including moving the cursor and choosing items on the screen.

Borrowing was found to be the dominant word forming process. Most of the terminologies were either morphologized to fit into Kiswahili word structure and sound system or the morphemes translated item by item to form loan translations.

The lexical pragmatics theory was found adequate to analyze the data. Meaning change types included lexical narrowing and lexical broadening. The data collected showed evidence of narrowing and broadening. The subtypes of broadening discussed included approximation, category extension and metaphorical extension.

5J Remarks on the Hypotheses

In Chapter One, the following was hypothesized:

1. The lexical items on Kiswahili Internet searches are neologisms;
2. The processes involved in the formation of the neologisms can be analyzed adequately within lexical pragmatics framework; and
3. The formation of neologisms is governed by logical patterns.

Concerning the first hypothesis, we speculated that the lexical items on the Kiswahili Internet searches are neologisms. This has been confirmed to a great extent. In our definition of neologism, we said that it is a newly created word or a phrase or even an existing word or phrase which has been assigned new meaning. Most of the lexical items and phrases already exist in Kiswahili lexicon but have been assigned new meaning in IT. There are cases, however, where totally new lexical items have been coined especially in the case of acronyms and abbreviations.

The second hypothesis makes claim that the lexical items created can be analyzed adequately within lexical pragmatics theory. The study confirmed that two types of meaning change- broadening and narrowing were seen to apply to the neologisms.

The third hypothesis state that the formation of neologisms is governed by logical patterns.
This hypothesis was also proved to be true. The processes involved in the formation of neologisms are not haphazard but highly organized based on the phonology and morphology of Kiswahili. Kiswahili syntax was also obeyed in the formation of phrasal neologisms. The neologisms formed are adapted to Kiswahili sound system through phonologization. The Kiswahili word morphology is also very consistent. Nouns are assigned class depending with the prefix it takes.

5.4 Conclusion

This study endeavoured to investigate the challenges of neologization on the Internet. The study used lexical pragmatics theory. The theory is adequate to handle neologisms on Kiswahili Internet searches as it has necessary tools to account for the formation of the neologisms on the Internet.

5.5 Recommendations

Syntax is an important aspect on Internet searches. It is necessary therefore for future researchers to look into it.

Future research is also needed to determine the number of Kiswahili users who surf the Internet using Kiswahili searches. This is because most of the neologisms are very new and most Kiswahili users have not grasped their meanings yet.

Since the scope of this study is limited to Google and Microsoft, it would also be important for another study to be carried out on other Internet service providers and companies which use Kiswahili to market their products electronically.

It would also be important for future researchers to investigate why there are disparities between terminological choices between different people and organisations which provide services in Kiswahili as seen in the case of Google and Microsoft.

APPENDIX 1: MICROSOFT GLOSSARY

Access (n)	Fikio (n)
Accessibility	Ufikikaji
Activate	Amilisha
Active	Amilifu
Adjust	Rekebisha
Agreement	Makubaliano
Alert (v)	Tahadharisha
Animation	Uhuishaji
Archiving	Ujalidi
Associate	Nasibisha
Association	Unasibisho
Attachment	Kiabatisho
Back up (v)	Akibisha
Bookmark (n)	Alamisho (n)
Book mark (v)	Alamisha (t)
Boot (v)	Washa (t)
Boot (n)	Washo (n)
Browse (for file)	Vinjaria (faili)
Browser	Kivinjari
Ciphers	Misimbo
Citation	Mtajo
Classify	Ainisha
Code signing	Msimbo
Combination	Muunganiko
Comparison	Ulinganisho
Compatibility	Utangamano
Compression	Mfinyanzo
Confirm	Thibitisha
Confirmation	Uthibitisho
Connect	Unganisha
Connection	Unganisho
Connection failure	Unganisho shinde
Control (n)	Kidhibiti
Convergence	Kutano
Conversion	Geuzo
converter	Kigeuzi
Counter	Kihesabio
Cracker	Mharibu
Cross-posting	Usambazaji
Cross reference	urejeleano
Customize	Kaidisha
Deactivate	Amilishua
Debugger	Kieua
Debugging	Ueuaji
Declaration (in programming) azimio	Azimio
Descending	Teremua

English	Swahili
Designing	Ubunifu
detail	Utondoti
Detection	Ugunduzi
Disability	Ulemavu
Disable	Lemaza
Disclaimer	Kanusho
Disconnect	Tenganisha
Display (n)	Zinzo (n)
Drive	Kiendeshi
Edit (the button)	Kihiriri (kitufe)
edition	Toleo
Editor	Mhariri
embedded	Futike
Encoding	Usimbaji
End user	Mtumiaji
Exception	Kighairi
Exception (programming)	Kighairi
Exceptions	Vighairi
Express	Chanuza
Extend	Panukia
Divergence	Achano
Feed (n)	Mlisho
Feeds	Milisho
Frame work	Kiunzi
Gradient (math)	Mwinamo
Hacker	Mdukizi
Hidden	Fiche
Highlighter	King'azo
Initiator	Kianzishi
Input (n)	Ingizo (n)
Insertion	Uchomekaji
Installation	Usakinishaji
Interrupt (n)	Katizo
Overwrite (v)	Andikiza (t)
Owner	Mmiliki
Ownership	Umiliki
Package	Kivunge
Paginate	Kurasisha
Pagination	Ukurasishaji
Quotation mark	Vidondozi
Recycle bin	Kisuduru
Redirection	Uelekezaji
Registration	Usajiri
Registry	Masjala
Responder	Mjibu
Restrictions	Vizuio
Return in	Kirudishi
Screen saver	Kilezi
Selector	Kiteuzi

English	Kiswahili
Shading	Urangishaji
Sharing	Uchangiaji
Spacing	Kunafasisha
Supplier	Mgavi
Suspend	Subirisha
Transfer (n)	Uhawilishaji
Un install	Sakinusha
English	Kiswahili
actions menu	menyu - vitendo
add - on help	msaada nyongeza
administrator setup	usanidi we mtawala
alternative key	kibonye mbadala
applications	programu - tumizi
bandwidth	upana-bendi
blank space	nafasi tupu
blind carbon copy	nakala fiche
bold button	kitufe koza
break point	kituomwisho
character set	seti kibambo
clipboard	ubao pogoa
control panel	paneli dhibiti
copyright	hakimiliki
country code	msimbo nchi
data bank	kanzi data
database	hifadhi data
default search engine	injini -tafuti msingi
dial-up networking	mtadao simu
dialog	kisanduku ongezi
digital camera	kamera dijiti
discussion board	bodi ya majadiliano
disc space	nafasi ya diski
drag and drop	kokota na dondosha
dropdown menu	menyu wima
electronic mail	barua elekroniki
encrypted	msimbo fiche
error code	msimbo we hitilafu
express setup	muundo usanidi
foreground	mandharimbele
fullscreen mode	modi skrini-nzima
hard drive disc	diski kuu
hard copy	nakala chape
home page	ukurasa kaya
inbox	kisanduku pokezi
intranet	wavutindani
javascript	hatijava
keyboard	baobonye
mail box	sanduku la barua
menu bar	mwabaa-menyu
mouse pad	kata puku

Net Reset Error	Hitilafu ya Kusetu Upya Mtandao
operating system	programu endeshi
page view	mwoneko we ukurasa
personal computer	kompyuta ya mezani
public domain software	programu huria
search engine	injini -tafuti
security warning	hadhari ya usalama
spell checker	kikagua tahajia
stylesheet	lahamtindo
username	jina la mtumiaji
web page	gombo wavu
active document	andiko amilifu
active object	kiumbile amilifu
active widow	dirisha amilifu
angle brackets	mabano pembe
aperture value	thamani upenyo
array formula	fomula pahi
auto format	fomati kioto
back button	kitufe rejeshi
biderectional language	lugha kuwili
block devise	kitunza data
blank space	nafasi tupu
bold button	kitufe koza
bookmark link	kiungo alamisho
bullet points	alama tobo
certificate manager	meneja ithibati
chat group	kundi sogozi
colour space	msafa ranji
command line	mstari amri
composer	programu tunzi
control pannel	paneli dhibiti
contoller cards	kadi dhibiti
cube	mche mraba
curly quotes	nukuu wimbi
cylinder	mche duara
data area	eneo data
decimal numbers	namba desimali
dial tone	mlio dayo
dialog	kisanduku pokezi
drawing object bar	mwamba chorea
drop down list	orodha tiriri
drop down menu	menyu wima
encipharment	ufichaji data
encryption	usimbaji fiche
error console	kiweko hitilafu
four headed arrow	mshale-ncha nne
free ware	programu dezo
grouping	mgawo makundi

hard disk	diski kuu
help file	faili msaada
home burton	kitufe mwanzo
home directory	saraka kaya
homepage	ukurasa kaya
input box	kisanduku ingizo
junk mail	barua taka
local network	mtandao kaya
log file	faili kimbukumbu
loud speaker	kipaaza sauti
offset	nafasi pambizoni
out box	kisanduku toa
outer margin	pambizo nje
phishing	utapeli data
place holder	kishika nafasi
postal code	msimbo data
proxy server	seva proksi
replica	nakala halisi
serial number	namba tambilishi
side bar	mwambaa upande
space bar	mwabaa nafasi
spell checker	kikagua tahajia
unwanted software	programu zisizohitajika
web master	mtawalatovuti
zoom in	kukuza zaidi

Google Glossary

2 step verification	uthibitishaji wa hatua mbili
Active use	matumizi ya kila mara
Application specific password	- nenosiri maalum la program
Automatic	otomatiki
Best practices	desturi bora, njia bora
Billing	kudai
Bookmark	alamisho (n), alamisha (v)
Carrier	mtoa huduma (safaricom, Zein etc)
Characters	vibambo
Chat	gumzo/ piga gumzo
Compatible	kuambatana, kuchukuana
Cookies	vidakuzi
Create account	fungua akaunti
Credit card	kadi ya mkopo
Cyber cafe	mkahawa bwaka
Design	muundo
Develop	sanidi
Disable	zima
Display	onyesho
Doubleclick	product name
Explicit text and images	- picha na maandishi yasiyofaa
Export	hamisha
Feature	- kipengele/sifa
Feed	mpasho
Font size	ukubwa wa maandishi
Google Analytics	product name
Google Affiliate Network	Mtandao Shirikishi wa Google
Google Prediction API	API Tabiri ya Google
Homepage or start page	ukurasa wa nyumbani
Import	ingiza
Inbox	kikasha, kikasha pokezi
Input	hamisha
Install	weka, sanikisha
Installation	uwekaji
Interface	kusano, kiolesura
Knol	"do not translate"
Landimg page	ukurasa wa kutua
Layout	mpangilio
Lead generation form	fomu ya kusaidia kupata wateja
Mail client	program ya barua pepe
Malformed Locale String	mtungo wa eneo wenye hitilafu
mashup	changanya
Merchant Centre	kituo cha wauzaji
Mood board	ubao wa hisia
Multiple sign in	kuingia katika akuanti nyingi
Octet value	thamani ya okteti
Offline	nje ya mtandao

On the go	- po pote ulipo
Orkut	- name of Google product (Do not translate).
Page creator	- kiunda ukurasa
Personalize	- weka mapendeleo, geuza/badilisha kukufaa
Platform	- msingi wa programu
Promoted video	- video iliyokwezwa
Promotion	- tangazo lako
Realtime	- papo kwa hapo
Recovery email address	- anwani okozi ya barua pepe
Recovery	- uokoaji, rejesha
feset	- weka upya
iafeSearch	- "usitafsiri"
Screen reader	- kisoma onyesho
Setup guide	- magizo ya kuweka
Share	- shiriki
sign out of	- utaondolewa
site	-tovuti
Site administrator	- msimamizi wa tovuti
Spam	- barua taka
Spreadsheet	- lohojedwali
Suite	- seti
Support	- kuchukuana, himili, tumika
Surf, browse	- vinjari
Syncronize	- sawazisha
Tags	- lebo
Taskqueque	- orodha ya majukumu
Testing buddy	- mwenza wa kimajaribio

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