

*In The Name of God*

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واژگان قرضی در ترجمه متون تخصصی دانشگاهی

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کلیه حقوق مادی مترتب بر نتایج مطالعات، ابتکارات  
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متعلق به دانشگاه اصفهان است.



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## Abstract

One of the specific features of English for Science and Technology (EST) is the high concentration of terms. As Huizhong (1986) puts it, before a learner can have practical reading competence, he/she must have acquired a certain number of technical and scientific terms, especially at the advanced levels. It is noteworthy that technology and science transfer, as an integral part of today's world, paves the way for the influx of technical and scientific terms from the language of their developers into that of importing countries. One of them is Iran. Such a phenomenon has led to the necessity of enriching the Persian language and making it as a scientific language.

This study investigates the application rate of the Academy of Persian Language and Literature (APLL) coined terms, or neologisms, compared to that of borrowed ones in the translation of technical texts by PhD students of different fields of study. It also seeks to see if there is any relationship between the familiarity with APLL coined terms and their application rate in translating technical texts. To do so, the following null hypotheses have been formulated:

- 1- There is no significant difference between the frequency of the use of borrowed words and that of neologisms in translating technical texts by PhD students.
- 2- There is no significant relationship between familiarity with the neologisms coined by APLL and their application rate in translating technical texts by PhD students.

To conduct such a research, 55 PhD students were randomly selected from nine fields of study related to humanities, medical, technical and engineering, and basic sciences. Accordingly, nine technical texts, each including twenty technical terms followed by their Persian translation as well as twenty multiple-choice items were randomly selected from the sources and materials known to the participants and were administered to PhD students of each field involved in this study. In addition, a familiarity questionnaire was developed on the basis of the very twenty technical terms involved in the mentioned technical texts. In order to minimize the practice effect, the questionnaire was administered to the participants with a two-week interval from the first administration. Concerning these objectives, Wilcoxon Signed Rank Test and Spearman's Correlation Coefficient were conducted. The results indicated that the application rate of borrowed words exceeded that of APLL coined ones. In other words, there was a significant difference between their applications ( $Z = -5.140$ ,  $\text{Sig} = .000$ ). Therefore, the first hypothesis was rejected. Furthermore, Spearman's Correlation Coefficient revealed a positive correlation between the familiarity with APLL coined words and their application rate in the translation of technical texts ( $r = .593$ ,  $p < .05$ ). Thus, the second hypothesis was rejected. As the familiarity with APLL coined words increased, their application rate went up, too. It is suggested that by considering the informative aspects of the terms or increasing familiarity with APLL coined words, the application rate of APLL words, could increase.



**Keywords:** APLL (Academy of Persian Language and Literature), technical terms, borrowing, neologism, EST (English for Science and Technology).

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## **List of Abbreviations**

APLL: Academy of Persian Language and Literature

EST: English for Science and Technology

# **Chapter One**

## **Introduction**

### **1.1. Overview**

Technology transfer is an integral part of today's world. Less developed or developing countries are mostly importers of technologies developed by advanced ones. Therefore, the rapidly growing science and technology in different advanced countries of the world are disseminated through the language of their developers. As a result of this communication, the scientifically and technologically less developed nations are confronted with the serious linguistic problems of expressing a number of new concepts for which no words exist in their language (Musavi, 1998).

One major concern of such countries regarding novel science and technology is the amount of technology to be produced by them as well as the amount to be imported into their society. To develop a new technology is not only a matter of expertise but also a matter of time. Also, it is worth noting that time will not wait for developing countries to fill the existing knowledge gap between themselves and the advanced ones (Coulmas, 1989). One possible way may be to import new advances into their country. As a result, such a phenomenon assigns a heavy burden upon the language planners to provide the consumers with scientific materials in their native language. This

pressing and dire need has resulted in the advent and development of English for Science and Technology (EST) in the area of English language teaching (Khajavifar, 1995). In order to facilitate information transfer, scientific and technical terms must be a part of the teaching of EST, especially at the advanced level.

As mentioned earlier, each year a great number of scientific and technical terms come into existence thanks to rapid advances in such areas. Communicated through the language of their developers, such terms may be unfamiliar to the importing nations (Musavi, 1998). Therefore, actions must be taken to fulfill this communicative need of such nations.

In order for a language to fulfill different communicative needs, like scientific and technical information transfer, of its users, it should be well and carefully planned. Haugen (1959) was the first who introduced the term 'language planning' and defined it as "the activity of preparing a normative orthography, grammar, and dictionary for the guidance of writers and speakers in a non-homogeneous speech community" (Cooper, 1989: 29). In addition, Fishman (1974 cited in Gandelii, 1999) referred to such a phenomenon as the organized pursuit of solution to language problems typically at the national level. According to him, language problems addressed in the process of language planning include such phenomena as the lack of common language in a politically defined unit, the absence of a writing system as well as the lack of technical vocabulary, the focus of the present research. Haugen (1987) proposed a four-stage model for language planning including: 1) selecting a norm through modifying or creating a variety, 2) codifying the norm, 3) elaborating its function, and 4) ensuring its acceptance in the community.

It is worth noting that no language is rich from its very birth. In other words, the relative inadequacy of language is not a phenomenon confined to developing countries whose languages suffer from the lack of technical and scientific terms.

Ferguson (as cited in Robin, 1977) stated that language planning, in the less developed nations and languages, is responsible for the creation of counterparts

or translation equivalents to terminologies already existing in the languages of technologically more developed nations. He furthers that languages of the technologically more developed nations also need language planning to create terminology for new objects and concepts yielded by current researches. Influenced by linguistic, nonlinguistic, and cultural reasons and as a result of the emergence of new sciences, languages grow richer and richer (Farshidvard, 1380).

A careful look at languages such as German, English, and Japanese, now fully adapted to the needs of technological and scientific communication, reveals that they have overcome their deficiency through such a process. Leibniz( 1697 cited in Coulmas, 1989), being aware of the insufficiencies of the German language of his time, offered specific remedies that can be applied to other languages suffering from such inadequacies. According to him, the first step toward such a remedy is the enrichment of the language. To do so, the vocabulary of that language has to grow as voluminous and diverse as possible. He offered four steps toward such an end: 1- search for good words already existing in that language but not coming to the mind due to the rare use of them, 2- the recovery of old and forgotten words enjoying special quality, 3- nativization or naturalization of foreign names while deserving of it, and 4- careful coinage of new words in the case of the failure of mentioned steps.

Therefore, borrowing and coinage- referred to as neologisms or innovations throughout the present study- may be considered as two possible solutions when a native language is weak in scientific lexicon as well as when new technologies and sciences are introduced into a society as a result of rapid development in such areas or cultural contacts.

Culture contact leading to culture change manifests itself as two types of linguistic change; that is, borrowing and interference (Feloy, 1997). Since cultural contact among different speech communities is an inevitable phenomenon, borrowing, especially lexical borrowing, as an indication of the manner and degree of such a contact will be unavoidable in much the same way.