

Some Problems of Translating Biochemical Texts from English into Arabic-A Critical Study-

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Introduction:

The world has witnessed tremendous progress in all the fields of science and technology. Consequently, new words are invented everyday to express new scientific facts, concepts and techniques (Newmark, 1982:3) The invention of such words has reached its peak during the last few decades. So, it is unquestionable that the rapid development in science and technology which is still in full swing, has attached great importance to scientific and technical translation (Newmark, 1982:3-4).

This can be clearly noted in the Arab world as new translated scientific terms are required to cope with the introduction of myriads of technical terms, especially in English.

In this paper, answers will be given to certain arguments that may arise in translating biochemical texts.

1. The Importance of Scientific Translation:

Much importance has been attached to scientific translation, as an active means of communicating scientific materials and the enhancement of scientific development in different communities all over the world, since ancient times up to the present day.

The importance of translating English scientific texts is so evident. In this regard, Al-Wasiti et al, (1983: 9-10) point out that only in 1970, for example, more than 12000 scientific researches were translated among the languages: German, French, Russian and English. The last, i.e. English was nominated as the most dominant language since most translations were done from and into it. Furthermore, the authors (ibid) state that more than 200 periodicals of Russian papers published in the same year in USSR were also translated into English.

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The main aim of scientific translation as stated by Bryne (2006) is to deliver scientific information "easily, properly and effectively." It is a "communicative service." The importance of translating scientific texts into Arabic is highlighted by Bakri (1996: 50-51) who states that translating scientific books into Arabic deepens and consolidates scientific and technical development and makes technical knowledge available to the coming generations. In other words, the outcome of scientific and technical translation has its effective role in the scientific and technological development in the Arab World.

This can be obviously felt when we realize the great gap in the scientific register between English and Arabic, as supported by Ilyas (1989: 111) who clearly states that there is a wide gap between the scientific standards and technical capabilities expressed by the English language on the one hand and Arabic on the other.

2. Style and Register:

The term style generally refers to the manner of writing or speaking as related to a given subject matter. However, many scholars regard "register" as a stylistic variety while many others differentiate between the two. Downes (1998: 242), for instance, defines register as the speech variety used by a particular group of people, usually sharing the same occupation or the same interests. He adds that a particular register often distinguishes itself from other registers by having a number of distinctive words, by using words or phrases in a particular way and sometimes by special grammatical constructions. This is true for scientific register.

The scientific language has certain features that distinguish it from other text types. The style is impersonal; the syntax is simple, the scientific language is clear. Each word is monosemantic, i.e. it has a precise signification without ambiguity. The scientific vocabulary is specialized and full of acronyms (Ilyas, 1989: 109).

3. Translation, Equivalence and Transference:

Translation is a very old human activity by which man has overcome the barrier of language. Yet, there is, in fact, no precise definition of translation, nor have theorists reached a unanimous agreement about the essence and modals of translation (Ilyas, 1989: 27).

Henceupon, two contradictory trends emerge in the study of translation. One sees translation as merely a transference of meaning. Many scholars advocate

this trend. Steiner (1975: 149), for instance, argues that no complete translation is possible because the matrix of feeling and the associative context of a particular tongue can be transferred only partly by periphrastic maneuvers which result in approximate translation and inevitably downgrade the original. Like many others, Seleskovitch (1976: 95) argues, in line with Steiner, that translators communicate the meaning of the original message.

The other trend rejects the suggestion that translation is merely a transference of meaning from the source text into the target text. Melby (1990: 207), for example, says that translation can be viewed not as a transference of meaning but as the search for functional equivalence in particular situations.

The question of equivalence is regarded a central on-going argument in translation studies. Nida (1964: 159), for instance, distinguishes between “formal” and “dynamic” equivalence. Formal equivalence focuses on the source language (SL) message in both form and content to enable the target language (TL) reader to understand as much of the SL context as possible. Dynamic equivalence, on the contrary, focuses on complete naturalness of expressions and tries to relate the TL reader to modes of behaviour relevant to the context of his own culture.

As far as the question of translating scientific texts is concerned, it is often the case that the TL may not contain a translation equivalence for a term or an expression being referred to in the SL. In such a case, the translator may deliberately adopt a term or expression in the TL as it is used in the SL. With this regard, Sa’eed & Abbas (2009: 108-109) argue that it is indispensable to find a new term or expression in the TL taken as it is from the SL via “loan translation”; transference.

4. The Importance of Transference in Scientific Translation:

Terminology, according to Bryne (2006: 3) is “perhaps, the most immediately noticeable aspect of a technical text and indeed it gives the text the “fuel” it needs to convey the information.” Sometimes, the transference of these technological terms from one language into another is a prerequisite. The words through time become part of the lexical system of the target language.

It is unquestionable that many Arabic words entered the English language. The majority of these words are technical relating to scientific topics such as mathematics, astronomy and chemistry.

The following are illustrative examples:

Alcohol	الكحول	Cipher	صفر
Elixir	الكسير	Almanac	المناخ
Algebra	الجبر		
Alembic	الانبيق (distillation apparatus)		
Meri	المرئ	Mummy	المومياء
Alchemi	الخيمياء	Physics	الفيزياء
Al-cove	القبّة	Camphor	الكافور
Jar	الجرة	Saffron	الزعفران

(Ilyas, 1989: 111, Ofek, 2011:4 and Hichem, 2012: 22).

Interestingly enough, the definite article al (أل) has been maintained in many words transferred to English.

Nowadays, the situation has been totally reversed as there has been a rapid ongoing scientific development in Europe since the beginning of the renaissance up to the present day. This acceleration which reached its peak during the last few decades has rendered Arabic into a recipient language in the different fields of science and technology. This is clearly expressed by Ofek (2011: 14) who states that “today, the spirit of science in the Muslim world is as dry as the desert”. This, as mentioned above, has resulted in a wide gap between the scientific registers of the two languages. Thus, the translation of scientific texts from English into Arabic is no longer a straightforward activity and, as Nida (1964: 223) put it, the translation of scientific material from a modern Indo-European language which is in touch with the scientific development into a language that is largely outside the reach of the western science is extremely difficult. The translator of a scientific text will face many

problems in his work. In this regard, Farghal & Shunnaq (1999: 210) argue that the major problems which face the translators of scientific texts are: terminology, standardization and dissemination in the sphere of science and technology.

Data Analysis and Translation:

The following SL text contains 28 sentences. These sentences are simple, compound or complex. On several occasions, the translators combined more than one SL sentence in the TL version. Consequently, the resultant TL text contains 19 sentences. 12 sentences have been randomly selected from the SL text, then compared them with their 8 versions in the TL text. The analysis covers many levels of analysis: syntactic, semantic and stylistic.

SL Text: (1)

Most of the chemical components of the living organisms are organic compounds of carbon, in which carbon is relatively reduced or hydrogenated. Many organic biomolecules also contain nitrogen.

(Lehninger, 1973: 3)

TL Text:

تعتبر معظم المكونات الكيميائية للكائنات الحية مركبات عضوية للكربون حيث يكون فيها الكربون مختزل نسبياً أو مهدرج إضافة إلى ذلك فهي تحتوي على الجزيئات الحيوية للنيتروجين.
(Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

The translators combined the first two sentences of the SL text in one sentence as Arabic tends to use compound sentences. They followed formal equivalence in addition to loan translation, i.e. transference which is manifested in the terms; "الكربون", "مهدرج" and "النيتروجين" respectively. However, they committed some errors on the syntactic, stylistic and the semantic levels.

As far as the syntactic level is concerned, the translators committed a syntactic error as they neglected the use of the accusative mark of the predicate of the Arabic verb "كان" as manifested in the two adjectives "مختزل" and "مهدرج" which should be "مختزلاً" and "مهدرجاً" respectively.

Regarding the semantic level, the translators have erroneously selected the Arabic verb "يعتبر" as an equivalent to "consider". In standard Arabic, the Arabic verb "يُعدُّ" is used to mean "consider". While the verb "يعتبر" reflects a

personal attitude of respect. The speaker expresses his judgment on a state of affairs. The scientific text is characterized by the impersonal style. So, the verb "يعد" is more preferable in Arabic as it is void of personal judgment.

Unfortunately, another semantic error appears as they mistranslated the second SL sentence. The main idea refers to the nitrogen as the component of organic molecules. But the translators rendered the word "nitrogen" into "الجزئيات الحيوية" "للنيتروجين". This interpretation is functionally irrelevant and redundant. Such redundancy distorts the original text and misleads the TL reader.

To add, they committed a stylistic error as they joined the Arabic version of the two SL sentences with the expression "إضافة إلى ذلك". It is a common error negatively transferred to Arabic. The correct way is to use the sentence connector "وفضلاً عن ذلك".

The Proposed Rendering:

تُعدُّ معظم المكونات الكيميائية للكائنات الحية مركبات عضوية للكربون حيث يكون فيها الكربون مختزلاً نسبياً أو مهدرجاً وفضلاً عن ذلك فإن الكثير من الجزئيات العضوية الحية تحتوي على النيتروجين.

SL Text: (2)

The Organic compounds in living matter occur in extraordinary variety and most of them are extremely complex.

(Lehninger, 1973: 3)

TL Text:

تنتشر المركبات العضوية بأنواع حياتية غير عادية ومعظمها معقد للغاية.

(Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

Again, the problems appear at different levels of analysis. With regard to the semantic level, the translators translated the English verb "occur" into "تنتشر" which should be "توجد". Such an error, indeed, misleads the TL reader. In addition, they mistranslated the constructions; "in living matter" and "in extraordinary variety" into "بأنواع حياتية" and "بتنوع استثنائي" respectively. Such errors again make the text incoherent and less easily absorbed by the reader.

At the stylistic level, the translators neglected the use of the resuming particle "وإلى الاستئناف". This is not preferred in Arabic, because unlike

English, Arabic mostly tends to the use of such particle at the beginning of new sentences. Such omission affects the flow of ideas and smoothness of the text.

The Proposed Rendering:

وتوجد المركبات العضوية في المادة الحية بتنوع استثنائي ومعظمها معقدة للغاية.

SL Text: (3)

For example, even the simplest and smallest cells, the bacteria, contain a very large number of different organic molecules.

(Lehninger, 1973: 3)

TL Text:

وكمثال على ذلك، تحتوي حتى أصغر حبة وأبسط أنواع البكتيريا على عدد كبير من الجزيئات العضوية المختلفة. (Alchalabi & Izideen, 1983: 7)

Analysis and Discussion:

Once again, the translators committed mistakes on the syntactic, stylistic and the semantic levels.

At the syntactic level, they committed a syntactic mistake by using the coordinator “و” at the beginning of the text which is redundant and functionally irrelevant.

Regarding the semantic level, they mistranslated the noun “cells” into “حبة” whose scientific equivalent should be “خلايا” which agrees with the context. The choice of “حبة” by the translator may reflect his nationality. Moreover, they mistranslated the construction “even the simplest and smallest cells, the bacteria” into “حتى أصغر حبة وأبسط أنواع البكتيريا” which should be “حتى خلايا البكتيريا” “وهي أبسط وأصغر الخلايا”. Such an error again results in confusing the context, downgrading the TL text and misleading the TL reader.

With regard to the stylistic level, they used the superfluous Arabic particle “كـ” which is used in simile and the comma. Both of them are redundant and irrelevant.

The Proposed Rendering:

مثال على ذلك تحتوي حتى البكتريا وهي أبسط وأصغر الخلايا على عدد كبير من الجزيئات العضوية المختلفة.

SL Text: (4)

It is estimated that the bacterium *Escherichia coli* contains about 5000 different organic compounds, including some 3000 different kinds of proteins and 1000 different kinds of nucleic acids. (*Lehninger, 1973: 3*)

TL Text:

وقد قدر أن بكتيريا القولون *E. coli* تحتوي على ٥٠٠٠ نوع مختلف من المركبات العضوية، تشمل على ٣٠٠٠ نوع من البروتينات و ١٠٠٠ نوع من الأحماض النووية.
(Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

Here, all the levels of analysis mentioned earlier represent problems for the translators.

With regard to the syntactic level, they mistranslated the construction "it is estimated" into "وقد قُدِّرَ" which should be "ويُقَدَّرُ" because the scientific facts are usually expressed in the present tense.

As far as the semantic level is concerned, they mistranslated the English non-finite verb "including" into "تشمل على" which should be "تشتمل على" as the verb "تشتمل" in Arabic is a transitive verb while "تشتمل" is intransitive. They also neglected the translation of the word "about" which should be "ما يقرب من". In this way, the translators are not faithful to the ST.

At the stylistic level, the translators prefer the use of the figures 5000, 3000 and 1000 to "خمسة آلاف", "ثلاثة آلاف" and "ألف" respectively, although, in written Arabic, figures are expressed by words not by mathematical numbers. This can be justified for the text at hand is scientific.

The Proposed Rendering:

ويُقَدَّرُ أن بكتيريا القولون (*E. coli*) تحتوي على ما يقرب من خمسة آلاف نوع من المركبات العضوية المختلفة منها ثلاثة آلاف نوعٍ مختلفٍ من البروتينات وألف نوعٍ من الأحماض النووية.

SL Text: (5)

Moreover, proteins and nucleic acids are very large molecules (often called macromolecules) and the structures of only a few of them is known

(*Lehninger, 1973: 3*)

TL Text:

ومع ذلك، فالبروتينات والأحماض النووية هي جزيئات كبيرة (تسمى أحياناً بالجزيئات الكبيرة macromolecules تراكيب القليل منها معروف. (Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

In this example, the translators committed errors on the stylistic, and the semantic levels.

With regard to the semantic level, they mistranslated the noun phrase “very large molecules (often called macromolecules)” into “(macromolecules تسمى أحياناً macromolecules هي جزيئات كبيرة)”. This repetition of the word “كبيرة” can be monotonous. The accurate rendering should be “(macromolecules هي جزيئات كبيرة) ”جـدأ و غآلبأ مآآآدعآ بالجزيئات العملاقة (

In addition, there is an error in the translation of the construction “and the structures of only a few of them are known” as manifested in “تراكيب ”ولا يعرف سوى بنية القليل منها“ which should be “القليل منها معروف

Regarding the stylistic level, they mistranslated the conjunct “moreover” into “وفضلاً عن ذلك” which should be “ومع ذلك”.

The Proposed Rendering:

وفضلاً عن ذلك، فالبروتينات والأحماض النووية هي جزيئات كبيرة جداً وغالباً ما يطلق عليها بالجزيئات العملاقة (macromolecules)، ولا يعرف سوى بنية القليل منها.

SL Text: (6)

“For biochemists to attempt to isolate, identify and synthesize all the different organic molecules present in living matters would appear to be a hopeless undertaking. Paradoxically, however, the immense diversity of organic molecules in living organisms is reducible to an almost absurd simplicity.”

(Lehninger, 1973: 3)

TL Text:

إن محاولة الكيميائيين الحيويين لعزل وتعيين وتركيب الجزيئات العضوية المختلفة الموجودة في المواد الحية عبارة عن مشروع ميئوس منه ومع ذلك فإن الاختلافات الشائعة للجزيئات العضوية في الكائنات الحية من الممكن اختزالها إلى أبسط ما يمكن.

(Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

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The translators again combined two sentences of the SL text into one sentence.

In fact, this does not affect the naturalness of the text

The analysis of the translation is as follows:

At the semantic level, the translators mistranslated the word "biochemists" into "الكيميائيين الحيويين" and the word "identify" into "تعيين" which should be "الكيميائيين الحيويين" and "تحديد" respectively. Such errors downgrade the TL text and confuse the TL reader. In addition, they neglected the translation of the word "paradoxically" which should be translated into "من الملفت للنظر".

Finally, the translators mistranslated the construction "would appear to be a hopeless undertaking" into "عبارة عن مشروع ميئوس منه" which should be "تعد مهمة". Also, they mistranslated the phrase "the immense diversity" into "الافتقار للتنوع الهائل" which should be into "التنوع الهائل". In addition, they mistranslated the word "reducible" into "من الممكن اختزالها" which should be into "قابلية للاختزال". Finally, they mistranslated the construction "to an almost absurd simplicity" into "إلى أبسط ما يمكن" which should be into "تعد غاية في البساطة قد تكون".

Such errors, in fact, confuse the TL reader and downgrade the TL text.

With regard to the stylistic level, they mistranslated the conjunct "however" into "ومع ذلك" which should be "وعلى الرغم من ذلك" or "وفضلاً عن ذلك". Such error, indeed, downgrades the aesthetic value of the TL text.

The Proposed Rendering:

إن محاولة الكيميائيين الحيويين في عزل وتحديد تركيب الجزيئات العضوية المختلفة الموجودة في المادة الحية تعد محاولة يائسة. وعلى الرغم من ذلك فإن التنوع الهائل للجزيئات العضوية في الكائنات الحية قابلة للاختزال إلى درجة من البساطة قد تكون ملفتة للنظر.

SL Text: (7)

In human organism, there may be as 5 million different kinds of proteins. None of the protein molecules of E. coli is identical with any of the proteins found in man, although some function in a quite similar way. (Lehninger, 1973: 3)

TL Text:

قد يكون هناك ما يقارب الخمس ملايين نوع مختلف من البروتينات في الكائنات البشرية ومع ذلك لا تتماثل حتى جزيئة واحدة من جزيئات البروتين لبتريا القولون مع البروتينات نفسها التي وجدت في الإنسان، بالرغم أن بعضها تعمل بطريقة مشابهة.
(Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

Once again, the translators rendered the SL text two sentences into one sentence. They committed some errors at the syntactic, stylistic and the semantic levels.

With regard to the syntactic level, the translators mistranslated the noun phrase “5 million different kinds” into “الخمس ملايين نوع مختلف” which should be into “وخمسة ملايين نوع مختلف”, as in Arabic, numbers differ from the nouns following them in gender. That is, if the nouns following the ordinal numbers (3-9) are masculine, the numbers take the feminine marker. The opposite is true. If the nouns are feminine, the numbers have the sign of masculine marker.

As far as the semantic level is concerned, they used the construction “ما يقارب” which should be “ما يقرب من”.

Finally, they erroneously translated the SL expression “with any of the proteins found in man” into “مع البروتينات نفسها التي وجدت في الإنسان” which should be “مع أي نوع من البروتينات التي اكتشفت في جسم الإنسان”.

Also, they mistranslated the portion “same function in a quite similar way” into “بعضها تعمل بطريقة مشابهة”. The correct is “بعضاً منها تؤدي وظيفتها”. Such errors downgrade the TL text and confuse the TL reader.

Regarding the stylistic level, the translators put the construction “قد يكون هناك” at the beginning of the sentence. This construction is, indeed, not used in Standard Arabic to express probability. The correct construction is “ولربما كان هناك”.

Also, they joined the two SL sentences with “ومع ذلك”. The correct is to use the sentence connector “وعلى الرغم من أن”.

To add, they used a comma before the last dependent clause “بالرغم من أن ...” which is stylistically redundant in Arabic.

The Proposed Rendering:

ولربما كان هناك ما يقرب من خمسة ملايين نوع من البروتينات في الكائنات البشرية وعلى الرغم من ذلك ليس ثمة تماثل بين أي جزيئة بروتين لبكتريا القولون مع أي من البروتينات الموجودة في جسم الإنسان على الرغم من أن البعض منها تؤدي وظيفتها بطريقة مشابهة.

SL Text: (8)

“Only 20 different of amino acids are found in proteins, but they are arranged in many different sequences to form many different kinds of proteins.”

(Lehninger, 1973: 3)

TL Text:

وقد لوحظ فقط عشرون نوعاً من في البروتينات تترتب بتسلسلات مختلفة لتكون أنواع عديدة مختلفة من البروتينات الأحماض الأمينية.

(Alchalabi & Izideen, 1982: 7)

Analysis and Discussion:

Here, the SL version is a compound sentence, but the translators rendered it into a simple sentence. This is acceptable. The English scientific texts frequently use compound and complex sentences. They committed several errors on the syntactic, stylistic and the semantic levels.

As far as the syntactic level is concerned the translators put the predicate of “تكون” in the subjective case. This is not acceptable in Arabic. The predicate of “تكون” should be in the objective case. The object ends with “fatha” instead of “dhamma” This rule extends to cover the adjective which should be also in the objective case. Thus, instead of “لتكون أنواع عديدة مختلفة”, the translators should use “لتكون أنواعاً عديدة مختلفة”.

As far as the semantic level is concerned, they erroneously translated the English verb “found” into “لوحظ” which should be rendered into “وجد”. Also, they neglected the translation of the conjunct “but” which should be rendered into “غير أنها” or “لكنها”. This cohesive device helps the reader to more easily understand the text.

To add, they neglected the translation of the English word “many” in “but they are arranged in many different” which should be rendered into “عديدة”.

With regard to style, they used the Arabic word “فقط” in the wrong location as manifested in “وقد لوحظ فقط عشرون نوعاً” which should be “وقد وجد عشرون نوعاً فقط”. This position affects the meaning. In the ST, the word “only” is a modifier to the number “twenty”. In the TT, it describes the verb “لوحظ”.

Such error downgrades the aesthetic value of the TL text and confuses the TL reader.

The Proposed Rendering:

وقد وجد عشرون نوعاً فقط من الأحماض الأمينية في البروتينات غير أنها تترتب بتسلسلات عديدة مختلفة لتكون أنواعاً عديدةً مختلفة من البروتينات.

5. Findings and Conclusions:

The basic conclusions the study arrived at are the following:

1. It is indispensable to use loan translation (transference) in many areas; especially with regard to the translation of scientific terminology where there is a wide gap between the SL and TL.
2. Complete loyalty to the SL text succeeds in conveying the message; but this is done at the expense of other levels of analysis; in particular the stylistic level. The stylistic features are generally considered as language specific features and should not be transferred literally into the TL. Otherwise, they will result in distorting the aesthetic values, degrading the TL text and misleading the TL readers.
3. The problems of translating biochemical texts appear at different levels of analysis; syntactic, stylistic or semantic levels. The most serious one is the semantic one where meaning is totally distorted and this consequently negatively affects the content of the ST, which is the main goal of biochemical texts.

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بعض مشكلات ترجمة نصوص الكيمياء الحياتية من الإنكليزية إلى العربية

(دراسة نقدية)

م. ماهر الجوادي و م. نهى فاضل

المستخلص

تهدف الدراسة إلى تسليط الضوء على طبيعة ترجمة النصوص العلمية: (نصوص الكيمياء الحياتية على وجه التحديد) لبيان مدى التكافؤ بين نص لغة الهدف (العربية) ونص اللغة الأصل (الإنكليزية)، وهي محاولة لإيجاد بعض الحلول لمشكلات الترجمة التي قد تطرأ .