

## Process of Terminography of Information and Communication Technology (ICT) for Students in the Urdu Language

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### Abstract

The purpose of this study is to investigate the word-coining process for the Urdu language particularly within the genre of Information and Communication technologies (ICT) in Pakistan for proposing the secondary terms. Overreliance on borrowing and coin formation used extensively for term formation in Urdu is not only cognitively challenging but has also painstakingly generated Urdu terms with widely accepted pronunciation which also triggers schemata to the ICT terms. Coinages and loan translations from the root languages are in abundance in case of the Urdu language. Cabre's (2000) Communicative Terminology Theory (CTT) has been used as a theoretical framework to coin new Urdu terminologies. In Pakistan, the need to coin new terms is emerging most strongly after the verdict of Supreme Court of Pakistan in 2014 to promulgate the use of Urdu (Target Language) as an official language at the national forum. Keeping in view the situation, methods from the historical study of term coining have been opted to explain the coining process. This study concludes that the redundant coining and loans from English tarnishes the purity of the Urdu language. This is not only limited to ICT terminology but can be further extended in all domains with a lexical debt owed to the English language in its day to day linguistic parlance. Borrowing, loan translation, hybrid formation, and proper translation are some popular means employed as methods of term translation.

*Keywords:* coining, Muqtadira, national language, target language (TL)

### 1. Background of the Study

Etymologically the vocabulary of any language is compiled from two assemblages: lexical items from the native language and the loanwords which are foreign elements. Haspelmath et al. (2009) have succinctly worded the omnipresence of the loanwords in the languages around the globe and stated that languages 'entirely devoid of loanwords' is a rare phenomenon. At the same place, the transference of the concepts from one place to another is a substantial process as Postolea (2012) opines that 'concepts, being the basic unit of knowledge, are almost never bound to their place of birth. Packed in their original language, they easily travel across borders'. In the ICT word stock of the Urdu language, an overriding ascendancy of borrowings from English is witnessed in Urdu, a language struggling hard to preserve its purity against the linguistic pressures inherent to globalization and technological developments.

Sager (1990) has segregated the definitions for the primary as well as secondary term formation process. The first process may be named after the name of its creator or another in the native language while in secondary term formation it involves certain processes of coining or borrowing. Within the genre of ICT, almost all the imported terms originated in the English

language, thus making English the original language of creation. In the Pakistani context, term formation process is a complex one, and it involves a gamut of strategies which include coinage, borrowing, derivation, and affixation, etc.

## **2. Introduction**

The modern age has witnessed an exponential growth in all branches of knowledge, human sciences, and social sciences, and new concepts are emerging in every field of knowledge which requires the formulation of terms for communication. In the postmodern era, diversity in all kinds of knowledge has got an unprecedented upsurge. The era in which we are living is of information and knowledge which poses challenges in many fields of communication, and terminology is one such field. The challenges we encounter today include an exponential growth in the number of specialized documents in which terms and new concepts are introduced. Wüster in his 1976 work (cited in Campo, 2012) considers terminology as being located at the intersection of linguistics, logic, ontology, information science, computer science, and individual disciplines.

The West, however, is continuously expanding its terminology bank with the expansion of branches in sciences and technology. The West as such has devised the ways to meet the challenges ahead and to pattern the life to seek the solutions pertaining to terminology. It is a rough estimation that approximately twenty-five new terms are daily added to the one million existing terms. The question arises as to how this large number of new terms will be conveyed in books and dictionaries in approximately two hundred and fifty disciplines in the mammoth domains of knowledge. However, the fact remains that the West is also meeting the task with not much ease as they have to borrow words from Persian, Sanskrit, Chinese, Japanese, etc. Hardly any language can claim to be self-sufficient in reference to terminology. Durrani (1993) elaborates the following facts to support the stance that English is not the only language to use. It is an estimation that each year 2 million publications appear and 50 to 60 thousand periodicals are brought out all over the world (cited in IOUTN, 1985). Out of it, 51% are published in English, and it is impossible to get translation of other 49% in English. The International Translation Centre in Delft has been able to translate only 4% of the remaining material into English. So, English is providing us with only 55% of the existing knowledge.

Language is categorised as integrative as well as divisive. The decision-makers use it either way (Rahman, 2005). The Urdu language has been lucky in one respect: it began to attract the attention of terminologists while in its infancy. The various arts and sciences do have rich Urdu terminologies which are because of its borrowing capacity as well as its comprehensiveness. Durrani (1993) elucidates that a large number of Persian-Arabic terminologies have been absorbed in the Urdu language.

The study has discussed in detail the term formation methods employed by the researcher to propose new terminologies in ICT. Methodology prescribed and practiced by Muqtadira Qaumi Zabaan (1986) has been employed to meet the scientific needs of the time.

Muqtadira translated Windows in the Urdu language in 2010 with the joint collaboration of Microsoft (<http://cle.org.pk/>). The root languages particularly Persian, Arabic, and Turkish have been consulted to coin new terms. Various academies, societies, departments, and commission around the globe such as Academy of Persian Language and Literature (APLL), Hellenic Society for Terminology (ELETO), National Language Promotion Department (NLPD), and Commission of Scientific & Technical Terminology (CSTT) have been established which are working to preserve their national languages.

The study mainly investigates the following areas from the perspective of the Urdu language.

1. Is there any rule in the history for translating terms from foreign language into Urdu?
2. If yes, then can it be applied on the ICT terms to coin Urdu equivalents?

### **3. Research Methodology**

This is a descriptive study in Urdu terminology. It analyzed the terms that were created using existing rules in the Urdu language. This study focused on the strategies employed by the subject experts in the domains of Information and Computer Technology and Diplomacy to propose new equivalents from the existing sources of the Urdu language as well as from the roots of the Urdu language. The methodology adopted for the current study is the one prescribed by Urdu Linguist Moulvi Abdul Haque and Muqtadra Quomi Zuban in 1986 in order to coin and finalize the terminologies.

The study followed a list of English ICT terms, along with their equivalents in the target language (TL) and their phonetic representations. Glosses are elaborated in the form of a table to get the comprehension of the terminology. The justification from the history has also been given to justify the proposed terminology. While scrutinizing the list, the ICT experts were also enquired to seek their viewpoint about the proposed terminologies. This paper cites initially fourteen frequently used ICT terms against which the Urdu terms have been proposed. The terms comprised of the name of branch, names of applications, and significant terms of the subject. The proposed terminologies have either been borrowed from the root languages or coined based on the existing sources of the Urdu language.

### **4. Theoretical Framework of the Study**

Various theories relevant to terminography have been proposed by the terminologists from time to time. Theorists, while describing alternatives, favour that generalization would be applied to all other language situations (Hadebe, 2002). To support the aforesaid view, theories including L'Homme's (2003), the Communicative Theory of Terminology (Cabr  Castellv , 2003), Sociocognitive Terminology (Temmerman, 2003), and Cognitive-based Theory of Terminology (Kageura & Umino, 1996) are often cited. The above-mentioned theories arose in the wake of Wuster General Theory of Terminology (GTT), which is prescriptive in nature and has an inclination towards communicative, social, and cognitive aspects of terminology.

These theories are descriptive as they take into account different terminological activities carried out under different conditions. This paper also encompasses, in general, the linguistic principles of term formation, exploring the methods to coin new terms in the Urdu language. So, the Communicative Theory of Terminology (CTT) by Theresa Maria Cabre was followed as a framework to provide guidelines for the term formation in the Urdu language. The principles contained in the theory enabled the researcher to formulate the term formation strategies for the Urdu language in the field of ICT.

Using a language activates its linguistic resources as the study in hand. Cabré (2003), who suggested Communicative Theory of Terminology (CTT), which is descriptive in nature, opines that theory can never be prescriptive because a theory is the combination of a unit where axioms are integrated coherently. Cabré, Condamines, and Ibekwe-San Juan (2005) is of the view that “this theory is characterized by a strong orientation towards practical problem solving and establishing methods with scientific justification in order to make problem solving more efficient.” To this extent, CTT has paved the way to a research on multiple aspects of terminology as conceptual and terminological relations, term creation and the application of varied linguistic models to the study of terminology. So, it can be derived that CTT is developed from a more holistic and integrative point of view. Its main focus lies in the transfer of knowledge which is the communicative aspect of terminology. Moreover, CTT mainly focuses on the transfer of knowledge, which is the communicative side of terminology. All the professions dealing with special knowledge require terminology which ultimately leads to documentation, language planning, and language engineering. The next section elaborates the Muqtadira’s rules for terminology coining in the Urdu language.

## **5. Muqtadira’s Rule of Terminology Establishing and Coining**

The main reason of the establishment of Muqtadira Qaumi Zuban in 1979 was to promulgate the use of Urdu as the official language in academics and to propose language policies to the Government of Pakistan. Terminology did not fall directly within its ambit, but as the educational material encompasses certain terms, so they have to work upon it as well.

Different trends remained prevalent at different time and span to coin the terminologies, and a series of seminars were organized by the Muqtadra Qaumi Zuban to lay a foundation for devising rules for terminology.

Jalibi (1991) devised some rules of terminology coining. He laid a foundation of English–Urdu dictionary and the maximum part of it comprises of terminographic rules. Clauses of terminology for coining adaptable terms as discussed by Jalibi are as follows:

- 1) International terminologies should be transliterated like Magnesium (Mg), nicotine and malaria, etc.
- 2) Chemical formulas and symbols will remain in English.

- 3) Technical names of botany and zoology should be placed with Urdu equivalents or it should have terminology otherwise it should be transliterated in Urdu. Like سابل تازشہ (Sabalpalmete).
- 4) If a word is not available in Urdu language but can be adjusted according to Urdu language, then it should be taken in Urdu like: Cabala کبا لا , Cabalian کبا لیت , cabalistic کبا لیت etc.

After compiling a list of ICT terms which needs equivalents, the equivalents were proposed from the Urdu sources with the consent of ICT experts.

## 6. Discussion about Proposed Terminologies

The lack of terminology can be compensated if all the existing sources are mined in the best possible manner. Few terms have been selected randomly from the field of ICT to coin Urdu equivalents. Terminologies of ICT are shown in the Tables below.

Table 1

### *Terminology for Analogue Computer*

English Term	Analogue Computer
<b>POS Tagging</b>	Noun
<b>Description/Definition</b>	A machine or electronic circuit designed to work on numerical data represented by some physical quantity (e.g. rotation or displacement) or electrical quantity (e.g. voltage or charge) which varies continuously, in contrast to <u>digital</u> signals which are either 0 or 1.
<b>Proposed Equivalent Urdu Term</b>	تماثلی کمپیوٹر Etymology aspect of Proposed Term English+Arabic
<b>Phonetics</b>	ṭamṣalī kāmput̪ Gloss Tamasli computer
<b>Formation Rules</b>	As described by Delhi College Terminology Principles, the famous words need to be picked as it is in the Urdu language. So, computer has been transliterated while تماشلی is borrowed from the Arabic language.

The coined term is the combination of two terms which are also from two languages. As computer is the most common word amongst the Urdu speaking community, it has been transliterated while analogue has been given an equivalent from the Arabic language.

Table 2 elaborates the Urdu elaboration of *Application* as it is the most frequently used term in ICT.

Table 2

*Terminology for Application*

English Term	Application		
<b>POS Tagging</b>	Noun		
<b>Description/Definition</b>	the special use or purpose to which something is put: a technology having numerous applications never thought of by its inventors.		
<b>Proposed Equivalent Urdu Term</b>	برنامہ	Etymology aspect of Proposed Term	Persian
<b>Phonetics</b>	barnamə	Gloss	Barnama
<b>Formation Rules</b>	This word has been borrowed from the Persian language. The inclination towards Persian is more dominant in every phase of Urdu terminology coining.		

The proposed terminology is borrowed from the Persian language but is quite familiar for the Urdu speakers as all its parts are the ingredients of the Urdu language as well.

Table 3 depicts the term *Automation* with its gloss and defined prospects.

Table 3

*Terminology for Automation*

English Term	Automation		
<b>POS Tagging</b>	Noun		
<b>Description/Definition</b>	the technique, method, or system of operating or controlling a process by highly <u>automatic</u> means, as by electronic devices, reducing human intervention to a minimum.		
<b>Proposed Equivalent Urdu Term</b>	خودکارسازی	Etymology of the proposed term	Urdu
<b>Phonetics</b>	khodka:rsa:ʒɪ	Gloss	Khudkarsazi
<b>Formation Rules</b>	Here the equivalent is sort from the common use Urdu. Haq as discussed by durrani (1993) that the priority should be given to those terms which are easy to pick from the Urdu language.		

The rules defined by Haque have been applied to propose the term from the Urdu language. The existing sources of the Urdu language helped to propose this term. For *auto* the word has been chosen from the existing sources and has been used in ICT as well to fulfill the need of communication.

Table 4 explains the formation rules as well as the POS tagging of *Autodetect*.

Table 4

*Terminology of Autodetect*

English Term	Autodetect
<b>POS Tagging</b>	Noun
<b>Description/Definition</b>	self-diagnosing functionality of a software device/ application.
<b>Proposed Equivalent Urdu Term</b>	خودکار تشخیص Etymology Gloss Urdu Khudkartakhshees
<b>Phonetics</b>	khodka:rtakhfi:s
<b>Formation Rules</b>	Sorted from the existing vocabulary of the Urdu language.

The term is split into two parts. The translation once proposed for auto has been used here to propose the term. The existing vocabulary has been used and is in alignment with the definition.

Table 5 proposes the secondary term formation of *Autodetection* which is a noun. Here the literal meanings of the term have been translated.

Table 5

*Proposed Terminology for Autodetection*

English Term	Autodetection
<b>POS Tagging</b>	Noun
<b>Description/Definition</b>	The property of self-diagnosing functionality of software device application
<b>Proposed Equivalent Urdu Term</b>	خودکار تشخیص سازی Etymology of the Proposed Term Gloss Urdu Khudkartakhsheessazi
<b>Phonetics</b>	khodka:rajka:rsazi:
<b>Formation Rules</b>	As per the principles of Delhi College, it has been coined from the Urdu sources which fits well with English terminology.

The proposed terminology justifies the definition and also it is a suitable equivalent as here the extension of one term is forwarded.

Table 6 provides the proposed term for *Secondary Storage* in Urdu.



Table 6

*Proposed Terminology for Auxiliary Storage*

English Term	Auxiliary Storage		
<b>POS Tagging</b>	Noun		
<b>Description/Definition</b>	Secondary storage.		
<b>Proposed Equivalent Urdu Term</b>	اضافیتخزین	Etymology of the Proposed term	Persian
<b>Phonetics</b>	iza:fitakhzi:n	Gloss	Izaaafitakhzin
<b>Formation Rules</b>	In terminology coinage here, both the words are chosen from the Urdu language's existing sources which explain the definition well.		

The terminology is picked from the root language Persian and satisfies the definition and is equally acceptable for the computer scientists.

Table 7 elaborates the term for *Buffer* with all the possible dimensions needed to a terminologist in the Urdu language.

Table 7

*Terminology Proposed for Buffer*

English Term	Buffer		
<b>POS Tagging</b>	Noun		
<b>Description/Definition</b>	A device or an area of a computer that temporarily stores data that is being transferred between two machines such as a computer and a printer.		
<b>Proposed Equivalent Urdu Term</b>	تامفون	Etymology aspect of the Proposed Term	Turkish
<b>Phonetics</b>	ta:mfon	Gloss	Tampfoon
<b>Formation Rules</b>	The word is borrowed from the Turkish language. In Turkish, it is written as <i>tampon</i> . As per term formation rules the p of Turkish is replaced by F sound in Urdu.		

Buffer is commonly used term in ICT so it has been borrowed from the Turkish language.

Table 8 highlights the terminological aspects of *Cache*. The formation rules for cache are the combinations of the two methods although both the terms are the part of Urdu language.



Table 8

*Terminology Proposed for Cache*

English Term	Cache
<b>POS Tagging</b>	Noun
<b>Description/Definition</b>	a temporary storage space or memory that allows fast access to data: <i>Web browser cache</i>
<b>Proposed Equivalent Urdu Term</b>	نہانگاہ Etymology aspect of the Proposed Term Urdu
<b>Phonetics</b>	neha:ngah Gloss Nehanga
<b>Formation Rules</b>	Here the principle of Revision has been used as suggested by Haque(19). He is of the view that new terminologies can be coined by the use of existing terminologies so from میان گاہ it has been coined as نہانگاہ.

Table 9 offers the terminology for *Chip*, one of the most frequently used term in ICT as well as electronics.

Table 9

*Terminology Proposed for Chip*

English Term	Chip
<b>POS Tagging</b>	Noun
<b>Description/Definition</b>	a circuit of transistors, resistors, and capacitors constructed on a single semiconductor wafer or chip, in which the components are interconnected to perform a given function.
<b>Proposed Equivalent Urdu Term</b>	تراشه Etymology of the Proposed term Urdu
<b>Phonetics</b>	ta:rafə Gloss Tarasha
<b>Formation Rules</b>	Delhi College Principle has been applied here. The equivalent has been given from the daily use words.

Table 9 proposes terminology for the branch of Computer Science, which is a combination of an Urdu and Persian equivalent.

Table 10

*Terminology Proposed for Cryptography*

English Term	Cryptography
<b>POS Tagging</b>	Noun
<b>Description/Definition</b>	the science or study of the techniques of secret writing, especially code and cipher systems, methods, and the like.
<b>Proposed Equivalent Urdu Term</b>	رمزنویسی Etymology of the Proposed term Persian+Urdu
<b>Phonetics</b>	ra:mznavi:si Gloss Ramznavisi
<b>Formation Rules</b>	Dr. Abdul Rehman has predefined specific terms for few often used words in English like <i>Grapah</i> and <i>phone</i> . The term رمز is borrowed from the Persian language.

Table 10 proposes the term for the word most frequently used in ICT as well as in many other domains of knowledge.

## 7. Conclusion

This study is a significant contribution towards enriching the Urdu language. Perhaps, the first thing to consider is language engineering not language planning. Due to the foreign origin of the approximately all scientific concepts, the academicians are left only with two choices: either using the foreign terms or selecting new equivalents in the Urdu language to make it comprehensible to the users. There is no doubt that using the foreign terms is far easier and convenient, but consequently the Urdu language will be full of foreign terms only and nothing will remain out of it. Moreover, these foreign terms cannot be used by the Urdu speakers to make new combinations and constructions. Keeping in view the facts, we can say that there is a dire need to carry research on the scientific terms in order to enrich the treasury of the Urdu language with native and local equivalents to express new concepts.

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