Hala Sharkas

Translation Quality Assessment of Popular Science Articles

Corpus Study of the *Scientific American* and Its Arabic Version

Abstract

This study examines the problems of translation that the genre of popular science feature articles poses for translators and investigates the methods followed in dealing with these problems and their ability to produce adequate translations. The method of analysis is adopted from Hervey and Higgins' (1992) model of translation analysis in which the principle of translation loss is used to assess the adequacy of a target text in relation to five textual levels: genre, cultural, semantic, formal and varietal. The model also takes the translation brief and genre characteristics into account when assessing the translations. A working hypothesis and four sub-hypotheses were developed to perform this investigation. Textual analysis has identified several translation problems some of which are general and some specific to the genre. The methods followed by translators vary, and analysis shows that translation loss is mainly on the semantic and formal levels.

1 Introduction

As English became the universal language of science in the 20th century, most scientific research is written in English all over the world, including the Arab world. At the same time, there is a growing demand for communicating scientific knowledge to the public in the form of popular science magazines and TV documentaries as well as encyclopedias and books. Consequently, there is also an increasing call for translation of these works into language for the 'everyman' reader. It is, therefore, essential for translators and translation trainees to be aware of the translation problems that such popularizations may pose and the factors that affect the quality of translations of such writings.

To explore the factors that influence the quality of translation of scientific texts written for the general public, a corpus of five popular science feature articles (PSFAs) is chosen for textual analysis with the aim of answering the following questions:

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(1) What are the translation problems[1] that the textual features of the genre of PSFAs pose for the Arab translator?

(2) What translation techniques are used to deal with these problems?

(3) How successful are these methods in producing adequate translations?

The five texts are analyzed using Hervey and Higgins' (1992) schema of five filters and its developed version in Dickins, Hervey and Higgins (2002). This schema is a systematic translation-oriented model of text analysis that distinguishes five main categories corresponding to: the genre, cultural, semantic, formal and varietal features of a text. There is also the component of the translation brief which constitutes details of the purpose of translation, its time and place, and all other information related to the communicative situations of the source text (ST) and the target text (TT). These categories allow for the analysis of the linguistic, cultural, pragmatic and text-specific translation problems identified by Nord (1997: 64-67).

Even though the model is primarily devised as a translation method, Hervey and Higgins (1992: 244) intend the translator to use it in assessing his/her work as well as that of others. This same systematic method of analysis is, therefore, used to identify and assess the strategies employed by the translators of the sample texts to deal with these problems, in terms of their success in producing adequate target texts.

2 Adequacy and Equivalence

A TT has always been assessed in terms of its relation to the ST, traditionally called the relation of equivalence. The concept of equivalence, however, has so far proved elusive to definition (cf. Bassnett-McGuire 1991; Pym 1992; Baker 1992). Among the most influential works on equivalence in translation are Eugene Nida's (1964), who distinguishes between two types of equivalence: formal and dynamic. Formal equivalence focuses on the form as well as the content of the message whereas dynamic equivalence focuses on producing an equivalent effect on target language (TL) readers by tailoring the message to the linguistic specifications of the TL and the target culture. In other words, when the aim is to keep as close as possible to the ST in content and form, the translator would produce a formal equivalence, but when the aim is to make the TT conform to target culture conventions and read like TL original texts, the translator would be producing a dynamic equivalence. Nida does not ignore the fact that keeping close to both the content and the form of the ST is often not possible, and therefore considers, as a general rule, that content should always take priority over form if an equivalent effect is to be achieved. Obviously, if this rule is applied to poetry where form is as important as, if not more important than, the content, an equivalent effect cannot be achieved. The importance of Nida's work lies in his attempt

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[1] The term *translation problem* is used here in the same sense used by Nord (1997: 64), i.e. to refer to objective translation problems, which will always remain as such, even when the translator deals with them, as opposed to subjective translation difficulties, which are related to particular difficulties encountered by a specific translator due to a lack of cultural or linguistic knowledge, or to the unavailability of appropriate documents.

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to systematize translation methods and assessment. His concept of equivalent effect, however, is vague: equivalent effect on potential source or target readers defies scientific measurement, and also, there are language and cultural differences regarding what is considered as the equivalent effect of a ST in the TL (Munday 2001: 42).

Newmark (1981) builds on Nida's work, but even though he questions whether the effect produced by STs could possibly be reproduced on TT audiences, he does not completely abandon Nida's concept of equivalent effect. Using Nida's dynamic and formal equivalences as a basis, he identifies two types of translation as "correct": communicative and semantic. The choice between semantic and communicative methods for Newmark seems to depend on the genre, for he assigns serious literature, autobiography and any important political or other statement to semantic translation where the criterion of assessment is the accurate reproduction of the significance of the ST. As for non-literary and technical writings, communicative translation should be applied, the criterion of evaluation being the accurate communication of ST message in the TL (Munday 2001: 45). Determining the levels at which the significance of a text and its message are to be found and measuring accuracy in each case remains, however, subjective.

In their attempt to design a method of translation that can offer a systematic approach to the task of translation, Hervey and Higgins (1992: 22-24) reject the principle of equivalent effect and criticize it as misleading and unhelpful for several reasons. First, measuring the exact effect of a ST is hard and problematic. Second, this principle presumes that a translator is able to know what effect the TT will have on its recipients. These two problems indicate that any assessment of equivalent effect will not be objective, because translators will have to substitute their own subjective interpretations of what effects a ST has on its recipients and a TT on its intended audience. Third, translation between any two languages is a translation between two different cultures, and, therefore, any effects of STs and their TTs will never be the same. Finally, in the case of STs written at a relatively distant point in the past, even if an objective equivalent effect is attainable, there is the problem of determining the effect of such a ST on its original audience. There is also the question of whether to reproduce the effect of a ST as it was on its original audience or as it is on a modern SL audience. Any attempt to determine such effects will, of course, be merely speculative. In short, the principle of equivalent effect is intrinsically vague and poses too many methodological problems for it to be applied in a systematic study.

Hervey and Higgins (1992) adopt the more practical principle of inevitable translation loss, which means that every translation involves a certain degree of loss in meaning. Consequently, the translator's task is not to seek the perfect or ideal translation but to reduce the translation loss. To achieve this aim, the translator will have to decide "which of the relevant features in the ST it is most important to preserve, and which can most legitimately be sacrificed in preserving them" (Hervey/Higgins 1992: 25). Their concept of translation loss not only includes the inevitable loss of ST textual features, but also translation "gain" or addition of textual features to the TT that are not present in the ST, such as using TT words that have connotations not present in the ST. The translator's task thus moves from chasing an elusive ultimate translation

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by trying to maximize similarities between essentially two different texts to the more realistic task of reducing translation loss by minimizing the differences between the ST and the TT. According to Dickins, Hervey, and Higgins (2002: 21-25), translation loss is not a loss of translation, but of textual effects, and since effects cannot be quantified, loss cannot be either. It can, however, be controlled by continually asking if the loss matters or not, in relation to the purpose of translation.

In this study, I borrow Švejcer's (1993) evaluative category of adequacy and apply it in Hervey and Higgins' (1992) model. Based on Reiß and Vermeer's (1984) work, Švejcer (1993) distinguishes between equivalence and adequacy as evaluative categories, and he associates adequacy with the evaluation of the translation process in the real practice of translating, which inevitably involves loss.

Adequacy allows for the assumption that decisions taken by translators not infrequently involve some kind of compromise; that translations require sacrifices and the translators must often put up with some losses during the translation process if they are to render that which is of primary importance in a text: its functional dominant (Švejcer 1993: 52).

If applied in Hervey and Higgins' (1992) model, a TT can be described as adequate when the translation loss is acceptable. In order to determine which translation loss is acceptable and which is not, the degree of relevance of all textual features must be determined. Textual relevance is defined by Hervey and Higgins (1992: 242) as "a qualitative measure of the degree to which, in the translator's judgment, particular properties of a text are held responsible for the overall impact carried in and by that text." Those features that have high textual relevance must be preserved even if that causes translation loss of other less relevant features. Determining textual relevance, as Hervey and Higgins (1992) admit, is subjective. The most objective test suggested is to imagine that a particular textual property is omitted from the text and to assess what difference this omission would make to the overall impact of the text as a whole. If the answer is "little or none," we may take it that the property in question has a very low degree of textual relevance. If, on the other hand, omission of a textual property would imply a loss in either the genre-representative or the individual (perhaps even deliberately idiosyncratic) character of the text, we may attribute a high degree of relevance to the textual property in question (Hervey/Higgins 1992: 243).

Even though textual relevance is subjective to a degree, unlike Nida's equivalent effect, it deals with specific identifiable textual features and not with the effect of a text as a whole. In addition, as is clear from the above mentioned test, identifying the genre properties is essential to determining textual relevance. There are also questions regarding the translation: its purpose, its audience, its time and place and its medium, the answer to which constitutes the translation brief. This brief can, then, be used to decide the strategy that should be followed in translation. The information in the brief along with the genre requirements can help reduce the subjectivity in determining textual relevance.

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3   Translation Analysis Parameters

Despite the theoretical differences between Nord's (1997) model of translation analysis and that of Hervey and Higgins (1992), and due to the strengths of Nord's model, I shall compare it, in terms of its tools of analysis, to Hervey and Higgins' model in order to identify the latter's advantages and disadvantages as the model of analysis chosen in this study.

3.1   Text Analysis

According to Nord (1997), it does not matter which text-linguistic model is used in analysis as long as it includes "a pragmatic analysis of the communicative situations involved and that the same model be used for both the source text and the translation brief, thus making the results comparable" (Nord 1997: 62). Munday (2001) summarizes the following intra-textual factors listed by Nord (1991) as one possible model for ST analysis:

- subject matter;
- content: including connotations and cohesion;
- presuppositions: real-world factors of the communicative situation presumed to be known to the participants;
- composition: including microstructure and macrostructure;
- non-verbal elements: illustrations, italics, etc.;
- lexic: including dialect, register and specific terminology;
- sentence structure;
- suprasegmental features: including stress, rhythm and "stylistic punctuation."

(Munday 2001: 83)

Hervey and Higgins' (1992) model of translation includes a schema of five filters or categories "through which texts can be passed in a systematic attempt to determine their translation-worthy properties" (Hervey/Higgins 1992: 224). These categories are the genre, cultural, formal, semantic, and varietal filters. Analysis on the genre level includes identifying the type of communication (oral or written), medium of communication, text type and ST subject. In other words, this filter includes Nord's factors of subject matter and composition. Although analysis of non-verbal elements is not explicitly discussed in Hervey and Higgins' model, any examination of the main genre properties performed in this filter should take account of such elements.

The cultural filter examines all features in the ST that are exclusive to the source culture or source language and which in translation can involve a degree of cultural transposition. This filter covers the element of presuppositions in Nord's (1997) model. The semantic filter, which analyzes textual features related to literal and connotative meanings, includes the factor of content in Nord's model, while the formal filter analyzes features on the inter-textual, discourse, sentential, grammatical, prosodic and phonic/graphic levels of the text, thus covering the factors of composition, sentence structure and suprasegmental features. Finally, the varietal filter examines textual features related to dialect, sociolect, social register and tonal register that may be

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present in the ST, and this filter covers Nord's lexic factor. It is evident that the elements identified by Nord in her suggested model of text-linguistic analysis are all included in Hervey and Higgins' schema of textual filters. Their schema, however, ensures that the analysis of the ST is performed in a systematic way without neglecting any textual property. Also, they provide more detailed categories than is mentioned in Nord, which proves very helpful to the translator when faced with the complexities of linguistic and textual features of a text.

3.2 Translation Brief

Translation is normally performed by assignment from a client, who could be called the initiator. This initiator needs the translation for a purpose and ideally (s)he will inform the translator of that purpose along with other details to help the translator produce the required TT. According to Nord (1997: 30), these pieces of information are called by Vermeer (1989) *translation commission*, by Kussmaul (1995) *translation assignment*, by Nord (1991) *translating instructions*, and by Fraser (1996) *translation brief*. Nord (1997) adopts the term *translation brief*, because it best describes the type and function of the information to which this term refers. The term "implicitly compares the translator with a barrister who has received the basic information and instructions but is then free (as the responsible expert) to carry out those instructions as they see fit" (Nord 1997: 30). The translation brief helps the translator draw profiles of the ST and the required TT as well as decide from the very beginning what type of translation is needed. It includes (implicitly or explicitly) the following information:

- the (intended) text function(s),
- the target-text addressee(s),
- the (prospective) time and place of text reception,
- the medium over which the text will be transmitted, and
- the motive for the production or reception of the text. (Nord 1997: 60)

In other words, the translation brief is not intended to tell the translator what translation strategy or type to choose, but to help him/her make these decisions. When experienced translators infer the purpose of a text from the translation situation, such as translating a technical ST into a technical TT, the information inferred acts as a translation brief and is called by Nord (1997: 31) "conventional assignment."

Although Hervey and Higgins' (1992) model of translation methods is not based on Skopos theory, their practical approach to translation acknowledges the importance of the information about the intended audience and intended TT function(s). In fact, Hervey and Higgins consider it essential to find out these pieces of information before the translator makes any strategic decisions. In the version of Hervey and Higgins' course of translation method developed in 2002 for Arabic-English translation, the role of the translation brief in the translation process is explicitly recognized: "one pre-eminent translation issue is neither a textual feature nor a translation operation. This is the translation brief – why the text is being translated, on whose behalf, and for what audience" (Dickins/Hervey/Higgins 2002: 230). In other words, both models view the translation brief as an essential parameter in ST analysis and TT production, but since

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Nord defines the elements to be included in the brief in clearer and more specific terms, her definition will be followed in investigating the translation brief for the samples in this study.

3.3   Hierarchy of Translation Problems

In Hervey and Higgins' (1992) method, translation follows a top-bottom approach as the translator is required to ask several questions that determine the genre aims and properties, the TT audience, the intended function(s) of the TT and all the information needed to form the strategic decisions before embarking on translation. These decisions are related to determining the textual relevance of ST textual features which are identified in the ST analysis. Depending on the translation brief and the genre properties, the translator has to decide which features are of high textual relevance and must be retained in the TT and which are not. In other words, the strategic decisions determine which ST features will be reproduced in the TT, and whether the methods of translation will be SL-biased or TL-biased. Consideration of the genre requirements and the information in the brief also helps the translator in determining the methods for dealing with the problems of reproducing the ST textual features, including omission, addition, compensation, paraphrasing, explication, and so on.

4   Methods

The starting hypothesis of the study is that English-Arabic translations of PSFAs commissioned by reputable publishers are adequate translations. As discussed above, to consider a TT adequate, the translation loss occurring in that TT must be necessary (not occurring because of the translator's incompetence or lack of knowledge) and has to occur in features of the texts that are considered of low textual relevance. The ranking of features in terms of textual relevance is determined by the translator in the light of the requirements of the genre and the translation brief. By implication of the adequacy criteria, four sub-hypotheses are developed for the textual levels identified in Hervey and Higgins' (1992) model except the genre level, because (1) it is expected that the genres in both English and Arabic are similar in function and macro-structure, and, therefore, pose no problems for the translator in that respect, and (2) any loss in textual properties related to the micro-level of the genre is discussed in the remaining filters. To avoid repetition, the four sub-hypotheses are included here in one state-ment: It is hypothesized that no unnecessary translation loss occurs with respect to textual features in the (1) cultural, (2) semantic, (3) formal, and (4) varietal levels in any of the analyzed TTs. These sub-hypotheses are applied to representative sample texts selected according to certain criteria presented below. If one or more of these sub-hypotheses are false, this implies that the main hypothesis is also false. These hypotheses are tested by textual analysis, which examines the different textual features that pose a problem in translation in the TTs, the strategies used to deal with these problems and their effectiveness in causing no unnecessary translation loss.

Selection of the corpus is based on the following criterion: TTs should be com-missioned by publishers who acknowledge the legal rights of the original publishers

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and indicate them clearly on the translations' cover pages. This ensures that the translation is performed to high standards, and allows the original text to be traced for the purpose of analysis. Accordingly, a corpus of five articles by different translators is chosen randomly from five issues of *Majallat al-'Uluum*, the Arabic version of the *Scientific American*. The Arabic magazine is published by the Kuwait Foundation for Scientific Advancement, an independent, not-for-profit institution that aims to achieve cultural advancement in Kuwait and in the Arab world.

A detailed analysis of the genre in both English and Arabic using Bhatia's (1993) model of genre analysis shows that the structure of these articles corresponds to the typical structure of journalistic feature articles in Arabic: introduction, development and conclusion.[2] Such typical features mean that many of the conclusions concerning the genre are applicable to any feature article in popular science magazines. To examine the translation brief for the samples in this study, the publishers' literature is reviewed and a phone interview with the editor-in-chief is made.

The schema of filters devised by Hervey and Higgins (1992) allows the translator to scan a text for its most salient features, and then, relying on the information about the genre properties and details of the translation brief, to rank these features with respect to their textual relevance.

5 Results

The results of the textual analysis performed by means of parallel text alignment are presented in the following sections.

5.1 Genre and Translation Brief

Bhatia's (1993) seven-step method for analysis of unfamiliar genres was used to analyze the genre of PSFAs. Analysis indicates that the aim of this genre is to inform the interested reader of the latest news and developments in the different fields of science, using as simple a style as possible. To fulfil this aim, the genre is characterized by the use of imagery and analogies as well as attention-grabbing titles and subheadings, short and simple sentences, and information structures that move from the old and familiar towards the new and difficult. Also, to increase readability, interruption to the flow of text is discouraged, and footnotes are used only when they are essential. Highly technical language or jargon is avoided, and definitions of unfamiliar technical terms as well as examples to explain unfamiliar concepts are often provided to make the articles accessible to lay readers. Constructions that may cause ambiguity, such as complex nominalizations, are also avoided where possible, and extensive use of the passive voice is considered inappropriate.

Analysis shows also that Arabic has an equivalent genre that bears great similarities in aim and structure to the ST genre, which means that production of adequate translation is possible. Moreover, the TTs in the corpus follow the same

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2   For detailed comparisons of properties of both genres in Arabic and English, see Chapter 4 and Appendix A in Sharkas (2005).

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structure as their STs, and therefore there is no translation loss in that feature of the genre. General stylistic properties such as sentence length and use of nominalizations and the passive voice, however, were not identified in the Arabic genre due to lack of studies in the area. Having said that, general journalistic writings in Arabic, as Sharaf (1980: 202-203) states, are characterized by use of short sentences and active verbs, which could be characteristic of the PSFAs as well. Since this genre has been intro-duced into Arabic through translation, and given the similarities in aim and structure, the stylistic characteristics of the ST genre will be taken into consideration when examining the textual features in the other filters. Hence, translation problems (and translation loss) related to such stylistic properties will be examined individually as and when they arise in the text analysis.

By examining the specific case of the *Scientific American* and its Arabic version *Majallat al-'Uluum*, it has been found that the intended functions of the STs and TTs are the same: to inform the interested reader, mainly science graduates, about the latest research developments in the different scientific fields (in the case of this particular corpus, it is the biomedical sciences). The *Scientific American* is a prestigious popular science magazine that prides itself on its many Nobel laureate writers. Although in recent years the magazine has been trying to make its style accessible to a wider range of readers by commissioning more journalists than scientists to write articles for it, most of its main feature articles are still written by scientists prominent in their fields (*Full history* 2003). Its Arabic version, *Majallat al-'Uluum,* is also a prestigious popular science magazine published in Kuwait and distributed in 20 Arab countries. Certain feature articles in the American version are selected by the editors of the Arabic version to be translated and published a few months after appearing in the original version of the magazine. The translators commissioned are all specialists in the fields in which they are translating. The illustrations, tables, graphics, sidebars, and More-to-explore sections that appear in the original are reproduced in the translated version. The publishers or commissioners of the Arabic translation emphasize factual accuracy as the main requirement in translation. They instruct translators to follow a certain style in translating names and rendering new technical terms demanding the use of English ST terms, and allowing the use of footnotes. They provide revision by a specialist in the field to ensure the accuracy of translated scientific material, and by a language editor to ensure that the TT is grammatical.

The above pieces of information provide the five main elements identified as com-prising the translation brief: the intended text function(s), the target-text addressee(s), the time and place of text reception, the medium, and the purpose of translation. The genre analysis has also provided an insight into the functions and formal characteristics of the ST and TT genres. Using this information and these requirements as a reference, the textual analysis of the STs and TTs is undertaken.

5.2   Cultural Filter

Textual analysis shows that PSFAs present different types of cultural features that may pose problems for translators, the most significant of which are idioms and names. Baker (1992: 72-78) discusses five strategies for translating idioms: (1) using an idiom

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of similar meaning and form; (2) using an idiom of similar meaning but of different form; (3) paraphrasing; (4) omission, and (5) compensation. Naturally, the choice of any of these strategies depends on the availability of TL equivalents and the possibility of paraphrasing in relation to the style of the genre and the importance of preserving the meaning of the idiom. Dickins, Hervey, and Higgins (2003: 151) suggest five techniques for dealing with stock metaphors or idioms similar to the ones suggested by Baker (1992). To the above strategies, Abu-Ssaydeh (2004: 120) adds the use of footnotes as well as literal translation.

In the corpus, the most used technique in translating idioms is paraphrasing, which is a form of communicative translation and is the most suitable technique to serve the informative function of the TTs when no appropriate equivalents are available.

Example:

ST: shrink the bloodstream to a pinpoint

TT: تضيق مجرى الدم تضييقاً شديداً

BT:[3]   tightening the bloodstream strong tightening

When this technique is used, a translation loss of the emotive effect and the precision of the ST idioms occurs. Nevertheless, it is an acceptable loss as no corresponding idioms are found in the TL and those available are stylistically unsuitable. For the same reasons, this technique is used with almost all phrasal verbs, which are considered a type of idiom, and which have no grammatical correspondence in Arabic. When appropriate equivalents for idioms suited to the style of the genre are available, borrowing (literal translation) and substitution (using a familiar idiom or fixed expression in the TL) are also used.

Example of borrowing:

ST: The grant ... is "a vote of confidence" in the field.

TT: [إنَّ] المنحة ... "تصويت بالثقة" في هذا المجال.

BT: The grant ... [is] "a vote of confidence" in this domain.

This idiom has already entered the language, and both its wording and its meaning are preserved in the TT.

Example of substitution:

ST: to keep the resistance demon at bay

TT: ولإبقاء عفريت المقاومة في قمقمه

BT: for keeping the resistance demon in his bottle

This is the only example of substitution in the corpus, and the translator does not actually use an idiom in Arabic but rather adapts the familiar imagery of the bottle and the jinni to replace the ST imagery created by the idiom *to keep at bay*.

On the whole, since the metaphorical meaning, not the literal meaning, is preserved in the TT and transferred in a style suited to the TT genre style, no unnecessary translation loss on the cultural level occurs with respect to the translation of idioms.

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[3]   BT = Back translation.

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Names, such as proper names, names of institutions and brand names, also present a significant choice between the different cultural transposition techniques such as exoticism in the form of code-switching[4] to English, cultural borrowing in the form of transliteration, and communicative translation in the form of finding a close equivalent to the ST names, but most of the time it is a mixture of two of these techniques.

Example:

ST: *research by John Collinge of St. Mary's Hospital in London*

TT: < من مستشفى سانت ماري في لندن] *John Collinge* . كولينج>[بحث قدمه >

In terms of serving the educational function of the TT genre and its audience of interested readers, who might want to check references or find more information about a certain institution or programme, the Arabic translation on its own may not be helpful. For example, *initiative* in *Women's Health Initiative* is rendered as حملة [campaign]; so if someone searched for the programme on the Internet using the back translation *campaign* instead of *initiative*, the results may not lead directly to the required programme. Ensuring accuracy of factual information by using code-switching as a technique may increase the level of foreignness of the text but, in this case, it is acceptable because it serves the informative function of the TT.

Other instances of cultural terms or references occur less frequently and are not typical of the genre, such as references to SL cultural customs, food, and etymological references. In brief, the main cultural problems that translators face in this genre are idioms and names. No significant unnecessary translation loss has been detected on the cultural level, which means that the translations are adequate on this level. It also indicates that the mixture of SL- and TL-biased translation techniques used by Arab translators is generally successful in producing adequate translations.

5.3   Semantic Filter

Textual analysis on the semantic level reveals that the genre of medical feature articles exhibits significant instances of denotative and connotative meaning. The most significant denotative meaning is technical meaning. Genre analysis shows that the heavy use of technical terms is discouraged in popular science, but such terms cannot be avoided altogether. Moreover, publications differ in their use of technical terms: some, like the *Scientific American*, allow a heavier dosage of them than the *National Geographic*, for example. It is worth noting here that these differences indicate a subtle connotative meaning that technical terms express in popular science: the more they are used, the more exclusive the publication is, which in turn reflects on its status in comparison with other publications. In addition, the stylistic choices regarding technical terms, such as use of borrowed or indigenous forms of the term, academic or popular, a full form of a term or its abbreviation, all have connotative meanings reflecting on the publication, the author and the intended reader. Such considerations

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4   I use this term to mean putting English ST words in the TT next to their Arabic translations. I consider this as a form of explanatory translation.

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should also be weighed by the translator when dealing with the problem of technical terms.

From the translator's point of view, technical terms pose three main problems: lexical, conceptual and stylistic. According to Dickins, Hervey, and Higgins (2002: 184-185), lexical problems are of three types: (1) technical terms that are unfamiliar to the translator because they are not usually used in everyday language, and therefore require specialist knowledge to understand and render them correctly in the TL; (2) everyday familiar terms that are used in a specialized way; and (3) familiar terms which, while their use is specialized, also make sense in a way that is not obviously wrong in the context, thus posing a risk of not being recognized by the translator. Types 2 and 3 are also called sub-technical terms by Trimble (1985: 129). As new scientific terms are coined every day, dictionaries and glossaries are not always sufficient, and therefore the translator should have good background knowledge of the subject, if not specialist knowledge, in addition to mastering the TL and having a good understanding of its linguistic traditions. The translators commissioned by *Majallat al-'Uluum* are all specialists, and they are given guidelines derived from the rulings of the Arabic Language Academy in Cairo on how to render new terminology. The methods are derivation, use of metaphors and borrowing. *'Uluum*'s editor-in-chief, however, said, when interviewed, that borrowing is encouraged because it is the most accurate and consistent of all methods. Examples of borrowed technical terms in the samples are *genomics* الجينوميات, *chemokines* الكيموكينات, and *hormones* الهرمونات. Derived forms are also used quite often in the samples such as *bioinformatics* علم المعلوماتية الحيوي. Literal translation and borrowing are also mixed together, as in *glycolipid* الليبيدات السكرية.

In addition to translations of the ST terms using any of the above-mentioned methods, the TTs provide the original ST terms in English, which can be seen as a form of explanatory translation. This technique is used in all Arabic scientific texts, whether popular or academic, and it is claimed in Sharkas (2005) that heavy use of this technique associates popular science texts with foreignness instead of easy access to non-specialists, which, after all, is one of the genre's aims. In addition, its use with non-technical terms is unnecessary and may indicate incompetence on the part of the translator. Examples, in the corpus, of a non-technical word being explained using a ST word are *insights*, *blueprints*, *decipher*, *mobile*, *heartburn*, *sweetness*, *configuration*, *versions*, and *batches*, all of which are used in their primary literal sense.

A less frequently used explanatory technique in the corpus is footnotes, which, according to the genre requirements, must be used only when it is necessary because they interrupt the flow of the text. The editors use this technique to refer to the original English title and the subheadings of the article. They also use it to refer to ST expressions that have metaphorical sense translated literally in the TT such as in the translation of *friendly fire* and *a strip of Velcro*. Frequently, footnotes provide explanation in Arabic for the technical terms in the TT, whether they are given in Arabic only or in both ST and TT languages.

Sub-technical terms occur in the samples, such as *active site*, *agent*, *analogue*, *atom*, *cell*, *cones*, and *culture*. Identifying these sub-technical terms and their correct equivalents is essential for accuracy. The methods used to translate these terms are

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the same as those of technical terms. Analysis shows no mistranslation of any technical or sub-technical term, especially as most of them have already well-established Arabic equivalents.

The second type of technical translation problems involves conceptual problems. These problems lie in two main areas: (1) the "failure to understand underlying suppositions and knowledge taken for granted by experts in a science, but not understood by non-specialists and not explicit in the ST" (Hervey/Higgins 1992: 167), and (2) the lack of knowledge of the development of new ideas, the logic of a discipline, methods of argumentation, and the development of relations between concepts. Analysis shows no instances of inaccurate translation of scientific concepts as such.

There are, however, issues of variation which are related to style rather than to denotative meaning. For example, *Hitti's New Medical Dictionary* (Hitti/Al-Khatib 2000), lists five synonyms for the term *dialysis*: ديال، ديلزة، الميز الغشائي، تحال، إنفاذ. Analysis of samples shows that the method used by Arab translators for this problem of terminology variance is to provide alternatives in the TT when more than one synonym exists. Alternative synonyms usually appear between brackets after the "main" terms, but sometimes they are given as footnotes. Sometimes the terms that would be more familiar to lay readers are used as main terms, with unfamiliar ones being cited as alternatives, such as in *stroke* (نشبة) سكتة دماغية and *infection* (الخمج) العدوى; sometimes, it is the other way round, such as in *neurons* (خلايا عصبية) عصبونات. It is important to note that these alternative synonyms are usually cited only at the first appearance of the term in the text. In subsequent usages, only one of them is used, usually the main one. Therefore, these alternatives cannot be seen as stylistic variations in the strict sense, i.e. they are not provided for aesthetic purposes, where the translator may use an alternative to avoid repetition, for example. Hence, the use of alternatives reveals the translator's endeavour to provide accurate and intelligible TTs. Nevertheless, there are minor instances of inconsistency, either in using different variations of the same term in the same article or in using different variations in different articles of the same magazine issue. For example, *hepatitis B* is translated in the same text once into التهاب الكبد البائي, and once into (التهاب الكبد من النمط B). From a stylistic point of view, the overuse of TL variations is interruptive to the flow of the text, and may slow down readability. This researcher believes that the addition of alternative terms should be used sparingly and only when they are absolutely necessary.

Regarding denotative meaning of words that are not technical or sub-technical, analysis shows a considerable number of examples where partial overlapping translation and literal translation techniques are not successful, and where unnecessary translation loss occurs.

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Example:

ST: Paradoxically, however, the notoriously "resorptive" PTH was recently approved as the first bone-building agent, as opposed to the antiresorptives

TT: السيئ السمعة قد تمت المصادقة resorptive المرتشف PTHولكن من المحير أن الهرمون عليه مؤخراً على أنه العامل الأول الباني للعظام المعاكس لمضادات الارتشاف.

BT: And but [it is] perplexing that the hormone PTH the resorptive [of] bad reputation [has been] approved recently as the first bone building agent opposing anti resorptives.

Although *paradoxically* may overlap semantically with *perplexing*, in this context the loss of the semantic component *appearing contradictory* in translation is unacceptable since a better alternative is available in Arabic, and also because the selected equivalent affects the coherence of the TT sentence. By saying من المحير [it is perplexing], the translator makes the author perplexed as to why PTH was approved by authorities, while in the sentence that follows, the author actually explains why, which means that he is not perplexed or confused.

As for connotative meaning, the most significant instance found in this genre is the figurative meaning of metaphors and similes. The main method used in translating metaphors is literal translation, which is sometimes successful, but frequently is not. The choice of retaining the metaphor or the imagery is, in general, correct; it is the choice of words or synonyms that causes the unnecessary translation loss. With the exception of reflected and collocative meaning, instances of other types of connotative meaning are few and insignificant. Any inadequacy in translation related to these two types is introduced into the TTs through the translators' word choice and could have been avoided.

To sum up, being informative in purpose, the most significant textual features of PSFAs are related to the semantic level. There are many instances in the corpus chosen from *Majallat al-'Uluum* where unnecessary translation loss occurs in non-technical words and non-lexicalized metaphors as a result of the translator's being too "faithful" to the ST. The loss is mainly in the idiomaticity or intelligibility of the TTs, and occasionally in their accuracy. There is, however, no significant loss of factual meaning related to technical terms. Nevertheless, since the translation brief emphasizes the need for intelligibility, clarity and accuracy, and since instances of unnecessary loss occur in the translation of textual features related to those requirements in all texts of the corpus, it is concluded that the TTs are inadequate on the semantic level.

5.4   Formal Filter

The formal filter includes the following levels identified by Dickins, Hervey & Higgins (2002:79): the phonic/graphic, prosodic, grammatical, sentential, discourse and intertextual. Since the formal filter requires detailed analysis of all sentences and paragraphs in the text, and since the sample texts amount to 19,907 words in total, only the first section of each text (as marked by the main title at its beginning and a subheading that comes at its end to start the section after it) is analyzed. As the five introductory sections are approximately the same length, with an average word count of 399 words, this ensures that they are selected on a similar basis and cover a range

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of functions. Also, unlike other sections in the middle or at the end of the text, the first section can be considered a relatively independent unit, which allows a simple and accurate analysis of the aspects of cohesion and coherence contained in the texts.

Textual analysis shows that, on the graphic level, the translator must be aware of the requirements of transliteration and graphical code-switching in the genre, in general, and in the specific publication with which (s)he is working, in particular. With respect to the corpus in hand, no significant translation loss has been detected, although a more comprehensive transliteration system would help the translator to be more consistent. No features of significance on the prosodic level are found in this genre, which means that a translator can safely ignore this level when making the strategic decisions of translation.

On the grammatical level, the most important features for the translator are compound structures and complex nominalizations. The methods used to deal with these features revolve around adapting the structures to TL grammatical conventions, but the efforts made in this respect in the corpus are not always successful.

Example:

ST: DuPont Pharmaceuticals chose a new HIV nonnucleoside reverse transcriptase inhibitor

TT: لإنزيم الانتساخ nonnucleoside اختارت شركة دوبون للصيدلانيات مثبطاً جديداً لانكليوزيدياً HIVالعكسي للفيروس

BT: DuPont Pharmaceuticals chose a nonnucleoside new inhibitor of reverse transcriptase enzyme for the virus HIV

In this example, the noun phrase in the ST is divided into one noun phrase and two prepositional phrases in the TT. The translator, however, has wrongly separated مثبطاً [inhibitor] from لانكليوزيدياً [nonnucleoside]. Also, *new* should modify the noun phrase *nonnucleoside inhibitor* and not *inhibitor* only: مثبطاً لانكليوزيدياً جديداً لإنزيم الانتساخ العكسي لفيروس الإيدز.

It is worth noting here that *nonnucleoside* is translated into a compound word by adding the word لا [non] to the borrowed word *nucleoside*. The Cairo Language Academy allows the translation of the prefixes *a-* and *an-* that denote negation by combining لا [no/not] with a noun to form one word, provided that the cadence of the term created is harmonious with Arabic sounds; e.g. asymmetrical لاتماثلي (*Majallat al-'Uluum* 1995: 11). In other words, لا [no/not] is chosen to work as an equivalent prefix. This ruling is followed here even though the ST term does not use the cited prefixes (*a-* or *an-*). Using this technique, however, creates a problem: as the second part of the compound is borrowed, and because the two components are presented as one word, there is a possibility that readers might think that the whole word is borrowed, i.e. they might not recognize لا [non] as the familiar Arabic word. Since compounding is not normally used in Arabic, hyphenation is not used to separate the two words, either.

There are also general differences between any two language systems regarding parts of speech and their functions in each language. For example, the way English expresses tense, mode, modality and voice differs in many respects from Arabic. Analysis reveals that, in some instances, unnecessary translation loss occurs as a

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consequence of the translator's remaining too faithful to the SL grammatical construc-
tions and failing to take such differences into consideration.

Example:

ST: Proteins, after all, carry out most of the work in the body, and an understanding of
how they behave, the press releases say, should translate into a font of ideas for
curing all manner of ills.

TT: وبغض النظر عن الاعتبارات الأخرى فإن البروتينات تقوم بمعظم الوظائف في الجسم، وإن فهم آلية سلوكها ‒ كما
نشرت وسائل الإعلام‒ يجب أن يترجم إلى ينبوع أفكار يفيد في شفاء جميع أنواع الأمراض.

BT: Regardless of other considerations proteins do most of the functions in the body,
and understanding the mechanism of their behaviour – as media tools [have]
published- must be translated to a spring [of] ideas [which] benefits in curing all
types of diseases.

While the modal *should* in the ST indicates logical necessity, its equivalent in the TT
indicates obligation. Moreover, *should* is less categorical than *must* in the degree of
both obligation and logical necessity that it indicates (cf. Quirk/Greenbaum 1973: 54-
56). The author is obviously trying to cast some doubt on the conclusion made, which
is also indicated by the parenthetical clause *the press releases say*. To make up for the
lack of an equivalent of *should* in Arabic, the translator could use a construction of the
verb ينبغي [ought] that indicates logical necessity rather than obligation: ينبغي له [ought
for it].

On the sentential level, the most important features to which the translator must
pay attention in this genre are punctuation and information structure. With respect to
punctuation, the TTs successfully adapt any differences in the usage of some
punctuation marks to target language conventions. As for information structure, the
phenomena of theme-rheme and main-subordinate structures are important features
that have implications for connotative meaning and the cogency of the text. Analysis of
the introductions in the sample texts shows that the TTs tend to follow the structure of
the STs too closely, which often results in instances of unnecessary loss when
information is restructured in the TTs.

Example:

ST: HIV and these forms of hepatitis will surely remain a main focus of investigation
for some time.

TT: وهذان النمطان من التهاب الكبد أهدافاً رئيسية HIVوبالتأكيد سيبقى لبعض الوقت الفيروس
للبحوث.

BT: Certainly will-remain for some time virus HIV and these two forms of hepatitis
main aims for research

Bringing *for some time* to the theme position (normal sentence structure in Arabic is
verb-subject-object) means that the least predictable information in the ST is treated
as the most predictable information in the TT, which affects the overall meaning of the
sentence.

This level is closely related to the discourse level and its main features of cohesion
and coherence. No translation problems related to these features are specific to this
genre. Analysis shows instances where change of cohesion markers and sentence
restructuring are required. The loss is usually caused by keeping too closely to the

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surface structure of the STs without taking into consideration target language conventions in respect of the textual realization of cohesion and coherence.

> Example:
>
> ST: It is a remarkable fact that we go about our daily lives generally unaware that less than 1 percent of each image is received and processed at high resolution. We are largely oblivious to this design feature…
>
> TT: ثمة حقيقة جديرة بالملاحظة، وهي أننا نمضي حياتنا اليومية غير مدركين أن أقل من 1% من كل صورة يتم استقباله ومعالجته بميز عال. إننا غافلون إلى حد كبير عن هذا الجانب من التصميم
>
> BT: There [is] a fact deserving notice, and it [is] that we spend our daily lives unaware that less than 1% of every image is received and processed in high resolution. We [are] inattentive to a large extent to this side of the design

In the TT, the anaphoric reference in *this side of the design* leaves the reader wondering which design is being referred to. It could be explicated by adding *of the eye* to modify *the design*.

On the intertextual level, there are no significant problems for the translator. This is partly because the articles include no allusions to other texts and any explicit references are easy to transfer to the TT, and partly because the genre conventions in both Arabic and English are very similar.

In conclusion, the hypothesis that no unnecessary translation loss occurs with respect to textual features in this filter in any of the analyzed TTs of the genre has been proven to be false. Several instances of unnecessary loss have been detected on the different levels in this filter. In many instances, the methods used were ST-biased and caused the TTs to sound unidiomatic, which can hinder readability, an important feature of popular medical articles if they are to fulfill their functions of being informative as well as interesting to the reader.

5.5   Varietal Filter

The most significant variable to be discussed in relation to the varietal filter in PSFAs is register. Variations in register with relation to technical terms and genre have already been discussed above. As for the social register, popular science articles are typically characterized by a neutral style, which is successfully reproduced in the TTs. The production of tonal register in the TTs, however, involves some inevitable translation loss as well as some unnecessary loss. PSFAs in general tend to be less formal than academic papers in scientific journals, and complex or unfamiliar technical terms or concepts are often explained. Due to an intrinsic formality in Standard Arabic, a translation loss on this level is inevitable. Nonetheless, examples have been found where an added tone of formality is introduced to the TTs, in part, through their choice of vocabulary. For example, the TT renders *women fearful about breast cancer* as النساء المتوجسات خيفة من سرطان الثدي [women harbouring fear of breast cancer]. The equivalent chosen for *fearful* is a dated, literary expression which unnecessarily enhances the formal tone of the text.

In other words, the hypothesis proposed is false but, overall, the loss is minor as there are only three examples of such loss in the entire texts. These unnecessary

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additions are mainly caused by attempts to keep closely to the STs on other levels of the text, such as the semantic or the grammatical. From the above, we can conclude that register can pose a problem for translators of PSFAs, which the translator must be aware of in order to avoid any unnecessary translation losses and to try to compensate for those that are inevitable.

6   Conclusion

To revisit the questions posed in the introduction, analysis has shown that there are a number of translation problems that PSFAs pose for the translator on various levels. On the cultural level, the main problems are idioms and names of people, institutions, and projects. The techniques used by Arab translators for idioms vary from literal translation to adaptation, whereas transliteration and literal translation are used in the translation of names. On the semantic level, the main problem specific to this genre is the translation of scientific terms, which are often rendered using borrowing, literal translation or a mixture of both. On the formal level, the main problem relates to compound structures and nominalizations, which are rendered using TL grammatical conventions, giving due consideration to the fact that Arabic does not normally use compounding. Finally, on the varietal level, register could pose a translation problem in this genre, especially given the variation of technical terms, which the translators of this corpus solve by citing all variations possible, including the ST English term. There are a number of other problems detected on all levels, such as on the sentential and discourse levels, but these problems occur in any text and are not specific to the genre.

As for the adequacy of the methods used in translation, the results of textual analysis show that unnecessary translation loss of features with high textual relevance occurs without compensation in the semantic and formal filters. This loss indicates a loss in the genre filter as well, because all choices are assessed in relation to the needs of the genre. In other words, the hypotheses related to the semantic and formal filters are proved false. By implication, the main hypothesis that all popular science feature articles translated into Arabic by reputable publishers are adequate translations is also false.

A number of factors that influence translation quality emerged from the findings of the textual analysis. The first is the prevalent method of literal translation used by Arab translators. More often than not, an awkward TT results from the translator's policy of excessive adherence to the ST until a problem necessitates adoption of a communica-tive translation strategy. The second factor is the translator's training background. The translators of the corpus were specialists, and the samples were accurate with respect to the translation of technical denotations. On the other hand, the loss in the formal filter, particularly at the discourse level including cohesion and coherence, was high. These results indicate that the lack of formal training in language and translation may be a factor that directs specialist translators to focus only on factual accuracy. The third factor is the publishers' policies on translation. The publisher of the sample texts here is a not-for-profit institute. Each ST is translated by an expert in the field, and

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then the TT is revised by another expert in the field. The translators are required to abide by certain standards of transliteration, terminology and other stylistic matters, which ensures consistency but also makes the TTs closer in style to scientific papers. In their instructions, these publishers concentrate on factual accuracy, which is also evident from the analysis. However, they provide linguistic editing only on a sentence-by-sentence basis and only in respect of grammar, which explains why the loss in cohesion is not corrected, despite the editing. To conclude, the translation quality of scientific popular genres is affected by several textual and extra-textual factors that should be taken into consideration by translators and translation training programmes. More understanding of what makes a translation better is necessary to improve the important role that translation has in contributing to the dissemination of scientific knowledge among people of all backgrounds.

References

Abu-Ssaydeh, Abdul-Fattah (2004): "Translation of English Idioms into Arabic." *Babel* 50 [2]: 114-131

Baker, Mona (1992): *In Other Words. A Coursebook on Translation*. London: Routledge

Bassnett-McGuire, Susan (1991): *Translation Studies*. Revised ed. London: Routledge

Bhatia, Vijay Kumar (1993): *Analysing Genre: Language Use in Professional Settings*. London: Longman

Dickins, James; Sandor Hervey, Ian Higgins (2002): *Thinking Arabic Translation. A Course in Translation Method: Arabic to English*. London: Routledge

Fraser, Janet (1996): "The Translator Investigated." *The Translator* 2 [1]: 65-79

Full History. (2003). – http://www.sciam.com/page.cfm?section=history (19 December 2003)

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Hervey, Sandor; Ian Higgins (1992): *Thinking Translation. A Course in Translation Method: French to English*. London: Routledge

Hitti, Yusuf K.; Ahmad Al-Khatib (2000): *Hitti's New Medical Dictionary. English-Arabic.* Beirut: Librairie du Liban

Kußmaul, Paul (1995): *Training the Translator*. Amsterdam/Philadelphia: Benjamins

Majallat al-'uluum (1995): إرشادات عامة لمترجمي ومراجعي مقالات مجلة العلوم [General Guidelines for the Translators and Revisers of *Majallat al-'uluum's* Articles] [Brochure]. Kuwait: Author

Munday, Jeremy (2001): *Introducing Translation Studies. Theories and Applications*. London: Routledge

Newmark, Peter (1981): *Approaches to Translation*. Oxford: Pergamon Press

Nida, Eugene (1964): *Toward a Science of Translating*. Leiden: Brill

Nord, Christiane (1991): "Scopos, Loyalty and Translational Conventions." *Target* 3 [1]: 91-109

Nord, Christiane (1997): *Translating as a Purposeful Activity. Functionalist Approaches Explained*. Manchester: St. Jerome

Pym, Anthony (1992): *Translation and Text Transfer*. Frankfurt/Main: Lang

Quirk, Randolph; Sidney Greenbaum (1973): *A University Grammar of English*. London: Longman

Reiß, Katharina; Hans J. Vermeer (1984): *Grundlegung einer allgemeinen Translationstheorie*. Tübingen: Niemeyer

Sharaf, Abul al-Aziz (1980): اللغة الإعلامية. علم الإعلام اللغوي [Journalistic Language. The Science of Lingual Journalism]. Cairo: al-Markaz al-Thaqaafii al-Jaami'ii

Sharkas, Hala (2005): Genre and Translation Quality: Perspectives on Quality Assessment of English-Arabic Translations of Popular Science Genres. Unpublished PhD thesis. Portsmouth: Portsmouth University

[Švejcer] Shveitser, Alexander (1993): "Equivalence and Adequacy." P. Zlateva (ed. & trans.): *Translation as Social Action. Russian and Bulgarian Perspectives*. London: Routledge, 47-56

Trimble, Louis (1985): *English for Science and Technology. A Discourse Approach*. Cambridge: Cambridge University Press

Vermeer, Hans J. (1989): "Skopos and Commission in Translational Action." Andrew Chesterman (ed.): *Readings in Translation*. Helsinki: Finn Lectura, 173-187

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Haseltine, William A. (2001, November): "Beyond Chicken Soup." *Scientific American* 285 [5]: 56-63

Haseltine, William A (2002, May/June): "جيل جديد من العقاقير المضادة للفيروسات" [A New Generation of Antiviral Drugs] (H. Rizq; M. Shaahiin, Trans.). *Majallat al-'uluum* 18 [5/6]: 30-37

Libby, Peter (2002, May): "Atherosclerosis: the new view." *Scientific American* 286 [5]: 47-54

Libby, Peter (2003, June/July): "التصلب العصيدي (التصلب الشرياني): النظرة الجديدة" [Atherosclerosis (Arteriosclerosis): the New View] (A. Takriitii, Trans.). *Majallat al-'uluum* 19 [6/7]: 46-54

Maeder, Thomas (2002, July): "Sweet Medicine." *Scientific American* 287 [1]: 40-8

Maeder, Thomas (2003, June/July): "أدوية حلوة" [Sweet Medicines] (W. Zarzuur; A. al-Kafraawii, Trans.). *Majallat al-'uluum* 19 [7/6]: 40-45 & 55

Rosen, Clifford J. (2003, March): "Restoring Aging Bones." *Scientific American* 288 [3]: 71-78

Rosen, Clifford J. (2003, October): "ترميم العظام الهرمة" [Restoring Aged Bones] (A. Takriitii; A. al-Kafraawii, Trans.). *Majallat al-'uluum* 19 [10]: 46-53

Sun, Hui; Nathans, Jeremy (2001, October): "The Challenge of Macular Degeneration." *Scientific American* 285 [4]: 68-75

Hala Sharkas
Translation Quality Assessment of Popular Science Articles:
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Sun, Hui; Nathans, Jeremy (2003, January): "تحدي التنكس البقعي" [The Challenge of Macular Degeneration] (S. Yaḥyaawii; A. Ḥilmii, Trans.). *Majallat al-ʻuluum* 19 [1]: 20-27

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