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TRANSLATING SCIENTIFIC & TECHNICAL ABBREVIATIONS INTO ARABIC

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Abstract

Current developments in different fields of knowledge, technology, sciences, education, and human services in particular those that demand using language whether in speech or in writing making use of abbreviations. Acronyms, initialisms or simply abbreviations may seem insignificant in the field of lexicography, yet they are a problem for translators, and could easily lead to a smooth translation or interpretation. This article analyzes the formulation of English acronyms and their reformulation into Arabic; it highlights the challenges they pose to the translator and how those challenges can be surmounted. Since English is believed to be the language of globalization, a simple way out for the translator or the interpreter is to render the abbreviation as 'borrowed' words, followed by an explanation if necessary. Above all, the translator who interprets abbreviations needs broad and deep knowledge in the culture of both languages English and Arabic.

1. Introduction

Translation is a complex process where delicate balance is achieved between the equivalence of the text translated and the linguistic means chosen. Abbreviations can cause many difficulties during the translation. First of all despite the history of translation originates since ancient times when people needed to communicate with people from different communities, abbreviation is a comparatively new linguistic phenomenon and thus its translating is not well studied yet. This phenomenon perfectly reflects the spirit of our times, when there is a need to transmit much information during the shortest period of time. Abbreviations are formed by certain patterns and knowing these patterns can greatly simplify the process of translation. Abbreviations mostly occur in scientific and journalistic styles, where ambiguity and uncertainty are not accepted. They have mostly used in the names of organizations, associations, committees, etc.

Translation of abbreviation consists of the process of reformulation of abbreviation from English into Arabic. The process of reformulation consists of three steps that help to deal with abbreviation on any level of any difficulty. First, it is necessary to interpret each word that constitutes abbreviation. The order of words is changed after translation according to Arabic language system. The next step is to make new abbreviation from the new name. New initials are completely different and abbreviations are not related in different languages. One must keep in mind that

not all the words are abbreviated in all languages. There are combinations of words that make the abbreviation in one language but are translated in separate words in the target language.

In addition, there are special vocabularies of abbreviations, which contain the most widely used abbreviations and their translations. Such vocabularies can greatly simplify the process of translation. In translation of abbreviations, it is very important to know the culture and history of the country of the source language. In translation of abbreviation this knowledge is more important than being familiar with the culture of the country of target language. For the professional translation of scientific & technical abbreviations translator should be aware of all changes in the fields of knowledge of the source language. To translate this sort of abbreviations in this way, it will be much easier and context is very important in this case.

The principle of economy of effort compels speakers to economize instead of using the whole words thus; new forms are created, first in the form of a series of letters, such as D.S.T. (Dead Sea Transform) تحول البحر الميت.

However, advancement in science and technology has led to creation of a host scientific terms that designate various fields of life felt rather than using them in full. The use of full forms causes one to spend time and effort both in speech and writing. One of the ways explored for this purpose in taking the initial letters of sets of words to create what they have come to call 'abbreviations'.

The present study attempts to consider how scientific and technical abbreviations and acronyms are translated into Arabic. The ways of dealing with this type of abbreviations are handled and suggestions that face the translator are also made.

2. Review of Related Literature

Early attempts of the option that Arabic language had dealt with the phenomena of acronyms and abbreviations has been carried out by Al-Shawi (1998). She has concluded the following practical results:

1. the majority of English acronyms are technical nouns and nouns that represent names of organizations and establishments.
2. English acronyms are more numerous than those of Arabic.
3. the adoption of the initialisms are more common than the adoption of single word acronyms.
4. the number of English acronyms and abbreviations are expanding and moving easily and quickly in to general English.

Bankole (2006) has suggested that translator should render abbreviations as borrowed words followed by an explanation if necessary. He lists of abbreviation on general organizations in English and their reformulations in to French. Zakharenko (2005), stresses on the special vocabularies of abbreviations that contain popular used abbreviations and their translations. These vocabularies simplify the process of translation. He adds that, for abbreviation translation, a professional translator should be aware of all changes in the cultural, political, economical and social life of the country of the source language. The practicality and usefulness of English-Arabic dictionaries in translation English abbreviations and acronyms are of great help to the translators. With the emergence

of modern information and technology there is a need for a dictionary which deals with such category of abbreviations. Indeed, Al-Ani (2007) has offered a very neat piece of work in his dictionary of abbreviations of scientific and technical terms. Many examples have been selected from him along with others from Amhieh (1990) as the base data of the present research.

3. Types of Abbreviations

3.1 Abbreviation According to Form

As abbreviations often occur with frequently used long terms for which short terms are more convenient, they aim at facilitating pronunciation and writing, typing, or printing. However, they may occur in the following ways: First, at the level of pronunciation, the Encyclopedia Britannica (1876) defines 'abbreviation' so generally that it might be any shorting "a letter or group of letters, taken from a word or words, and employed to represent them for the sake of brevity". According to this definition, scientific abbreviation can be classified into the following types; alphabetisms, which are sub classified into initialism as L.M. (Laue method لاوي طريقة) and abbreviations as mol.wt (molecular weight الوزن الجزيئي), and acronyms that are pronounced as single words as AIDS /eɪdz/ (acquired immune deficiency syndrome مرض نقص المناعة المكتسب). Therefore, there are large number of English technical dictionaries and monolingual dictionaries of abbreviations and initialisms.

To be formed in such away that the vowels separate the consonants as in DRAM /dram/ (dynamic random access memory العشوائية الحركية الذاكرة). A form like EENT can not be said as a word because it is composed of /VVC/, i.e., the vowel is not between consonants.

Second, at the level of formation, abbreviations have been written using a period to mark the part that was deleted. In the case of most acronyms, each letter has its own abbreviation, and in theory should have its own period. This usage is however becoming outdated as the use of capital letters is sufficient to indicate that the word is abbreviated. Nevertheless, some popular style guides still insist on the multiple periods style with unpronounceable abbreviations, such as EDFFG (Edge defined film-fed growth(method) طريقة نماء الفشاء واضح الحافة) but not with pronounceable ones such as MAGFET/magfets/ (Magnetic - field sensitive field-effect transistor ترانزستور تأثير المجال المغناطيسي الحساس).

3.2 Abbreviation According to Style

Below are some abbreviation styles:

1. Reduction of a single word to its initial: C (Capacitance السعة) D (Deuterium الديوتيريوم), usually on imported used vehicles, X-ra (X-RAY ANALYSIS تحليل الأشعة السينية).
2. Reduction of a group of words to the first two or three letters of each concept: min. (minute دقيقة).

3. Reduction of concept of a group to equivalent of a syllable: Constat (communication satellite الاتصال بالقمر الصناعي), USENET (User Network مستخدم الشبكة المعلوماتية).
4. Reduction of the initial of just one word of the group: O level (Ordinary level) (المستوى الاعتيادي).
5. Transcription of the abbreviation: for MC/emel/ (Master of ceremonies سيد الاستقبال) VT /vkt/ Vacuum tube (التيوب الفراغ).
6. Reduction of a group to the initial of the first concept and the first syllable of the second: M. Tech (Master of Technology شهادة الماجستير بالثقة).
7. Preserving a conjunction: D and D (Drunk and Disorderly سكران أو غير منضبط).
8. Preserving the abbreviation in its original language: SYSTEM /system/ (synchronous Orbits Communication Satellite ستر), also CHINSYN /i/Instn/ (synthesis Oriented Chinese- English Machine Translation System جين).

Generally, initials of short function words (and, or, of, to) are not included in abbreviations, except to make such acronyms pronounceable.

Lastly, some abbreviations are assimilated into ordinary words and are found written in lower case and with time, people forget that they were acronyms. Good examples are: laser /lezer/ (light amplification by stimulated emission of light ليزر) and radar / radar/ (radio detecting and ranging رادار). See Table (1).

Table (1) some of the scientific & technical abbreviations

Types of Abbreviation	Scientific abbreviations	Technical abbreviations
	SAT Scholastic Amplitude Test مسابقات	DOT Department of Transportation, نقطة
Acronyms	LEP Limited English Proficient ليبي	NAND not and, نك
	VAT Value Added Tax, فاتك	SRAM Static Random Access Memory, سرام
	SAD Seasonal Affective Disorder علا	Ghost Global High Horizontal Observation Sending Technique, كوسن
	IDIOT Instrumentation Digital on line Transcriber, انجوت	C.A.V. (thermionics) cooled-anode transmitting valve (صمام البث المصغري المبرد) ايوني حراري
	MASER Microwave amplification by stimulated emission of radiation موزر	CRO Cathode ray oscilloscope كاشف الاهتزازات تعمل بالاشعة الكاثودية
Initials	EDX Energy dispersion x-ray analysis التحليل بثلاث طاقات الاشعة السينية	EOD Erasable optical disks الاقراص الضوئية القابلة للمسح

Types of Abbreviation	Scientific abbreviations	Technical abbreviations
	ATR Attenuated reflection الامتصاص الموهن	ETL Electronical laboratory المختبر الالكتروني
	BW Brackish water ماء حلو الى المالح	MOCVD Metal-organic chemical vapour Deposition ترسيب البخار المعدني العضوي كيميائي
	CC Continuous current التيار المستمر	TV Television تلفاز
	DRP Dense random packing الترتيب العشوائي المكثف	F-ep Field effect Phototransistor ترانزستور ضوئي بتأثير المجال
	Ne Neon عناصر النيون	Fext External force قوة خارجية
Other types of abbreviations	Ri Rational indices معدلات كسرية	Ft Fork Turing الشركة الترتيب
	Cmil Circular mil, المرمزي للمك قطره 0.01 انج	Pat. Patent براءة اختراع
	Br Benquerel rays اشعة بركلي	
	Cd Candle شمعة	
	eV Electron volt الكرون فولت	

4. Translating Scientific & Technical Abbreviations into Arabic

This form of translation could be regarded as reformulation of abbreviations of one language to another. In most cases the order of initials change due to difference in the grammatical structure of languages involved, e.g., SH (Simple hexagonal) in Arabic is HS (مستطاب بسيط). The reason for this can be explained

by the translation technique of transposition which has to do with the replacement of one grammatical unit or part of speech by another. This is inevitable since the grammatical structure differs from one language to another. This difference is particularly highlighted in the position of adjective as regards Arabic and English languages. Whereas in English, qualifying adjectives always precede their nouns, it is the opposite in Arabic frequently adjectives normally follow nouns. This explains why we have the following acronyms:

English Arabic
MP (Molecular [adjective] Polarizability [noun]) - PM (M [القطبية] [noun]) P الحزبية [adjective].

From the above examples, it can be noted that the words involved in two languages are similar, which explains why the same initial letters occur in the acronym translation. On the other hand, the grammatical rules of the two languages mandate a different order of nouns and adjectives.

However, there are three main ways to render English scientific & technical abbreviations into Arabic:

First, in full: At this juncture, it should be noted that for varied reasons some initials are rendered as full words in Arabic, i.e., rendering phrase from which the abbreviation is taken in full, e.g., Pc (Phase change) is rendered into تغير الطور. Another example is RNA (Ribonucleic Acid) is rendered into الحامض النووي الرايبوزي.

Of course, being conversant in the above-stated rules and techniques is not the only thing needed to confront problems of abbreviation, but their knowledge can be of great help to the translator. The remaining problems can then be solved by consulting the necessary translation tools which range from hard-copy dictionaries, glossaries etc.

Second, in sound: some acronyms have the same pronunciations in both English and Arabic. For instance, abbreviations like AIDS /eldz/ translated as ايدز, Radar /rad3/ (Light Amplification by Stimulated Emission Radiation as رادار) and SAM /sam/ (Surface to Air Missile سامر). However, this type of translation is called 'transliteration'.

Third, in abbreviating form, i.e., pronouncing the abbreviation as letters, e.g., A.T. (artificial intelligent) is translated as اي تي and O.S. (Operating System) is translated as او اس. In this respect, the Arabic orthographic shape of different translated English letters may sound the same that gives no indications as to how this or that letters is originally pronounced. For example, (a), (e) and (i) are all translated as اي, such being the case, recourse to diacritics may help to solve this problem:

- a اي hamza, that presents the glottal stop, is put above the first letter.
- e اي hamza is put under the first letter.
- i اي madda, that represents conjunctive, is put above the first letter.

Similarly, supplying the accusative case marker 'fatha' and the genitive case marker 'kasra' may help to differentiate between the translated form (j) and (g), viz. (جي):

- j (جي) the accusative case marker is put above the first letter.
- g (جي) the genitive case marker is put under the first letter.

Generally, rendering foreign abbreviation into Arabic is not very much difficult in comparison with the difficulties found in the rendering of other types of lexicon. The

underlining phrases or syntagms on which abbreviation are based on the whole constitute a scientific characterized by a high degree of isomorphism which owes its existence to the denotative nature of the lexemes integrated in them. This fact facilitates a literal and exact translation; moreover this is necessary in the field where the some conceptualizations are needed.

Gonzalez (1991) argues that the difficulties found in rendering abbreviations lie not so much in their content of obtaining monosemantic value for their constitutive lexemes, as in deciding in each case whether an abbreviation is rendered or not, or which form it would has? The rendering and borrowing of abbreviations are conditioned by various factors that intermingle in their effects and cause variation.

There are other types of difficulties like those which face translators in the field of chemistry; the translators were confused before names and almost all the chemical elements and they have no other way but transliterating them, i.e., putting them as they are. Therefore, words like Radium Rd, Oxygen O ...etc. entered Arabic language as they are. In medical field, translators suffer the same problem especially with names of drugs.

5. Conclusion

It is often said that some of the essential qualities of a good translator are: sound knowledge of his working languages and general knowledge. Furthermore, it is recommended that the translator should work into his mother tongue or first language. In fact this is a prerequisite for gaining employment into international organizations. This implies that the translator is deemed to be naturally more fluent in his first language which is supposed to be the language of his immediate environment for his formative years. Meanwhile, regarding translation of abbreviations to borrow the expression of Sgarbossa in her article in 2005 August edition of the *ATA Chronicle*, the "source language may turn out to be the source of trouble.

Translation is sometimes an inevitable matter in translation among living languages and it does not underestimate any longer for transliteration has become a common and an acceptable way. Therefore, translator has to make every possible effort in translating scientific & technical abbreviations by returning to firm dictionaries, linguists and consulting professionals in every field, if that does not help transliteration would be the only way.

In spite of the cultural issues to deal with problems of abbreviations, a good translator must have the latest information worldwide at his disposal, through reading of newspapers, journals, international magazines. He must also consult the necessary translation tools such as hard copy dictionaries, encyclopedia and online dictionaries as Acronym Finder (<http://www.acronymfinder.com/>), (<http://www.interscience.wiley.com/stasa/search.html>) which has been facilitated by the internet. While on the job, all these will help to get around the complex task of translating acronyms (Bankole, 2006).

Above all, the translator who interprets abbreviations needs abroad and deep knowledge in the culture of both languages English and Arabic.

Another useful tool for the translator to have at his/her disposal a glossary of abbreviations of the subject field he/she is working on. In some cases; the translator

may also have to consult his/her client or the author or the source text for more clarification of the terms.

In summary, one last exit route for the translator (especially if he is going from English into Arabic), is to simply render the acronyms as borrowed concepts, as they figure in the original text. In this era of globalization, the issue of translating acronyms is becoming less emphasized due to the constantly widening vocabulary, thanks to the modern information technology. We are being faced with a deluge of new acronyms daily and before these get officially translated from English into Arabic, the Arabic speaker is already using the English acronym and is used to it. Finally, since English seems to be the language of the global world, it is natural for the acronyms to be transferred into different languages and thus used.

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