An-Najah National University

Faculty of Graduate Studies

Terminological Inconsistency in Medical Translation from English into Arabic

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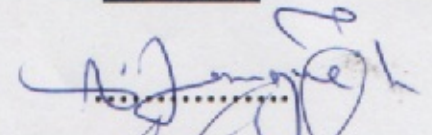
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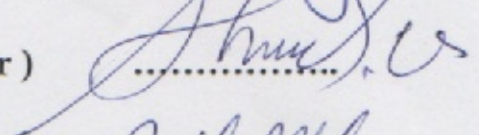
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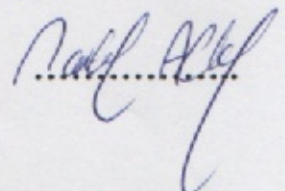
This thesis is dedicated to the dearest people in my life, my father, my mother, my sister Abeer, and my two brothers, Ahmad and Khaled for their constant encouragement, support and patience.

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إقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Terminological Inconsistency in Medical Translation from English into Arabic

غياب الثبات في استخدام المصطلحات الطبية عند الترجمة من الانجليزية إلى العربية

أقر بأن ما اشتملت عليه هذه الرسالة إنما في نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل أية درجة علمية أو بحث علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name: **اسم الطالب:**

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Date: **التاريخ:**

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List of abbreviations

SL   **Source Language**

TL   **Target Language**

UMD   **Unified Medical Dictionary**

DPI   **Drug Package Insert**

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Abstract

This study tackles the problem of terminological inconsistency in translating English medical terms into Arabic, which is defined as the lack of consistency in the selection of terms or assigning different translations to the same SL terms throughout a text or across relevant texts. The purpose of the present study is to display how factors of terms usability and circulations, the type of the target audience and the context of translation have an important role in lessening terminological inconsistency to a large extent, and, hence, they should be taken into account when determining which type of equivalence should be used to serve as a translation for a single English medical term.

The representative data were collected from seven Arabic and translated medical books, two medical dictionaries of Hitti's and the Unified Medical Dictionary (UMD) and 35 drug package inserts (DPIs). Such data sources were chosen in an attempt to compare between the most successful type of translational equivalence in specialized vs. non-specialized contexts. Data collection also involved interviews with doctors in which valuable insights about the medical translation process from English into Arabic in general were obtained, and telephone interviews

with Palestinian pharmaceutical companies in which a full description of the process of translating DPIs into Arabic was provided. Also, a questionnaire, targeting a sample of 100 Arab doctors in Nablus and Ramallah districts, was developed to measure the circulation of different types of equivalence for English medical terms in both contexts, i.e. communication among doctors and medical staff vs. doctor-patient interaction. The questionnaire also included an open question to give sample population the chance to present their attitudes toward translating medical terms into Arabic.

The study has shown that there were five types of terminological inconsistency in relation to the three different types of equivalence, i.e. transliterated, arabized, and descriptive equivalences. It has been also found that the most used type of equivalence in specialized contexts was the transliterated equivalence while descriptive translations reported the highest rate of circulation in non-specialized contexts. Arabization reported low rates of use in both contexts. The study assessed the validity of the fourth and latest edition of UMD and has concluded and emphasized its usefulness as it serves as the closest official Arabic medical resource to everyday medical practices. The study has also concluded that approaches of medical translation into Arabic should not be prescriptive but rather descriptive and complying with the Arabic language structure if terminological inconsistency in medical Arabic is to be overcome.

Chapter One

1.1 Introduction

"Translation is often regarded as a project for transferring the meaning from one language into another"**(Farghal &Shunnaq, 1999: 2)**. Translation in all its forms has always been used as a means of exchanging ideas in different fields and as a means of communication between different cultures. Medical translation whether for specialized or non-specialized types of audience is one prominent area. Within the field of medical translation fall different types of pharmaceutical and scientific translation that deal with medical topics **(Gonzales, 2007: 49)**. Thus, medical translation is one of the growing areas of translation that includes a number of genres ranging from less specialized forms of health information brochures and drug package inserts (DPIs) to the more specialized forms of medical books and specialized articles in medical journals. The medical translator deals with what is called medical language which differs from everyday language in the specificity of its terminology.

Due to the huge achievements and the vast developments the world is witnessing in the scientific fields in general and in the medical branches in particular, hundreds of new words are being coined in this field. Consequently, the need to transfer such achievements into other languages is rather urgent. Moreover, since the English-speaking countries are taking the lead in the medical fields, the major part of the medical jargon is of

English origins, or, for the most part, of Greco- Latin origins that has been adopted by and become overtime an inherent part of English language.

Consequently, medical English has been translated on an international scale to different languages among which Arabic rises as a good and challenging example. Although Arabic was once the language of medicine, it now struggles to keep up with the frontier of medical sciences through translation, and to that end different institutions have been established throughout the Arab world, most notably the Arab Academies. However, in spite of the immense efforts exerted by the Arab Academies in this field, medical Arabic still suffers from inconsistency, and in some instances, contradictions appear in translating medical terms.

This thesis sheds some light on the stages of the development of medical Arabic and the processes of term creation conducted by the Arab Academies. This review is deemed important to lay a theoretical ground for the present investigation. However, the main focus of the present study is on the different translation procedures that are used in translating medical books and drug package inserts (DPIs), and that have resulted in different types of equivalence, the matter that has led to inconsistency in the translators' lexical choices. Such phenomenon is henceforth called terminological inconsistency. Medical Arabic, making a prominent type of technical Arabic, is thus examined in relation to the following types of equivalence investigated through a comparative analysis in relation to

specialized and non-specialized contexts. The three types of equivalence are:

1. Descriptive equivalence
2. Transliterated equivalence
3. Arabized equivalence

The terminological inconsistency results from the unjustified alteration between the aforementioned three types of equivalence or among them.

Seven prominent medical books, two medical dictionaries, and 35 DIPs have been investigated to serve as two different types of context from which the most problematic terms in relation to inconsistency and context-oriented types of equivalence have been collected.

These books are:

1. سنل علم التشريح السريري الرأس والعنق عربي –انجليزي .
2. سنل علم التشريح السريري الصدر والظهر عربي –انجليزي .
3. سنل علم التشريح السريري الطرف العلوي والسفلي عربي –انجليزي .
4. التشريح ووظائف الأعضاء–مقرر التعليم الذاتي .
5. الأساسيات في تشريح الإنسان .
6. دليل المصطلحات الطبية .
7. مراجعة مصورة لـِ : علم الأدوية .

Upon examining the above mentioned sources, the researcher presents a simple outline for the structure of medical books and DPIs that are translated into Arabic. Also, the translation procedures followed in translating such materials into Arabic are discussed. More importantly, five main types of terminological inconsistency have been identified in relation to the three main types of translational equivalence:

1.   Arabized vs. Descriptive equivalence;

2.   Arabized vs. Transliterated equivalence;

3.   Transliterated vs. Descriptive equivalence;

4.   Arabized vs. Transliterated vs. Descriptive equivalence;

5.   And inconsistency in Target Language Equivalence.

The present study attempts to find out which type of equivalence is more widely used or alternatively accepted to be used as a first step to cease terminological inconsistency. This in turn helps in achieving the ultimate goal of officially recognizing Arabic as the medium of instruction in medical colleges in the pan-Arab area.

1.2 Statement of the Problem

Fishback has argued that translating medicine is regarded as "the most universal and oldest field of scientific translation because of the homogenous ubiquity of the human body" (**as cited in Pilegaard, 1997: 160**). Medical translation as a branch of technical translation needs to enjoy a high degree of consistency in transferring the source text to the target

language. For various reasons, medical Arabic nowadays suffers from terminological inconsistency, the matter that frustrates attempts aimed at making Arabic language the official medium of instruction in medical colleges throughout the Arab world. Having different types of equivalence and different medical Arabic terms for the same foreign English medical term might seem inevitable due to different factors. For example, having different source languages (English and French) from which medical Arabic seeks the largest portion of its corpora, different bodies of translation that work individually, and multiple codified lexical resources are considered among major causes of multiplicity of terms that is reflected in terminological inconsistency.

However, terminological inconsistency results mainly from the absence of clear-cut criteria upon which translators should make their choices when conducting translation in genuine contexts of use as in medical books and DPIs as opposed to the abstract context-free realm of dictionaries. Thus, important criteria of circulation and usability of terms are not considered in medical translation into Arabic to a large extent. Also, the communicative function of medical translation has been consequently neglected, and this is further evidenced in the fact that the type of the target audience and its level of professionalism and education usually go unheeded in the translation process.

1.3 Purpose of the study

The present study is expected to answer the following questions as the main goals of this thesis.

1. What is the structure of Arabic medical books and DPIs from a translational point of view?

2. What are the translation procedures that are followed in translating medical books and DPIs into Arabic?

3. What type of translational equivalence is mostly used in specialized and non-specialized medical contexts?

4. To what extent can usability and circulation of a translational equivalence in relation to the context of use and the type of the target audience help in solving the problem of terminological inconsistency?

5. What are the doctors' attitudes and views on the medical translation into Arabic in general?

6. To what extent can Arabic medical dictionaries, particularly UMD, serve to build a sufficient corpus of Medical Arabic?

1.4 Significance of the Study

The significance of this study can be described in a two-folded sense. To the best of the researcher's knowledge, there is a paucity of research on translation of medical terms from English into Arabic, and the literature on medical translation into Arabic in general is meager indeed. The

significance of the present study evolves first from its attempt to identify the most recognized type of translational equivalence in medical Arabic in both specialized and non- specialized contexts as a first step toward achieving terminological consistency. Vasconcellos **(as cited in Roger, 2008: 104)** has pointed out that good technical writing is manifested in high degrees of consistency in the selection of terms. This feature usually contributes to the superiority of machine translation over human translation. The second point of significance of this study lies in the fact that though this study adopts a descriptive methodology, it follows a problem-solving approach in addressing medical translation into Arabic. In fact, the meager studies that have addressed medical translation into Arabic have been by and large dedicated to describing the obstacles facing translators and the weaknesses in the process of medical translation into Arabic in general, offering theoretical solutions or alternatively offering practical solutions selectively rather than quantitatively. This study, however, is based on a quantitative sample and provides tangible solutions and practical suggestions for translators to mind during the translation process. **(Newmark 1979: 1407)** has argued that "the heart of medical translation problem, as far as terminology alone is concerned", is " the search for contemporary forward-looking usage". He has also stressed the point that for the entire highly specialized language area of medical terminology, the translator should seek the recognized equivalent.

In an attempt to obtain a preliminary insight into the topic of this study, a pilot study was conducted in which 75 medical terms which are translated inconsistently in medical books, DPIs, or in both, were selected. The terms were then distributed to 20 doctors that were chosen randomly to get their feedback on whether the selected terms are all used in practical medicine and are familiar to doctors rather than being mere bookish terms. Doctors were asked to choose the type of equivalence they would use in specialized contexts when they communicate with other doctors and medical students and the type of equivalence they would use in the non-specialized context of doctor-patient interaction. The results entailed excluding five terms on the basis of extremely infrequent occurrences in everyday medicine. The results also indicated a systematic pattern of using transliteration and descriptive translation over arabization.

Based on the findings of the pilot study, the researcher's observations indicate that terminological inconsistency in its large part can be solved if significant factors of circulation, context of use, and the type of the target audience are taken into account during the translation process. Moreover, doctors explained that Arabic language is not used on a regular basis among medical staff while it is heavily used with patients. Also, responding doctors reported zero usability for some translations, while other translations were approved almost unanimously. In an attempt to solve the terminological inconsistency that has exhausted medical Arabic, inconsistent translation of medical terms need to be studied to

come up with reasonably well defined criteria of choosing one translation over another.

1.5 Limitations of the Study

The findings and conclusions of this study should be limited to the scope of the present study to a number of limitations.

1. Although the medical terms investigated in this study are collected from anatomical and pharmacological books, the selection process has been relatively random from a medical point of view. In other words, the selected terms cannot be fully categorized under anatomy, pharmacology, pathology, or any other medical area. Rather, terms have been selected and categorized under different types of equivalence from a translational point of view. Thus, generalizations cannot be made in accordance with medical considerations.

2. The number of responding doctors who have received their medical education or training in Arabic has been low as only few Palestinians could easily pursue their medical education in countries where Arabic serves as the means of medical education such as Syria.

3. Although the number 100 is deemed statistically adequate to present systematic patterns of terminological use, a larger number would have yielded more valuable insights into the study.

4. The sample of the study is general and random. In other words, variables of respondents' specialty, gender, years of experience, or exact place of

work were not considered in the scope of the present study since previous studies have shown that such variables did not show any significant relationships with doctors' attitudes toward medical translation into Arabic in general.

5. The study focuses on Ramallah and Nablus districts only.

6. The study focuses on terms only; structure and stylistics are not considered.

1.6 Review of Related Literature

The literature on medicine in general is abundant. There is hardly any culture without medical literature. Medical translation is one of the most active types of professional translation **(Montalt, 2011).** This can be a prior to the universality of the subject and the necessity of passing knowledge from one nation to another. However, medical translation has not received the due attention in the scope of translation studies, and it is only recently that serious attempts to contribute some valuable insights into medical translation have taken place (82-83). Similarly, the literature on medical translation into Arabic is yet to be fully built, and it has been an issue of debate by many researchers, too. As medical Arabic is not used on a large scale, it continues to interest those who are solely concerned with Arabic language for the sake of the language in the absence of its circulation in the Arab community. However, there are a number of leading studies upon which the present study can build its basis. For instance, Sieny (1985) discussed the process of terminology production, co-ordination and

dissemination and outlined the problems facing the process of arabizing scientific terminology in general. He explained that there are many official and unofficial agencies involved in producing Arabic scientific terminology, the matter that leads to the common problem of multiplicity of terms. The author further explained that attempts were made to face this phenomenon through the establishment of agencies of standardization and coordination. He concluded that in practice though, lack of coordination and unification still seems to make the prominent feature of such attempts.(155-159)

Halloush (2000) outlined the extent to which arabized medical terms in the field of general surgery were acceptable and used as a means of medical communication among doctors in Jordan. The author elaborated on term planning through which terms are created for any language. She stated that there was a poor acceptability of arabized terms among Arab doctors regardless of their degree of specialty, gender, and center of work. She concluded by recommending a revision of the arabization process and, if necessary, replacing it by a more efficient one. Also, she emphasized the necessity of standardization as a prerequisite of acceptability of arabized terms.(p.54).

Another pioneer study was conducted by Nassar (2002) in which the author investigated the problem of lexical and non-lexical meaning loss in medical translation between English and Arabic. He explained through individual illustrative examples collected from drug leaflets and one

medical journal that the loss in lexical meaning results from problems of mislexicalization, lack of standardization, and even lexical over standardization. Non-lexical loss in meaning, on the other hand, emanated from grammatical loss in meaning represented in the random placement of syntactic entities in sentences and structural ambiguity and from textual loss resulted, for example, from differences in punctuation and paragraphing. The author concluded that meaning loss is either intrinsic, i.e. related to inherent mismatches between English and Arabic as two different languages, or extrinsic, i.e. related to factors of domination of English over Arabic in educational institutions which would debar the latter from development, familiarity and circulation. The author recommended the establishment of a highly specialized committee versed in medicine and language to follow on new medical terms. He also recommended that Arab medical specialists have easy access to medical Arabic to ensure circulation for translated medical materials, and that Arabs should conduct more contrastive research studies about the experience of other languages of the Far East that have succeeded in expressing sciences in native languages to benefit from them.(91-93).

Romani (n.d.) scrutinized the contemporary status of medical Arabic through a comprehensive review of the stages of medical Arabic starting from classical scientific medicine to contemporary western-style medicine. He explained that there is a need to build a representative corpus of Arabic medical texts. The author commented that although Arabic medical

dictionaries exist indeed, such dictionaries do not contribute a large benefit to the contemporary medicine as they do not agree in their lexical choices and are normalized by the guidelines of the academies rather than by actual use (p.95) . He concluded by highlighting the necessity of including in the representative medical Arabic corpora contemporary medical texts such as patient information leaflets, excerpts from medical textbooks used in Arab countries such as Syria and also websites of hospitals and medical centers in Arabic countries, where it is possible to find terms that are linguistically closer to everyday practice.(p.103).

An equally significant study touching upon problems of inconsistency in Arabic technical terminology was also conducted by Seiny (1987). The author attributed the confusion in Arabic technical terminology to both linguistic and administrative factors. The linguistic factors include: the rich nature of Arabic language which would result in a large number of synonyms for the same concept; the different procedures in coining Arabic technical terms such as finding a term from Arabic scientific heritage, or translating foreign terms using different translation procedures; and the existence of two source languages, English and French. The administrative factors include the absence of an official terminological body and the slow progress of official agencies in producing Arabic term for thousands of new concepts(169-171). Listing the terminology agencies that are at work, he concluded that the efforts of such agencies can be

culminated by success only if high levels of cooperation, coordination, and systematic dissemination are achieved.

By the same token, problems of terminological inconsistency have been reported to exhaust other nations in their attempts to accommodate the increasingly rapid English sciences into native languages. Quah (1999) studied the standardization and modernization of Malay language in spelling patterns and scientific terminology focusing the attention on the English affixes. He explained that the means to achieve standardization involved accepting international terms of Greco- Latin origins to make it easier for readers to read foreign languages, and that the use of such Greco-Latin terms would mean the universality in these terms with other languages. Modernization of the language on the other hand, meant adopting a variety of translation methods such as using existing words, borrowing form English and foreign languages, translating concepts with Malay words that carry the same idea, coining terms and reviving archaic words to serve as equivalents for foreign terms(606-607). However, he clarified that standardization of scientific terminology still makes the most difficult problem, and that without linguistic procedures, many standardized terms are not possibly achieved. He concluded that what causes rigidity in language growth is the infrequent updates of terminology lists and guidelines.

In 1997, Haddad studied translation of medical terms into Arabic and examined the low acceptability of arabized terms among medical students

in Jordan. The writer further explained that most of the translated medical terms are odd and unfamiliar as translators depend on Arabic dictionaries which also include many alternatives for a single term while transliterated terms seem more adequate. However, she concluded that due to the unfamiliarity of translated terms and the unnatural use of transliteration, descriptive translation should be put in use. The author also recommended standardizing medical terms as a necessary procedure in medical books(50-52). A more related study that addressed the reasons of inconsistency of terms in Arabic technical translation was conducted by Al-Quran (2011). The author explored constraints on technical Arabic that have led to introducing different types of equivalence ranging from single-word arabizations- whether through free standing words or composites (naht), to paraphrases, and loans. The fact that most of the arabized terms were unfamiliar led to the alternative use of paraphrases. Yet, issues of lack of economy and precision disapproved the usability of paraphrases in favor of loan words and transliterations which were in turn rejected by Arab purists on the grounds that they were of non-Arabic origins. He concluded that " What is needed, instead, is a joint effort by the linguists to coordinate their efforts across the Arab world to reduce the extent of confusion and chaos in the use of the Arabic terms used as equivalent for their foreign counterparts" (p.449). He also added that the profusion of synonyms characterizes the chaotic coining of terms which in turn leads to terminological inconsistencies. He concluded that the individual trends especially in coining foreign technical and scientific terms should cease, as

precision in meaning is more valuable than meeting mere linguistic considerations.

Reviewing the findings and recommendations of previous studies, the researcher intends to add new insights into an already existing problem of having many equivalents for the same foreign term yet form a completely novel point of view. All of the previous studies have recommended standardization as a step toward the development of the language. Yet, standardization can not be achieved unless the problem of terminological inconsistency is first solved. In other words, the present study investigates the usability of such many equivalences as a criterion for consistency and consequently standardization. It attempts to solve the terminological inconsistency by utilizing the extra linguistic factors of the context of use and the type of the target audience.

1.7 Structure of the Study

Chapter two incorporates a detailed review of the different features of the medical language. Lexical and syntactic features of English and Arabic medical languages are explained. Chapter three describes the methodology adopted in the present study. It also lays the theoretical frame of the study by exploring the approaches of medical translation and including basic definitions of key concepts like equivalence, types of equivalence and terminological inconsistency. Chapter four describes medical books and DPIs structure and translation procedures.

Chapter five incorporates the findings and results of this study. It scrutinizes the type of equivalence that should be used in specialized vs. non- specialized contexts and assesses the validity of the Unified Medical Dictionary (UMD). Finally, chapter six presents a summary of the results and recommendations.

Chapter Two
Features of Medical Language

2.1 Introduction

Herget and Alegre (2009) have explained that medical language belongs to the languages for special purposes which differ from everyday language in the specificity of their terminology, and the fact that they are usually used in communication between professionals and in specialized contexts. These languages for special purposes are part of the language system and can be classified in different ways. However, since these languages are in constant development and overlap with everyday language to some extent, such classification appears to be difficult. **(Haddad 1997: 9-10)** has defined medical language more specifically as a subcategory of the language of science which is characterized by the use of the present tenses, abbreviations and compounds. Precision and objectivity are highly valued in the language of science. Another related classification of medical language is made by **(Newmark 1988: 151- 153)** who has described medical language as a subcategory of technical language. Technical language is in general distinguished from other varieties of language by terminology. Moreover, the style of technical language is usually non-emotive, and free from connotations and sound effects if the text is to be well written. Technical language, especially in the case of English language, is characterized by the use of passives, impersonality, empty verbs, third persons, and nominalizations. In terms of medical vocabulary,

Newmark (1988: 153) suggests three levels of technical language as follows:

"1. Academic: This includes transferred Latin and Greek words associated with academic papers, e.g. 'phlegmasia alba dolens'

2. Professional: Formal terms that are used by experts, e.g. 'epedemic parotitis', 'tetanus'.

3. Popular: Layman vocabulary, which may include familiar alternative terms, e.g., 'chicken pox'."

Loning proposes a more comprehensive typology which differentiates four main levels according to the degree of specialization among the communicating partners and the aim of the text in medical contexts:

1. Professional - professional (doctor - doctor). At this level the aim is to transfer specialized knowledge in the style of scientific texts as in summary reports.

2. Professional - semi-professional (doctor - medical student/health personnel). At this level the aim is to transfer basic knowledge in an instructional style as in handbooks and course books.

3. Professional - non-professional (doctor - patient). At this level the aim is to educate non professionals as in writings on patient education and instruction.

4. Non-professional - non-professional (journalist - reader). At this level the aim is to turn problems public in the style of popular science texts as in articles, and magazines of general interest (as cited in Herget & Alegre, 2009).

Loning's typology is more detailed and therefore serves as a basis for classifications included in this thesis since the arching aim of this thesis is to compare the different translation procedures used in translating medical texts in different contexts for different types of audience. Bearing in mind that the present study investigates medical books and DPIs, its main focus will be on the second and third levels of Loning's typology. However, in the case of medical Arabic, and because it is not used frequently among doctors as it will be explained later, Arabic medical books target not only the semi-professional audience of medical students but also the professional doctors who in some cases need to learn about medical Arabic, e.g. when writing Arabic medical reports. This is evidenced in the fact that the prefaces of some of the books investigated for this study indicate the usability of such books to both medical students and doctors equally. Consequently, the differentiation between the two levels of professionalism (professional, semi-professional) is deemed unimportant

for the present study, and thus they are merged together to be studied in the sense of professional versus non-professional contexts.

The next few sections present an overview of some of the main features of medical English and Arabic at the level of vocabulary and syntax. Medicine, as many other fields, has its own specific language, and the most obvious feature of medical language is medical jargon **(Krulj, Prodanovic & Trbojevic, 2011: 170).** Hence, this thesis focuses mainly on the translation of medical jargon -in the different contexts of medical books, and drug package inserts- as it makes the most prominent feature that distinguishes medical language not only as being a specialized language as opposed to the general language, but also as being different from other types of specialized categories of the language of science.

2.2 The General Features of English Medical Language

It is well known that English is the leading language of medical sciences. To doctors, communication in English has been indispensable throughout the history of medicine **(Krulj et al., 2011: 170)**. Thus, it is hard to fully understand the nature of medical language without having some access to the features of English medical language. Sections 2.2.1, 2.2.3, 2.4.1, and 2.4.2 describe such characteristic features of English medical language and the characteristic features of Arabic medical language to gain some insight into the nature of the two languages concerned in the present inquiry.

2.2.1 Lexical Features

Medical English distinguishes itself by the massive use of pure medical words **(Yan, 201: 235)**. English medical terminology can be divided into the following subcategories.

1. Greco-Latin terms

As long as English medical terminology is concerned, the first thing that comes to mind is the terms of Greco-Latin origins as they comprise the substantial part of the overall lexical body of medical knowledge. Medical English is rich with morphologically complex words which are made up of Latin or Greek roots and affixes. Haddad (1997: 5-6) has classified the medical term groups in relation to Greco-Latin origins as follows:

1.Words using a prefix and a free root:

Prefix	Root	Example
Pre	mature	premature

2.Words using a root and a suffix:

Root	Suffix	Example
Bronch	-itis	Bronchitis

3.Words made up of two roots (compound words):

Root	Root	Example
Head	ache	Headache

4.Words using combining forms:

Combining forms are made up of a combining vowel plus the root **(Chabner, 2009: 3)**. For example, the word "Hemat/o/logy" is made up of

the root "hema" and the suffix "logy" with a combining vowel "o" that English Language has introduced to mark the different parts of the compound words (2009: 2).

5.Words using bound roots only:

Prefix	Suffix	Example
An-	- emia	Anemia

6.Words using a prefix, a root, and a suffix:

Prefix	Root	Suffix	Example
Peri-	card	-it is	pericarditis

Such words are called neo-classical compounds, and they are present in different areas of medical vocabulary including anatomy, diseases, and procedures **(Deleger, Namer & Zweigenbaume, 2009: 48).** Latin is the language of choice for anatomical nomenclature, whereas Greek is the language of choice for pathology **(Albin, 1999).** For example, there are two roots -Latin and Greek- for the word kidney and are used in different senses. The Latin root is REN- which is used with the suffix AL- to make up the anatomical word "pertaining to kidney". The Greek root is NEPHR- which describes an abnormal condition "Nephritis" or a procedure "Nephrectomy" where an inflammation of the kidney, and a surgical removal of the kidney are denoted respectively **(Chabner, 2009: 14)**. The meaning of a compound is often compositional in the sense that it is a combination –at least partially- of the meaning of its constituent parts. One interesting aspect of English medical Greco-Latin terms is that they

are transparent in that a medical student can identify the meaning of a word even though s/he has not encountered it before by simply recognizing the meaning of the roots, suffixes and prefixes of which that word is composed. For example, a long word such as "gastr/o/enter/o/logy" can be understood quite easily as the study of intestines and stomach, when it is divided up to gastr (a root means 'stomach'), enter (a root means 'intestines'), and logy (a suffix means 'study of').

Medical English either purely borrows Greco-Latin terms without any alternations as in phlegmasia alba dolens (a disease related to deep vein thrombosis), fascia (a sheet of connective tissue covering or binding together body structures) or, adapt them hence making them overtime an integral part of English language such as "pericardium" instead of the Greco-Latin "*perikardion"* which according to Merriam Webster online medical dictionary, refers to " the conical sac of serous membrane that encloses the heart and the roots of the great blood vessels of vertebrates".

2. Collocations: "A collocation consists of two or more words used in normal association with one another in a given language together to form one word group-   for example "benign" and "malignant" collocate with "tumour" **(Newmark, 1979:1406).**

3.   Abbreviations and Acronyms: Kasprowicz (2010) has defined abbreviations as shortened forms of words or phrases that are spelled variously according to the rules of different languages, e.g. MRI (Magnetic Resonance Image), CPR (Cardiopulmonary resuscitation),…etc. Acronyms on the other hand, are words created from a sequence of one to several

capitalized initial letters or syllables. The most vivid example of acronyms is AIDS (Acquired Immune Deficiency Syndrome). Other examples are REM (Rapid Eye Movement), SIDS (Sudden Infant Death Syndrome),..etc.

Medical English employs a great deal of abbreviations and acronyms. The popularity of such shortened forms in medical language is due to the historical tradition of the language of medicine, and the economy in space and time they provide **(Kasprowicz , 2010)**. Newmark (1979: 1405) has interestingly argued that one of the distinguishing lexical features of medical language is "the universal craze for creating acronyms (not just to seek fame, but often because the writer is too lazy to repeat a multi noun-compound)".

4. Eponyms: "A law, theory, theorem, hypothesis, principle, rule, formula, equation, disease, etc. named after a person is called an eponym" **(Kalyane & Kadam, 2002: 172)**. There are numerous eponyms in medical English e.g. Achilles tendon, Crohn disease, Cushing syndrome,..etc. Eponyms are used because they are a simpler way of describing complicated syndromes, procedures or diseases. There are also interesting trends in the spelling of eponyms. The traditional spelling pattern entailed that these terms be formed as possessives, indicating in somehow that the disease or procedure belonged the individual who was first to discover it, e.g. Crohn's disease. Nonetheless, spelling patterns have changed over the past few decades. There has been a tendency to omit the apostrophe -

Crohns disease- and, more recently, to eliminate the possessive altogether – Crohn disease- **(Hall, 2006: 1134)**.

5. Neologisms: Neologisms can be defined as "newly coined lexical units or existing lexical units that acquire a new sense" **(Newmark, 1988:140)**. As a consequence of the rapid development in medical fields and the largely increasing number of pharmacological discoveries, neologisms are constantly created. In medical English, neologisms are present mainly in the names of drugs which are being invented for the treatment of different diseases. Names of organisms, enzymes are just few examples of medical neologisms.

6. Blends: Blends are the new words that are formed from parts of other words. The blending process means joining the first part of a word with the final part of another word to eventually create one word **(Farghal, 2000: 45)**. One example of medical English blends is the word "caplet" which is taken from the two words "capsule" and "tablet" to refer to some kind of bills that is between capsules and tablets.

7. LGP Terms vs. LSP Terms: Within the field of English medicine, two types of language are differentiated by terminologists in relation to terms as LGP- language for general purposes-and LSP- Language for special purposes. LGP terms are everyday words that are accessible to all, and no special medical knowledge is needed to understand them, e.g. chest, kidney failure, stroke,…etc. LSP bound terms, on the other hand, are the technical

specialized terms that are not readily accessible to non-professionals. Terms as thorax, renal failure, cerebrovascular accident are the corresponding technical terms for the above mentioned LGP terms respectively **(Wiseman, 2000).**

2.2.2 Syntactic Features of English Medical Texts

At the sentence level, medical English is structurally complex. Medical English shares many features with the language of science in general. These features are as follows:

1. Reduced Relative Clauses: Relative clauses are usually reduced in medical English as in the example below:

> "This phenomenon can be explained by the description of special pathways in the artial wall, <u>having</u> a structure <u>consisting</u> of a mixture of Purkinje fibers and ordinary cardiac muscle cells"[1], instead of " which has, that consists of…"

2. Prolonged Strings of Successive Adjectives: One prominent feature of medical English is the use of more than one adjective simultaneously for defining or describing one entity. Examples are: left anterior descending (interventricular) coronary artery, fourth posterior sacral foramen, etc.[2]

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[1] Examples are taken from سنل علم التشريح السريري الصدر والظهر عربي – انجليزي p. 147.
[2] Examples are taken from pp.185, 248.

3. The Use of the Present Tense: The use of the present tense is an obvious feature of medical English as well as in the language of science (Haddad, 1997:9). Examples are many including: each intercostal nerve enters…, cardiac muscle consists of..,etc.

4. Complex Structure: Medical English employs many structures that, although they might not be so much problematic to English doctors, on some occasions, they form an obstacle to medical practitioners whose first language is not English despite their impressive command of medical English. This observation, made by an Arab doctor, depends for its validity on specific examples as:

> "…the greater petrosal nerve. This nerve joins the deep petrosal nerve as it passes through the foramen lacerum to form the nerve which passes anteriorly through this canal to the pterygoplalatine fossa[3]".

It is not structurally clear whether the anaphora "it" refers to "the greater petrosal nerve" or to "the deep petrosal nerve".

5. Prepositional Phrases: Prepositions and prepositional phrases play a significant role in the professional medical language in English. The preposition "of" has the highest frequency compared with other prepositions, though this finding cannot be generalized as a universal rule (Krulj et al, 201: 173; 175).

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[3] Examples are taken from *Clinically Oriented Anatomy*, Sixth Edition, p.952.

6. Progressive Stripping of Compound Nouns: In special-language texts in general such progressive sequences are frequently occurring (Rogers, 1997: 220). Medical English is abundant with the use of multi-noun compounds (Newmark, 1979: 1406). An exemplification is as follows:

"Disease Control measure" instead of "measures for the control of diseases[4]".

Having identified the features of medical English, the researcher shall present the features of medical Arabic. However, since English speaking countries in the modern times are taking the lead in medical sciences, medical Arabic, in an attempt to keep up with the frontier of medical sciences, has been largely casted in translational moulds, as it will be explained later, making the task of identifying its original features not quite easy. Hence, it would be greatly insightful to first shed the light on the stages medical Arabic has gone through, that have led ultimately to the establishment of the Arab academies.

2.3 The History of Medical Arabic

Arabic medicine and pharmacology reached their peak during the Islamic era, more specifically during the Umayyad and Abbasside periods, when movements of translation into Arabic flourished, followed by a period of Arabic contributions. The history of Arabic medicine extended

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[4] Examples are due to Haddad, 1997, p. 10.

from the eighth century when Arab intellectualists started to appear and multiple sciences began to emerge eastward. This beacon of sciences remained there until the beginning of the thirteenth century (**Najjar, 2012: 587**). While the Middle Ages were an era of darkness for Europe, for Arabs, they were an era enlightened by a renaissance of scientific study which preserved for the world much of the medical knowledge of the Greeks and ancient Semites and added on it by contributing with much of what had been unknown in medical science (**Wakim, 1944: 96).**

The history of Arabic medicine can be divided into three main stages; the age of translation, the age of Arabic original contribution, and the age of decline and transmission to Europe (**Sa'di, 1958: 208-218**). The next few pages present an outline for the three stages. It also sheds the light on the aftermath establishment of Arab academies and their role in developing medical Arabic.

1. The Age of Translation (A.D. 750-850)

Medical Arabic flourished by means of translating Greek and Latin medicine. Haddad (1997, 29:30) has explained that such translation movements began in the Islamic era during the Umayyad period. Translation was further developed during the Abbasside era as Abbasside Caliphs had great interest in science and knowledge. They encouraged doctors and scientists in general and offered them incentives in return of their efforts in translating Greek sciences. For example, Caliph al Mamoun

used to pay translators of Greek and Hippocratic works the weight of their translations in gold **(Najjar, 2010: 588)**. The most prominent translator who had translated the whole Galenic corpus was Hunain bin Ishak **(Romani, n.d.: 100)**. His widespread popularity stems from the fact that, until Hunain's time, Arabic scientific knowledge was meager in content and lacked terminology which makes the most essential characteristic feature of scientific knowledge and communication. Hunain was in a position to develop Arabic terminology for practically every branch of knowledge **(Sa'di, 1958:208).** As for Arabic pharmacology in particular, Pormann PE (2011) has pointed out that the evolution of pharmacological writing in Arabic started in late eighth century in which technical terms were developed by means of transliterations until mid-ninth century in which many standard Arabic translations for Greek words were established.

It is worth noting here that medical Arabic at that time and along the middle ages, followed two methods in its translations. Haddad (1997: 32-33) has explained that the first one was Yunnan bin Batriq's method in which he looked at every Greek word and tried to find a corresponding Arabic word, then he would continue translating in a linear fashion until he finished what he was arabizing. This method was deemed ineffective somehow as there is no one to one correspondence between Greek and Arabic as well as due to the fact that the two languages have quite different structures.

The second method of translation was that of Hunain bin Ishak in which he translated sentence by sentence rather than word by word. He translated sentences into corresponding sentences in terms of meaning regardless of whether or not they were equal at the word level. This translation method was deemed better as it evaded the shortcomings of the previous method of translation. Thus, Arabic scholars preserved the scientific heritage of other nations through their translations, and this fact highlights the importance of translation in building civilizations and in bridging civilizational gaps. Following this stage comes a more fundamental stage characterized by the commence of originally Arabic medical writings alongside continuing the translation from classical languages into Arabic.

2. The Age of Arabic Contribution (900-1100 A.D.)

Following the age of translation, the Arabs began to build on and develop classic sciences, and they relied upon their own resources and scientific discoveries. This stage of Arabic-Islamic medicine was characterized by the production of what are defined as medical encyclopedias due to their comprehensive content. The most eminent medical figures were Al-Razi, Ibn Sina, and Ibn Al-Haitham (1958, p.208). Together with Al-Magusi, they were considered "the most important protagonists in the process of 'vivification of medical sciences'" (Romani, n.d: 101). Najjar (2010: 587) has also described this idea by quoting Osler

as :"The Arab scholars had used the Greek candles for their lamps, but they rapidly became a huge Flambeaus that gives its light to all world".

Some of the Western scholars see the contributions of the doctors of the Arabic and Islamic world as simple keepers of Greek science to the scholars of the Renaissance. However, this is a pejorative point of view that conceals the tremendous contribution of Arab doctors to medical sciences. As Najjar (2010:289) has argued, it was Ibn al-Nafis who first described the pulmonary circulation. This discovery refuted the thousand-year old theory of Galen that had suggested invisible pores in the intraventricular septum. The Arab achievements in this stage have largely laid the basis for Western medicine to flourish afterwards.

3.The Age of Decline and Transmission to Europe (1100-1400 A.D.)

The study of science started to die up in the East in the beginning of the twelfth century, hence marking the end of the Eastern intellectual era and at the same time drawing the beginning line of scientific growth in the West. By the end of the thirteenth century, sciences had transmitted to Europe. As the Arab civilization had expanded and reached Spain, western students came in contact with the Arabic scientific heritage. For example, a man named Gerard of Crimona, learned Arabic and translated 92 books into Latin **(Haddad, 1997: 31)**. Similar efforts granted the rest of Europe a wide access to the Arab rich civilization, ultimately paving the way toward further studies and discoveries which characterized the Renaissance era in

the Western world. This at the same time resulted in a period of scientific recession in the Arab world, where medical Arabic has occupied a back seat compared with the Western medical languages.

Nonetheless, in the nineteenth century, movements to revitalize scientific terminology started throughout the Arab world not through original Arabic contributions to medical sciences, but by means of translation once again. Translation of medicine started over in Muhammad Ali's reign **(Al-Zarkan, 1998)**. Schools of translation then started to appear in Syria, Iraq and other spots of the Arab world. The translations were merely from French into Arabic. However, when the American University of Beirut was set up, sciences from English started to slash their way into the Arab world through translation **(Haddad, 1997: 32).**

Since that time, Arabic language that was once a means of civilizations bridging and a source language from which other languages sought credible mounts of translation, has now become a target language that struggles to keep up with everyday updating foreign sciences. One step toward achieving approximation to the western advanced medical sciences is the establishment of institutions accountable for translating western medical publications and, in many cases, creating new Arabic medical terms to correspond to the constantly emerging English medical terms. These institutions are represented by the Arab academies which began to emerge after the first world war **(Al-Zarkan, 1998).**

2.3.1 The Arab Academies and Institutions of Standardization

1. The Arab Academies

According to a July 24, 1995 article in the *US News and World Report*, almost 25.000 new English words are coined every year, of which only 4% make it into the dictionaries **(Segura, 1999).** Consequently, Arabic for science in general is today somewhat behind the times with respect to the plethora of English terminology being created every day. The Arab academies were institutions established to serve Arabic Language, preserve it, and make it adequate for accommodating all the requirements of science and arts to fit more the needs of contemporary life. Al-Zarkan (1998) has thoroughly studied the Arab academies and their efforts in this field, and to him, the present review is accredited. There are four Arab academies that have been mainly at work in Syria, Iraq, Jordan, and Egypt. The first Arab Academy was established in Syria in 1919, followed by the Arab Academy in Egypt in 1932, the Iraqi Scientific Academy in 1947, and finally the Arab Academy in Jordan which was founded in 1976.

At the beginning, especially in the Syrian and Egyptian Academies, no due heed was paid to technical terms in spite of their importance and necessity in the world of rapid discoveries and invention. This in fact hindered medical Arabic to some extent. However, these Academies eventually took the initiative in introducing thousands of Arabic technical terms, and they opened the door toward further advances in this field. The

methodologies all the Arab Academies have followed in translating medical terms in particular have been similar to a large extent. The Arab Academy in Damascus, despite its small contributions, derives its importance from being the first step toward reviving Arabic technical terminology. But the Academy does not have any specific procedures in arabizing terminology, according to its previous president Dr. Husni Sabah, a professor of Medicine **(Sieny, 1985: 155).** Hence, the work of this Academy was based on the efforts of its individual members **(Al-Zarkan, 1998).** As a result of such individual works, medical Arabic terms suffered from multiplicity, thus creating a substantial degree of confusion among translators. However, since the Arab Academy in Cairo has contributed the most to the process of translating and coining of Arabic technical terms, the researcher finds it suffice to present its methodology to stand for all other Arab academies in their efforts to develop medical Arabic.

1.2   The Methodology of the Arab Academy in Egypt

This Arab Academy has followed the traditional methods of coining terms through transliteration, blending, derivation, and arabization. Its methodology can be summarized as follows:

In case there are Arabic equivalences for the scientific foreign terms, the Arab Academy pursues the following steps:

1. Reviving equivalent terms from ancient Arabic books.

2. Creating Arabic dictionaries in which these old Arabic terms are included.

3. Preferring old terms over new ones unless the new ones are common.

4. Avoiding multiplicity in reference in that each term refers to one meaning only.

Moreover, in case the terms are new and have no equivalence in old Arabic books, " the Cairo Academy has very sophisticated procedures in processing new terms beginning from subject specialties through to the annual 'General Conference', when the new terms are given the blessings of the Academy" **(Sieny, 1985: 156).** Al-Zarkan (1998) specifies these procedures as follows:

1. Asking the experts to provide thorough explanations of the new terms.

2. The terms are then discussed by committees within the Academy, and the equivalent terms are reviewed by the council of the Academy.

3. If the council approves the terms, they are spread in the scientific fields by sending lists of the latest coined terms to educational institutions .

In an attempt to stay updated with the latest sciences and scientific terms, the Arab Academy asks educational institutions to send to it lists of the newly used terms and their foreign equivalents, and discusses the possibility of including them in Arabic dictionaries. Should the terms be approved, the Arab Academy recommends the use of such terms. Furthermore, the Arab Academy would also include the terms that have

been used in other Arab countries. This, once again, has led to lack of standardization of the scientific terms among Arab countries.

Like other Arab academies, the Egyptian Arab Academy looks at transliteration as the last resort. In other words, it tends to transliterate terms if and only if finding an equivalence of purely Arabic origins is out of question. Thus, it tends to transliterate, for example, proper names and names of chemical elements like Oxygen, Hydrogen,..etc. However, transliteration is not arbitrary but is rather rule governed as it should follow certain rules in transferring foreign letters into Arabic ones. For example, the pronunciation of such transliterated terms should comply with the Arabic rules.

Furthermore, the Academy allows for the use of foreign words as they are when necessity calls for that, though it does not define what that necessity is or to what extent foreign words can be used in Arabic. Moreover, it does not recommend translating a term with a phrase or with more than one synonymous term. It stipulates that the Arabic term be clear and precise in its meaning. Finally, the Egyptian Arab Academy seeks to avoid strange terms, though it does not deny the use of some rare terms that seem quite sound.

In conclusion, it can be noticed that the Arab academies, despite their relative differences, have all agreed upon similar methodology in their attempts to deal with the scientific terms. They all called for reviving the

old Arabic terms as a first step rather than the tendency to hastily create new ones or even transliterate the foreign terms **(Al-Zarkan, 1998)**. In relation to medical terms in particular, it can be said that both the Egyptian Arab Academy and the medical school at the Syrian University are the most active groups in enriching medical Arabic.

2. Other Institutions

Along with the Arab academies, there are also other institutions that are concerned with translating and arabizing scientific terminology. Sieny (1985:156) has listed them:

1. ALECSO's Bureau of the Coordination of arabization in the Arab world. The Bureau is largely involved in the coinage of new terminology in addition to its main role as a coordination agency.

2. The Institute for Studies and Research for arabization.

3. The Kuwait Research Institute.

4. The Arab Development Institute in Tripoli and Beirut.

Thus, many bodies have been concerned with the production of Arabic technical terms in general and medical terms in particular. Consequently, the need for establishing medical dictionaries to include the thousands of the arabized, newly coined, or transliterated terms to serve as translational equivalents to the increasing numbers of foreign medical terms is extremely urgent. The next section presents the most common resources for medical Arabic.

2.3.2 Resources for medical Arabic

As mentioned earlier, contemporary medical Arabic is heavily dependent on translating English medicine; therefore the need for credible translation references is urgent. According to Romani (n.d.: 95), there are two standard dictionaries and two internet-based resources that count as main references for Arabic medical terminology. The first dictionary is the Unified Medical Dictionary or UMD. It is issued and sponsored by the Regional Office for the Eastern Mediterranean of the World Health Organization, and it is thus considered of an official status. The second dictionary is the Arabic Dictionary by Yusuf Hitti. Although it is of a lesser official status compared with UMD, it is considered a rich reference for medical practice in the Middle East.

Additionally, the two internet-based resources are Arabic Wikipedia and the Arabic medical website, Altibbi.com. The latter is more reliable given the fact that it is a very well managed website, and it includes extended descriptions that make it as a sort of an online Arabic medical encyclopedia. Arabic Wikipedia, on the other hand, includes contributions that are made in an anonymous way without a strong standard of reference. However, Arabic Wikipedia derives its importance from being perhaps the closest reference possible to the current medical and linguistic practice.

2.3.3 Criticisms to the Arabization Efforts

Despite the immense efforts the Arab academies have paid in the field of medical terminology, they could not manage to unify and spread the approved medical terms throughout the Arab world **(Al-Zarkan, 1998).** Arabic medical terms suffer heavily from multiplicity in reference. Additionally, some of these different translations of the same English medical term are contradictory in meaning. This idea is best illustrated by the example below.

Table (1) An example of medical terminological overlapping

The English medical term	UMD translation	Hitti's translation
Epiphysis (p. epiphyses)	المشاشة "ج: المشاش"	كردوس، مشاشة
Diaphysis	جدل	مشاش ،ساق أو عمد العظم

As it can be seen from the example above, there is some overlap between the translation of the two most credible Arabic dictionaries, the UMD and Hitti. The word " المشاش " is used by the UMD to refer to the plural form of epiphysis– where "ج" stands for "جمع"- and at the same time, it is used by Hitti to refer to a different part of the bone i.e. the diaphysis. "Epiphysis" refers to " the end of a long bone" while " Diaphysis" refers to "the shaft of a long bone".

Moreover, Arabic medical dictionaries include words that are odd and unfamiliar (Haddad, 1997: 7). Another weak point is the inconsistency

of the lexical choices they make. This idea is expressed by Romani (n.d.: 95) as follows:

> "one could think that contemporary technical medical lexicon is already covered by dictionaries and other reference works: in fact it is not so. Although contemporary medical dictionaries do indeed exist, they tend – as in other sectors of contemporary Arabian lexicography – to normalize terminology according to [the] guidelines of language academies rather than on common medical terminological praxis. Moreover, as it is customary in Arabic lexicography, medical dictionaries often do not agree in their lexical choices."

Consequently, translators tend to make different lexical choices and use different equivalences for a single foreign medical term leading ultimately to terminological inconsistency.

By the same token, Haddad (1997: 36) argues that medical terms are usually translated by resorting to medical dictionaries to find equivalent terms. Having found such terms, Arab linguists approve them as a formal translation without due consideration to clarity, familiarity, and precision. Yet another weak point attached to Arabic medical dictionaries – most probably Hitti rather than UMD- is the fact that different terms with different conceptual references may be translated by one term only leading to what is called lexical overstandarization which refers to the total or

partial equation of two or more different SL terms with one TL correspondent (Nassar, 2002: 50). For example the term "aponeurosis" is defined by Merriam Webster Online medical Dictionary as "any of the broad flat sheets of dense fibrous collagenous connective tissues that cover, invest, and form the terminations and attachments of various muscles" and the term "peritoneum" refers to "the smooth transparent serous membrane that lines the cavity of the abdomen of a mammal, is folded inward over the abdominal and pelvic viscera, and consists of an outer layer closely adherent to the walls of the abdomen and an inner layer that folds to invest the viscera". However, they are translated respectively by Hitti's dictionary (1982) as "الصفاق", and "الصفاق،البريتون". Thus, the word "الصفاق" is used to refer to both aponeurosis and peritoneum. Furthermore, looking through any medical dictionary, one can find that at least two different meanings are provided for the same word. The English term is translated differently in different English- Arabic dictionaries; thus the translator feels confused about which term to use. Moreover, the lack of standardization among Arabic medical dictionaries leads medical books translators to use different terms for the same concept which confuses students of medicine and affects their readiness toward studying medicine in Arabic. For example, the medical term "groin" is translated by the UMD as "أربية" and as both "أربية، المغبن" by Hitti's dictionary. The term was translated in the book of علم سنل "المغبن" (p.142) while التشريح السريري الطرف العلوي والسفلي عربي –انجليزي as "المغبن" the same term is translated as "أربية" in the book of التشريح ووظائف الأعضاء: مقرر التعليم الذاتي (p.447).

Thus, different Arabic words for the same English term are used in the translation of two medical books which aim to serve the needs of medical students whose first language is Arabic.

Moreover, Al-Zarkan (1998) has pointed out that weak coordination between the Arab academies has resulted in such multiplicity of terms. Furthermore, the fact that Arab academies are colored with local characteristics make their terminology not valid to be equally used in different parts of the Arab world.

As a final note, it can be noticed that having different kinds of resources for medical Arabic and having different bodies of translation and standardization with low coordination among each other have caused medical Arabic to suffer from multiplicity in reference, overstandarization, and a lack of standardization. All of this, together with the superficial interest in issues of circulation and usability of translational equivalences have all resulted in terminological inconsistency.

2.4 The General Features of Arabic Medical Language

It can be said so far that the largest portion of the currently available Arabic medical corpora is of the contemporary western-style medicine as Romani (n.d.) would call it. Arabic medical texts are similar in many aspects to their English counterparts. Nonetheless, because of the different linguistic structures of the two languages, the two registers differ considerably. It is indeed a must to say that this thesis could not find

adequate resources that would provide a frame for what could characterize medical Arabic . However, based on multiple readings of both originally Arabic medical writings and medical works translated into Arabic, the researcher lists the following lexical and syntactic features that can be said to characterize modern medical Arabic.

2.4.1 Lexical Features

Arabic medical texts generally have the following lexical features:

1. Blends: The process of blending is common in Arabic language in general and is known as "naht". Medical Arabic, like medical English, makes use of blends as in:

الشريان for " "الشريان تحترقوي" and , "الغدد الفوق كلوية" for "الغدد الفوكلوية" تحت الترقوي". Also, the blend "حبسولة" is used as a translation of the English blend "Caplet". It is taken from the two words "حبة" and "كبسولة". Nonetheless, there is a tendency toward discouraging the use of blends in Arabic medical writings as stated by the UMD, edition four.

2. Neologisms: Due to the immense number of emerging brand drugs, chemical elements and acids, and active ingredients, the use of neologisms has shown to be an inherent characteristic of medical Arabic.

Examples are سبازمين ،ألوباربيتون ،باراسيتامول for Paracetamol, Allobabitone, and Spasmin (brand drugs), respectively.

3. Eponyms: it is very common to find eponyms throughout Arabic medical writings. Examples, among many, are كسر مونتيغيا، كسر غالياري، كسر كوليس، كسر بينت، كسر سميث⁵ for Monteggia's fracture, Galezzi's fracture, Colles' fracture, Bennett's fracture, and Smith's fracture respectively.

2.4.2 Syntactic Features

The syntactic features of Arabic medical language are the following:

1. **Present Tense:** Medical Arabic shares with medical English the use of the present tense as in:

This flat fibrocartilaginous disc lies within… يتوضع هذا القرص الغضروفي المسطح⁶

2. **Prolonged Strings of Successive Adjectives:** Medical Arabic is crammed with successive adjectives. This phenomenon stems from two facts. First, in corresponding to the very use of prolonged strings of successive adjectives in medical English, medical Arabic tends to employ the same strategy. Secondly, the use of successive adjectives in medical Arabic is closely related to the heavy dependence of medical English on compound words which are made up of combining different forms and affixes. Due to the absence of such word formation techniques in Arabic language in general, medical Arabic compensates for this absence by the

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⁵ Examples are taken from سنل علم التشريح السريري الطرف العلوي والسفلي عربي –انجليزي, pp. 161-162.
⁶ Examples are taken from سنل علم التشريح السريري الطرف العلوي والسفلي عربي –انجليزي, p. 45.

use of successive adjectives when translating the so many medical English terms that are of Greco-Latin origins. Thus, it is safe to say that this feature is even more commonly used in medical Arabic than in medical English. An example on the first case is:

fourth posterior sacral foramen   الثقبة العجزية الخلفية الرابعة[7]

Examples on the second case are:

Inferior tibiofibular joint   المفصل الظنبوبي الشظوي السفلي[8]

Sternocleidomastoid muscle   العضلة القصية الترقوية الخشائية [9]

3. Prepositional Phrases: Medical Arabic prefers the use of prepositional phrases over compound structure as stated in the UMD, fourth edition. For example, الطبقة الحبيبة للبشرة is preferred over "طبقة البشرة الحبيبة", and "الرأس" example, and "الرأس". الأمامي للعضلة ذات الرأسين" is preferred over "رأس العضلة ذات الرأسين الأمامي". Prepositional phrases are also used as an equivalent to English adverbials of place as in:

إلى الوحشي Laterally: إلى الأنسي Medially

إلى الأمام anteriorly: إلى الخلف Posteriorly:

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[7] Examples are taken from سنل علم التشريح السريري الصدر والظهر عربي –انجليزي p.248.
[8] Examples are taken from سنل علم التشريح السريري الصدر والظهر عربي –انجليزي p.66.
[9] سنل علم التشريح السريري الطرف العلوي والسفلي عربي –انجليزي Examples are taken from p. 173.

4. Negative Particle Definition: Another technique that medical Arabic commenced to use in an attempt to grasp the meaning of certain prefixes is defining the negative particle " لا ".

For example: ‘‘الشبكة الهيولية الباطنة اللاحبيبية[10]", البنى اللاإرادية مثل "القلب[11]", "أما فعاليات الجزء اللاودي". The use of ‘‘لا" with singular nouns has become customary in medical Arabic as stated in the UMD.

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[10] Examples are taken from الأساسيات في تشريح الإنسان, p.24

[11] Examples are taken from سنل علم التشريح السريري الصدر والظهر عربي –انجليزي, p.41.

Chapter Three
Methodology and Theoretical Frame

This chapter presents a full description of the study methodology. It also lays the theoretical frame upon which the present study is based as it introduces the approaches to medical translation and defines the notion of equivalence in the sense used in this study. Moreover, a description of the most common three types of translational equivalence in Arabic medical texts along with a definition of terminological inconsistency are also presented.

3.1 Description of Methodology

The first part of this chapter highlights the methods and procedures used to collect the amount and type of data deemed necessary to conduct a reliable study and come up with representative results. It defines the sources of data, and the districts covered in this study, and provides the significant details about the study respondents. The instrument of data collection is shortly described, too.

3.1.1 Districts and respondents

As this study is concerned with the translation of medical terms into Arabic for the purpose of finding out the most successful and circulated Arabic medical equivalence among doctors on one hand, and between doctors and their patients on the other hand, Arab doctors working at

governmental or private hospitals or in private clinics are targeted in this study. The study covers both Nablus and Ramallah districts to provide a quantitatively comprehensive sample.

3.1.2 The sample

The present study is based on a sample consisting of a total of 100 Arab doctors. The sample size is deemed adequate to present systematic patterns of terminological use, and it is also convenient for calculations. Furthermore, in order to investigate whether or not the relevant variable of the language in which the respondents have received their medical education could affect the results of this study, the study participants were asked to provide the information shown in table (2)

Table (2) Descriptive analysis of the sample

Variable	Number	Percentage
1. District		
Nablus	80	80%
Ramallah	20	20%
Total	100	100%
2. The language of medical education		
English	63	63%
Non-English	37	37%
Total	100	100%

The sample included 80 doctors working in Nablus and 20 in Ramallah districts. The number of responding doctors who have received their medical education in English was 63 while the remaining 37 obtained their medical degrees in other languages including mainly Russian, German, Latin, French, Italian, and Arabic. The sample is representative in that it included doctors who have received their medical education in a variety of the most prominent languages of medicine. The number of doctors who have received their medical education in English is higher given the fact that Palestinian universities use English as the official medium of instruction especially in medical faculties. Also, most of Palestinian students who are granted scholarships to pursue their studies abroad, usually go to European countries, mainly Russia, or to North African countries such as Morocco or Algeria, where French rules as a language of medicine.

3.1.3 The Sources of Data Collection

1. Medical Books, Medical Arabic Dictionaries and Drug Package Inserts (DPIs)

In order to measure the terminological inconsistency in medical Arabic, seven medical books were investigated to extract the most problematic and inconsistent term translations. These books are:

1. سنل علم التشريح السريري الرأس والعنق عربي ⁻انجليزي.
2. سنل علم التشريح السريري الصدر والظهر عربي ⁻انجليزي.
3. سنل علم التشريح السريري الطرف العلوي والسفلي عربي ⁻انجليزي .

The above three books are a translation of *Snell Clinical Anatomy.*

4. ‫التشريح ووظائف الأعضاء- مقرر التعليم الذاتي‬. It is a translation of *Anatomy and Physiology : A Self-Instructional Course"* by Cambridge Communication Limited.

5. ‫الأساسيات في تشريح الإنسان‬.

6. ‫دليل المصطلحات الطبية‬.

7. ‫مراجعة مصورة لــ : علم الأدوية‬. It is a translation of *Lippincott's Illustrated Reviews of Pharmacology.*

The first six medical books discuss anatomy while the seventh covers pharmacology. The first four anatomical books are translated from English. The remaining two anatomical books are originally written in Arabic. Yet, they are included within the scope of medical translation because, despite being original Arabic writings, they both include English medical terms along with their Arabic translations and list the UMD as a reference. And since this study is concerned with inconsistency at the level of terms only rather than at structural or stylistic levels, these books are deemed essential to provide an entrance for modern Arabic medical terminology and its relation with the source language of medical English. They also stand as important indicators for the degree of circulation of certain translations. The three books of *Snell clinical Anatomy,* and *Lippincott's pharmacology* are translated by Al-Mualaqua (‫المعلقة‬) in Damascus, while the book *Anatomy and Physiology : A Self-Instructional Course* is translated by King Saud University. The two Arabic medical

books are written by doctors in Jordan. The two medical dictionaries are *Hitti's* and the *Unified Medical Dictionary* (UMD).

Moreover, data were also extracted from 35 DPIs that were collected from local pharmacies and private clinics.

The selection of the sources of data was neither fully random, nor purely subjective. The above mentioned books were chosen as they are issued in the different Arab countries of Syria, Jordan, and Kingdom of Saudi Arabia, and they are made available for students in Palestine, and thus cover the efforts of different bodies in the pan-Arab area.

Also, this study is concerned with assessing inconsistency in translation not only among medical books on one hand and among DIPs for patients on another, but also between the two different contexts of medical books and DIPs as they target different audience. Thus, anatomical and pharmacological books were investigated, so that the odds for the same medical term to occur in both contexts were relatively high.

Furthermore the two medical dictionaries –Hitti's and the UMD- are the most popular and the most used dictionaries when medical books are being written in or translated into Arabic. This argument is verified in the fact that six out of the seven mentioned books list the UMD as one main reference.

The selection of DPIs on the other hand was also semi random. It aimed at detecting the problematic words from a pure translational point of view. The selected DPIs indicated a variety of drugs distributed by the

leading Arab pharmaceutical companies in Palestine including Jerusalem Pharmaceuticals Company, Birzeit Pharmaceutical Company, Pharmacare PLC, and Beit-Jala Pharmaceutical Company along with foreign distributing pharmaceutical companies. The largest portion of the selected DPIs are translated by the aforementioned Arab pharmaceutical companies themselves. Also, some DPIs are translated and issued by the Council of Arab Ministers of Health and other foreign pharmaceutical companies. The selection process of DPIs was mainly based on three criteria:

1. All DPIs include Arabic translation along with the English content.

2. They address patients, and thus, they are translated into Arabic. As it shall be indicated later, DPIs addressing doctors and specialized institutions are usually not translated. This claim is true in Palestine at least.

3. They are available in drug stores and private clinics and are usually inserted with drugs yielded to patients in local pharmacies.

2. Interviews with Doctors

As this study is aimed at discovering the most acceptable type of equivalence on the basis of use and the contexts of use, short interviews have been conducted with experienced doctors who provided some insightful guidelines about Arabic medical terms, the credible Arabic medical dictionaries, and the general mechanism they adopt in dealing with specialized and non-specialized participants.

3. Telephone Interviews

Bearing in mind that this study is concerned with translating medical terms for patients in DPIs, the researcher conducted telephone interviews with the aforementioned most prominent pharmaceutical companies in Palestine. The aim was to build a suffice understanding of which translation methods are used in translating DPIs, on what basis the translations are done, who the translators are, what expertise they have in the field, and to what extent the non- specialized patient is given attention throughout the translation process.

4. The Questionnaire

In an attempt to reach a reliably representative corpus of data, a comprehensive and well designed questionnaire was created for this study. After conducting a pilot study, a stage in which the questionnaire was updated, revised and finalized upon the consultation of Dr. Anas Nablusi[12], a seven-page questionnaire was developed. The questionnaire included 70 medical terms found problematic in relation to terminological inconsistency. The questionnaire consisted of four sections. The first section included background information about the respondents, which was deemed to be relevant to the scope of this study. Such information touched upon the respondent's district of work as well as the language in which the respondent received his/ her medical education. The second section

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[12] An orthopedist at Rafidia hospital

included 60 medical terms along with the different translations into Arabic. It is worth mentioning here that the terms, though randomly chosen, fell more or less under the headings of anatomy and pharmacology given the fact that the books investigated in the present study were of anatomical and pharmacological nature. Each medical term had at least two translations and some terms had three translations. Such translations were documented in accordance with the aforementioned dictionaries for the most part except for a few translations that the researcher could not find in Arabic dictionaries but yet reported occurrence in DIPs. In this section, the respondents were required to choose the Arabic equivalence that they use when they exchange specialized Arabic medical talks with doctors, medical students, and any other figures specialized in the medical field. As mentioned earlier, the three different types of equivalence of arabization, transliteration, and descriptive translation were provided from among which respondents could make their choices. Moreover, the questionnaire included an extra column to give respondents the chance to suggest their own translation of the included medical terms in case none of the present types of equivalence or translations was in common use.

The third section is more or less the same as the second one, only that it was aimed at identifying the type of equivalence to be used when doctors are involved in medical interactions with ordinary uninformed patients. It contained 26 terms that were found inconstantly translated in DPIs. Although the total number of terms investigated in this questionnaire

seems to be 86 terms, the real number of different terms is 70 as 16 terms were identical in the second and third sections of the questionnaire. The fourth section contained an open question so the respondents could present their attitudes toward the process of translating medical terminology into Arabic in general.

3.1.4 Data Analysis

The 100 copies of the developed questionnaire were collected, and data were extracted and classified in relation to terminological inconsistency in the light of the three prominent types of translational equivalence. True percentages representing the rate of use were assigned to the different translations of each medical term on its own. Afterwards, the percentages of use for a specific type of equivalence were added up to figure out the final percentage of use for each type in comparison with one another in both specialized and non-specialized contexts. The next step involved identifying the total percentage of use for each type of equivalence in general, and they were ordered descendingly in the two contexts. This procedure was followed in all the types of terminological inconsistency that included alteration between different types of equivalence.

Finally, the percentage of terms whose translations were found to either match or diverge from the lexical entries included in the UMD was also calculated to gain some insight into the usability of the UMD as a body of reference for medical Arabic.

3.2 Theoretical Frame

3.2.1 Approaches to Medical Translation

Pilegaard (1997) has explained that most of the current international medical literature adopts a sociolinguistic approach to medical language, i.e. describing it in terms of speakers and communicative situations, and that "the communicative purpose of medical language is to provide unambiguous and nonsynonymous language by means of terminologies in order to express relevant concepts, especially in the expert-to-expert tenor" (159-160). Hence, what must be heeded in medical writing necessitates reasonably the same application on the translated copy. Medical translation, being a branch of specialized translation, follows the same patterns as any other type of technical translation. For instance, the translator of medicine should be adequately informed about the subject matter and should keep the maximum degree of accuracy. Also, medical texts are crammed with medical terminology that need to be translated heedfully. Some allegedly argue that translating technical terms can be easily handled by virtually consulting a bilingual or multilingual dictionary. Although accuracy can be maintained, using the right equivalence in the right context cannot always be granted. Newmark (1979: 1406) has pointed out that using such dictionaries can never be enough to reach the sought equivalence as they often contain many synonyms that are out of context. From a translational point of view, equivalence is a very common concept in translation studies. Many researchers have attempted to define equivalence in translation.

However, for the purpose of the present inquiry, the present study employs the definition by Catford which presents equivalence as being "the basis on which source language (SL) textual material is replaced by target language (TL) textual material" **(as cited in Hatim, 2001:14)**.

As far as the word level is concerned, Hatim (2001: 29) has illustrated that a quantitative approach to the scheme of equivalence relations can be a adopted especially in domains of terminology and technical translation. Hatim presents Kate's typology of a quantitative approach toward the concept of equivalence relations as follows:

"1. One-to-one equivalence, where there is a single expression in the TL for a single SL expression

4 One-to-many equivalence, where more than one TL expression is available for a single SL expression

5 One-to-part-of-one equivalence, when a TL expression that covers part of a concept is designated by a single SL expression.

6 Nil equivalence, when no TL expression exists for an SL expression."

The translation of English medical terms into Arabic is an obvious case of one-to-many equivalence. The fact that all English medical terms investigated in this study have established Arabic equivalences eliminates the case of nil equivalence. However, having three different types of equivalence- arabized, descriptive, transliterated- lies in the fact that translating English technical terms into Arabic in general suffers from the absence of one-to-one equivalence. Roger (2008: 103) has quoted Catford:

"In a text of any length, some specific SL [source language] items are almost certain to occur several times. At each occurrence there will be a specific TL [target language] textual equivalent."

Roger has explained that if a term A in the source text is always translated as term A' in the target text, this indicates a one-to-one equivalence of A and A' which can be represented without trouble in a bilingual dictionary. However, a probability of less than one entails variation in the lexical choices made by the translator in the target text for term A, and hence, a lack of consistency.

The case of one-to-part-of-one equivalence is manifested in medical translation into Arabic if taken from a medical point of view. For example, the English term "ataxia" is translated consistently as "ترنح". However, Nassar (2002: 36) denotes that this English term is defined as a "defective muscular coordination manifested when voluntary movements are attempted" while the Arabic term of "ترنح" refers only to lack of balance in walking and excludes other voluntary motions of different organs of the body such as the head, the hand, etc.

However, as long as terminological inconsistency is involved, medical Arabic seems to relate to medical English through one-to-many equivalence relations.

3. 2.2 Translation Procedures and Types of Equivalence

In translating medical English terms into Arabic whether in books or in DPIs, three main translation procedures, that lead to three different types of equivalence, are predominantly used as follows:

1. **Arabization:** According to Saydai, arabization in the East Arab countries means a lexical expansion that involves the rendering of new terms from existing roots and translation of foreign terms (as cited in Haloush, 2002: 21). For example the medical term "cataract" is arabized as "الساد".

2. **Borrowing**: " To take a word or expression straight from another language. It can be pure (without any change), e.g., to use the English word lobby in a Spanish text, or it can be naturalized (to fit the spelling rules in the TL)" **(Molina, & Albir, 2002: 510)**. Naturalized borrowing is also called transliteration, and it is this latter naming that shall be used throughout this research. For example "cataract" is transliterated as "الكاتاراكت".

3. **Description:** "To replace a term or expression with a description of its form or/and function" (2002: 510). For example the same medical term of "cataract" is translated descriptively as "إعتام عدسة العين", or "ماء بيضاء". It is worth mentioning here that descriptive translation also includes the translation of one-word terms that are made up of prefixes and suffixes- into two-or-more-word Arabic terms. This is especially true in the case of Arabic which lacks the use of prefixes and suffixes in forming equivalents,

a technique of word formation that is used heavily in English. For example, the one-word term "pheochromocytoma" which is made up of (pheo=dusky), (chromo=color), (cyt=cell),(oma=tumor) is translated descriptively into Arabic as "ورم القواتم". Moreover, descriptive translation involves one-word equivalents that are seen to describe the form or the function of the original term. To illustrate, the term "edema" has been arabized as "وذمة" or described as "الاستسقاء". While "وذمة" is used specifically to stand for the term "edema" which means " an excessive accumulation of serous fluid in connective tissue or in a serous cavity" (Merriam Webster online medical dictionary), the word "الاستسقاء" is used to refer to any excess accumulation of fluid as in "Hydrocephalus" which involves "an excessive accumulation of fluid in the cerebral ventricle", and is translated as "استسقاء الرأس"[13]. By the same token, the medical term "allergy" can be arabized as "أرجية" or described as "حساسية" since the latter translation refers to a common symptom that could be associated with different conditions not only "allergy".

Thus, the three types of terminological equivalence involve arabized, transliterated, and descriptive equivalences.

3.2.3 Terminological Inconsistency

Saraireh (2001) has pointed out that standardization is one of the crucial procedures of technical translation in general for proper communication among the users of the TL text, and that consistency in translation is vital to maintain such standardization. According to

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[13] Examples are taken from دليل المصطلحات الطبية, p.49.

Macklovitch (1995:1) terminological consistency means that "each terminological unit should receive the same translation throughout the final text, so that readers are not unduly confused", and that terminological consistency is generally accepted as being one property of a good translation. While variation at the word level is mostly considered a stylistic matter in literary texts, the non-functional variation in selecting terms in technical writing and translation results in inconsistency. Terminological inconsistency can hence be defined negatively as the lack of consistency in the selection of terms or as assigning different translations to the same SL terms within a text or across relevant texts.

Chapter Four

Medical books and DPIs

4.1 Introduction

Medical books and DPIs are two different genres under the umbrella of medical industry. As mentioned elsewhere in the text, they reflect two levels of communicating partners, i.e. professional- professional (doctor-doctor or medical student) as opposed to professional –nonprofessional (doctor-patient). In order to gain some insight into how terminological inconsistency came to stem in Arabic medical books and DPIs, it is important to shed some light on how such medical books and DPIs are structured and what procedures are perused in translating such materials into Arabic. This chapter presents the findings of the interviews with doctors about the extent to which medical Arabic is used in specialized and non-specialized contexts. It also introduces Arabic and translated medical books and DPIs in terms of their structure and translation procedures. Conclusions for this chapter are chiefly based on the researcher's own study of the surveyed books and DPIs.

4.2 Findings of Interviews with Doctors

Four interviews were conducted with doctors whose languages of education included English, Italian, Arabic and Bulgarian. They were asked about the extent to which they use medical Arabic with other doctors and

with their patients. There was a general agreement over the following points:

- Arabic among doctors is not used on a regular basis, given the fact that most of them have received their education in English, and thus English is used much more than Arabic.

- Nonetheless, Arabic is used whenever communication in English fails between professionals whose language of education differs but whose mother tongue is Arabic.

- Arabic is extensively used with non-specialized patients.

The doctors recommended that regarding translating terms, the translation approach should be descriptive, i.e. considering what is commonly used, rather than prescriptive, i.e. imposing certain translations to be used. This could involve transliterating the term, arabizing it, or even replacing it with a relatively short description as long as this is what is in common use and can be glossed afterwards to become a credible Arabic equivalent.

Having presented the above views, it is worth mentioning that this study is mainly concerned with investigating terminological inconsistency in medical Arabic and finding out the most successful equivalent terms that are both accessible and in use. Thus, the findings of the interviews are deemed adequate to gain some insight into the extent to which medical Arabic is used in various medical contexts.

4.3 Medical Books Structure and Translation Procedures

Ludvigsson (2009: 1893) has explained that there are only few accounts of how to translate a medical book. What a translator should keep in mind when translating a medical book is that the translated copy should be a duplication of the original copy to the most possible extent. This is achieved via juxtaposing the original version with the translated copy. Moreover, books in general differ from other genres and forms of writing in that the author of the original text may quite abundantly cross-cite other sections of the book, a feature that should not be missed in the translated copy. In Snill's Clinical Anatomy books where the original English text is juxtaposed with the Arabic edition, the cross-cites have been successfully maintained. For example the original author cross-citations page 124 by including the parentheses (see p.124), and so does the translator into Arabic (انظر الصفحة 124)[14]. However, though maintaining cross-cites in juxtaposed texts seems easy, due attention should be paid to cross-cites when a whole book is being translated in a new book with a different format. Ludvigsson (2009: 1894) has explained that "a cross- citation to page 26, when the content of "page 26" appears on page 28 in the translated edition, may frustrate the reader". In the book of علم الأدوية: مراجعة مصورة لـِ, which is a translation of *Lippincott's Illustrated Reviews of Pharmacology,* all the original cross-cites have been omitted in the translation edition, a procedure that resulted in an imperfect provision of information to the readers. Although it requires some extra work by the translator, it is indeed worth it

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[14] Examples are taken from سنل علم التشريح السريري الصدر والظهر عربي–انجليزي, p.98.

as cross citations could be very helpful for the readers to connect different yet related ideas spread throughout the book in hand.

Seven different medical books have been thoroughly examined in an attempt to account for the most inconsistent terms in relation to different translation procedures. The researcher looked for those terms that were translated inconsistently with more than one type of equivalence whether within a single book or among relevant books. The following observations about the methodology of translating medical books into Arabic and writing Arabic medical books can be safely made as follows:

1. **Direct access to the original Latin and English terms**: All of the aforementioned books, even the originally Arabic ones, sustain a direct access to the original English medical terms by one of three means:

- Arabic medical terms are followed by their equivalent English terms as pure borrowings inserted in parentheses. Al- Quran (2011: 448-449) has explained that some authors tend to add the original foreign term within quotation marks or brackets in order to avoid the possibility of misunderstanding and to grant more clarity.

- Indices of Arabic medical terms along with their English equivalents can be found at the end of the books.

- Both of the original medical text and its Arabic translation are wholly juxtaposed.

2.   **Couplets:** Using couplets is a translation procedure which involves combining two translation procedures to deal with a single term (Newmark, 1988:83).

One common feature of Arabic medical books is that the very same entity is referred to by a couplet rather than by one lexical item. For example, a couplet may consist of an arabized equivalent accompanied by a descriptive equivalent for a single English medical term as in following example:

" Sternocleidomastoid" : العضلة القصية الترقوية الخشائية (القترائية) "

One reason translators use couplets lies in the fact that translators are faced with many alternatives for the same English term, so they are not sure of which translation is more successful than others whether in terms of accuracy, precision, or circulation. Hence they use couplets to ensure providing the full meaning of the term. Also, translators and Arabic medical writers tend to use a couplet on first mention of the medical term, to resort afterwards to using only one equivalence upon following mentions of the term without having a clear basis upon which they make their choices. For example, the term " Sternocleidomastoid" is translated upon first mention as العضلة القصية الترقوية الخشائية (القترائية) in سنل علم التشريح (p.19), just to be used as "القترائية" afterwards (p.92), while it remains as "العضلة القصية الترقوية الخشائية" in the book of الأساسيات في تشريح الإنسان (p.211).

This in turn leads to the existence of many different translations for the same medical phenomenon. Also ironically, such couplets which are

mainly used as a result of having many target alternatives for a single foreign term can eventually lead to what is called lexical overstandarization. By way of illustration, the medical term "medulla oblongata" has been translated with a couplet as النخاع المستطيل) البصلة السيسائية) in the book of‐انجليزي عربي **سنل علم التشريح السريري الصدر والظهر** (p.42), and with a different couplet as النخاع المستطيل) الوطاء) in the book of **التشريح ووظائف الأعضاء** (p.431).

Thus, the medical term "medulla oblongata" has three different translations, i.e. النخاع المستطيل، البصلة السيسائية، الوطاء. Nonetheless, the medical term "hypothalamus" has been translated as الوطاء in the book of **التشريح ووظائف الأعضاء** (p.500) and in the book of **الأساسيات في تشريح الإنسان** (p.448) itself.

Therefore, the two above mentioned medical terms – 'medulla oblongata' and "hypothalamus" -are in some way referred to by the same Arabic word "الوطاء" though the two medical terms are completely different. According to Merriam Webster online medical dictionary, "medulla oblongata" is "the part of the vertebrate brain that is continuous posteriorly with the spinal cord and that contains the centers controlling involuntary vital functions" whereas "hypothalamus" is "a basal part of the diencephalon that lies beneath the thalamus on each side, forms the floor of the third ventricle, and includes vital autonomic regulatory centers".

The importance of couplets to the present study emerges from the fact that the uncoordinated efforts in translation and the misuse of couplets lead to terminological inconsistency among medical books.

3. Employing Multiple Arabic Dictionaries: Medical books have been observed to depend on Arabic dictionaries more than DPIs for their translation. However, lack of standardization among Arabic medical dictionaries leads medical books to be translated by using different terms for the same concept which confuses students of medicine. This point has been thoroughly exemplified in the section 2.3.3 of this thesis.

4.4 Drug Package Inserts (DPIs) Structure and Translation Procedures

It goes without saying that accurate, comprehensible, and reliable product information is indispensible to ensure safe medication. Among the different health care publications is what is called drug package inserts. A drug package insert is a printed leaflet accompanying the marketed drug product and contains information approved by the regulatory agencies (Shivkar, 2009: 104). DPIs are distributed in different manners in different countries. For example, DPIs for critical drugs are designed for doctors and directed solely to medical institutions such as hospitals. On the other hand, only certain drugs are required to have patient specific information such as those readily obtained from pharmacies. However, DPIs are usually addressed to ordinary people but at the same time doctors can benefit from them especially if the drug is new to the market. Designing a DPIs is never

arbitrary, but it normally follows certain textual patterns and regulatory and readability guidelines. Herget and Alegre (2010) have pointed out that the textual genre of DPIs has two essential aspects, i.e. legal and informative aspects, and both aspects affect the textual features of this genre. The legal aspect entails that DPIs follow some certified drug law which governs what is to be included in the DPI and in what order. The German drug law in Germany, the Laws of Food and Drug Administration in the United Stated are two clear exemplifications. Informativity, on the other hand makes the primary function of DPIs and involves conveying a bulk of relevant and necessary information on the drug and its administration. (Ying & Yumei, 2010: 345). Drury (1984: 427) has pointed out that although some would argue that patients should not be fully informed about all side effects of a drug lest they refrain from taking the prescribed drug, or else it is enough for patients to follow the doctors' prescriptions, studies have shown that there is little evidence supporting this claim and that patients recall information better when being provided by written materials. Also, DPIs raise a challenge in the sense that a specialized subject matter is being rendered to non-specialized patients and thus issues of readability, level of technicality must be borne in mind when creating them. To this end, many countries have developed what is called readability testing and approved it as an obligation for successful issuance of DPIs and any patient information leaflets. According to Andriesen (2009: 28), a readability test involves that two groups consisting of 10 average persons are asked a number of questions after they read the DPI in question. If most of the

participants give correct answers, the DPI is probably clear enough. Otherwise, it should be revised until it passes the readability test. He has also argued that a translated DPI should also go through a similar readability test if it is to be clear and understandable.

As mentioned elsewhere in this text, translated Arabic DPIs are mainly for patients, since those DPIs addressing doctors and medical workers with specialized knowledge are usually not translated. Nevertheless, doctors are also meant to read these DPIs for quick access to the main components of a new drug.

For this study, 35 DPIs were collected in a semi random manner. DPIs in Palestine have been found to have more or less the same structure as DPIs in international markets. The following illustration of the DPIs structure is accredited to Ying and Yumei (2010: 344-345). Most DPIs are composed of three parts: Title, body copy and ending. The title is often in bold and big typeface in the middle of the first line. Body copy is the most important part of the DPI. According to the regulations from the Food and Drug Administration (FDA), the body copy of the DPI should include the following sections in sequence:

1) Drug name: including generic name, trade name and chemical name;

2) Description: a description of the properties of the medicine, including the color, shape and form in which the drug is prepared;

3) Composition: the qualitative and quantitative composition of the active substance;

4) Indications: symptoms or particular circumstances which indicate the necessity of a specific medical treatment or procedure;

5) Dosage and administration: information about the usage and dosage of the drug in various situations;

6) Adverse reactions: side effects which are normally listed in decreasing order of seriousness;

7) Contraindications: those who are forbidden from using the drug, such as pregnant and nursing mothers or any special conditions of sickness;

8) Precautions and warnings: information about the influence of the drug on the patients' behavior, possible symptoms, intolerance of specific materials, etc;

9) Drug interactions: effects of food, alcohol and other drugs on the drug;

10) Package: the size and form of the drug package;

11) Storage: the storage conditions, including the environment and temperature requirements;

12) And validity and Expiry date: the maximum in-use life of the drug.

The Ending generally covers such information as ratification number, manufacturer, addresses and contact information.

4.4.1 Findings of Telephone Interviews

Upon conducting telephone interviews with the pharmaceutical companies in Palestine, namely Jerusalem Pharmaceuticals Company, Birzeit Pharmaceutical Company, Pharmacare PLC, and Beit-Jala Pharmaceutical Company, it has been found that the working regulations in Palestine entail that all DPIs be translated into Arabic for patients. An inquiry regarding the adopted translation procedures of DPIs was answered yielding the following features of the process of DPI design and translation:

1. Due to the absence of drug innovators in Palestine, i.e. companies that produce and develop drug patents, all what the local pharmaceutical companies need to do is to decide upon which information to be extracted from the innovators online publications of the drug in question, followed by fulfilling the legal requirement of translating such information into Arabic. Nonetheless, the type and amount of information to be included in the DPI is not random but rather controlled by the regulations of the WHO- World Health Organization- as well as the Arabic Blog of Arab Union of the Manufacturers of Pharmaceuticals and Medical Appliances (AUPAM), an organization that was initiated in 1986 upon the recommendation of the Council of the Arab Ministers of Health, and it

includes in its membership the major pharmaceutical industries in the Arab world.

2. The staff in charge of translating DPIs into Arabic are pharmacists who have a long working experience.

3. The medical resources that are consulted in the translation process are mostly online such as: Pavilon medical dictionaries, Wikipidia, and other unspecified sites including the less specialized website of google translator, or else the translators rely on their own experience. Also, some translators reported to having consulted Hitti's dictionary as a last resort in case the term is not in circulation.

4. The approach toward selecting an Arabic equivalent among many is to go for the most commonly used one among the medical staff of doctors, pharmacists, etc.

5. In case the term is not found within the scope of their search, the term is simply transliterated.

6. The translated version is then sent over to the Ministry of Health to be revised for mistakes, and officially approved. Only then it is inserted in the drug package and distributed to the local pharmacies and clinics.

Thus, it is clearly noticed that the non-specialized patient is not given attention except occasionally. To be more specific, only one pharmacist translator reported involving the target patient yet only indirectly. Other pharmacist translators argued that accuracy is a much more important criterion than comprehensibility for patients, due to their belief that also doctors, on some occasions, read the Arabic version of such DIPs. The

claim was verified upon asking a number of doctors on that matter. Moreover, the pharmacist translators do not have adequate information to help them fully reach the target patients such as the patients' level of education.

After presenting the process of translating DIPs in Palestine, it can be noticed that it is by and large not an audience-oriented process, and that the inconsistency in translating medical terms in DIPs results indeed from the absence of clear image of the type and education level of the target audience, the use of different medical resources as well as making different lexical choices by translators from different companies. Also no readability test of any kind is at work in assessing the degrees of clarity and understanding.

As a final note, it could be said that medical books differ considerably from DPIs in terms of the type of target audience and how specialized the context of each is. This should be reflected in the translation procedures followed in each. The next chapter presents the findings and the results of the study.

Chapter Five

Types of Terminological Inconsistency in Medical Translation into Arabic

5.1 Introduction

The overarching aim of this study is to identify the main types of terminological inconsistency in medical translation from English into Arabic and to determine the most successful type of equivalence in terms of usability in specialized versus non-specialized contexts. Upon examining the aforementioned books and DPIs, the researcher identified five different types of terminological inconsistency. Hence, each type of such inconsistency is defined and an analysis of the collected data is included in this chapter. Moreover, the doctors' input on the more appropriate type of the Arabic equivalence they prefer to use and their comments and recommendations toward translating medical terms into Arabic in general are presented as well.

The results of the study are discussed under three major headings:

1. Types of terminological inconsistency.
2. The extent to which UMD can play a significant role in building Arabic medical knowledge.
3. Attitudes of practicing doctors toward the type of equivalence they prefer to use as well as toward medical translation into Arabic in general.

The results and conclusions of this chapter in relation to types of inconsistency and the most used type of equivalence in specialized and non-specialized contexts are based on true percentages and responses of doctors retrieved through the questionnaire.

5.2 Types of Terminological Inconsistency in Medical Translation into Arabic

Upon investigating medical books, medical dictionaries, and DPIs, five prominent types of terminological inconsistency have been identified within one medical book, across different medical books and dictionaries, and/or within DPIs.

5.2.1 Arabization vs. Descriptive Translation

The first type of terminological inconsistency appears when the same term is translated once by an arabized equivalence, and another time through using a descriptive translation as shown in the example below:

Anosmia: الخشام- فقد الشم

According to Al-Quran (2011: 444), when it comes to technical translation into Arabic in general, classical Arabic tends to favor a single-word term over a two-word term whenever possible, simply because the former can be both derivative and attributive being based only in the root-pattern system. The next two subsections examine to what extent arabization and descriptive translation are in circulation whether among specialists or with average people.

1. Medical Books and Dictionaries and DPIs

As mentioned elsewhere in this text, medical books and dictionaries are usually addressing the specialized category of doctors, students of medicine, pharmacists,.. etc while DPIs usually address average people. Terminological inconsistency of arabization versus descriptive translation has been found in DPIs and abundantly in medical books. In order to find the type of equivalence that is in circulation among specialists, doctors were asked to choose the type of equivalence they would normally use in Arabic medical contexts, i.e. with each other and with medical students as opposed to what they normally use with patients. Doctors were also given the room to suggest any other alternative translations in case none of the equivalences included in the questionnaire matched the most circulated ones.

Table (3) shows the medical terms with their one- word arabized equivalents and two-to-three-word descriptive equivalents along with the rate of respondents' preferences for each in both specialized and non-specialized contexts.

Table (3) Terminological inconsistency in relation to arabization vs. descriptive translation

No.	Medical term	Arabized equivalence	%	Descriptive equivalence	%	Suggested translations	%
			Specialized Contexts				
1	Anosmia	الخشام	0%	فقد الشم	99%	Anosmia	1%
2	Diplopia	الشفع	0%	ازدواج الرؤية	92%	ازدواج النظر	4%
						Diplopia	4%
3	Trachea	الرغامي	0%	القصبة الهوائية	99%	Trachea	1%
4	Ischemia	اقفار	1%	نقص التروية	80%	نقص الدم في العضو	16%
						Ischemia	3%
5	Peristalsis	التمعجية	0%	الحركات الحيوية للأمعاء	86%	حركة الأمعاء	7%
						الحركة الدودية	5%
						Peristalsis	2%
6	Duodenum	العفج	0%	الاثنا عشر	99%	Duodenum	1%
7	Hypothalamus	الوطاء	2%	ما تحت المهاد	63%	Hypothalamus	17%
						هايبوثالامس	18%
8	Eversion	الشنف	0%	انقلاب للخارج	97%	Eversion	3%
9	Inversion	الشتر	0%	انقلاب للداخل	97%	Inversion	3%
10	Parathyroid	الدريقة	2%	جارات الدرقية	93%	حول الدرقية	2%
						Parathyroid	3%
11	Angina pectoris	خناق	0%	ذبحة صدرية	99%	Angina pectoris	1%
12	Toe	أبخس	0%	إصبع القدم	99%	Toe	1%
13	Antibiotics	الصادات	0%	المضادات الحيوية	99%	Antibiotics	1%
14	Soft palate	الحفاف	0%	الحنك الرخو/اللين	86%	سقف الحلق اللين	14%
15	Radiologist	الشعاعي	1%	اختصاصي الأشعة	98%	أخصائي الأشعة	1%
16	Anorexia	قمه/قهم	0%	فقد الشهية	94%	Anorexia	6%
No.	Medical Term	Arabized equivalence	%	Descriptive equivalence	%	Suggested Translations	%
17	Calf (muscles)	الربله	0%	عضلات العجل	7%	عضلات الساق	2%
				بطة الساق	86%	Calf	5%
18	Paronychia	داحس	2%	التهاب الجلد حول الأظافر	90%	Paronychia	8%
19	Diet	القوت	2%	الحمية الغذائية	92%	رجيم	3%
						Diet	3%

	Total	Arabized equivalence	1%	Descriptive equivalence	92 %	Suggested translations	7%
Non-Specialized Contexts							
No.	Medical Term	Arabized equivalence	%	Descriptive equivalence	%	Suggested Translations	%
1	Diplopia	الشفع	2%	ازدواج الرؤية	94%	ترى الواحد اثنين	4%
2	Flushing	وهيج	51%	احمرار الجلد مع احساس بحماوة	45%		
		بيغ	2%				
		هبو	2%				
3	Fullness	تطبل	2%	شعور بالشبع	92%	امتلاء	4%
						الشعور بالتخمة	2%
4	Ischemia	اقفار	0%	نقص التروية	75%	نقص وصول الدم	20%
		ذوى	0%			نقص الأوكسجين والدم في الأنسجة	5%
5	Paronychia	داحس	3%	التهاب الجلد حول الأظافر	97%		
	Total	Arabized equivalence	12%	Descriptive equivalence	81%	Suggested translations	7%

The table above shows two groupings of data classified in both categories of specialized and non-specialized contexts. The first group consists of 19 terms collected from medical books on the basis of inconsistency between arabization and descriptive translation. Although this group of examples measures terminological inconsistency among medical books, and dictionaries, any different translation found in DIPs but was not found in medical dictionaries was also included in the questionnaire since people in charge of translating DPIs stated that they look for the most commonly used Arabic terms among doctors, and thus such terms should be included in an attempt to reach credible results by taking into account all the available Arabic translations. This procedure is followed in all subsequent analyses.

It is very clear from table (3) that descriptive translation is more acceptable than arabization as far as the terms usability is concerned. In fact the percentage of using the arabized equivalents ranges from 0% to a maximum of 2% for individual terms. This means that arabized terms are hardly used at all among doctors. According to Al-Quran (2011: 444) attempts to translate some foreign terms into Arabic by one-word equivalence have failed because such one-word equivalences are not conveniently pleasing in their pronunciation and thus do not suit people's taste, though they are highly recommended by Arab philologists. Thus, this negative attitude can be due to the fact that some arabized terms as '' الخشام، قمه،أبخس,etc" do not appeal to the common taste.

On the other hand, the percentage of selecting descriptive translation reaches up to 99% for some terms, which means that doctors are more willing to use the descriptive equivalent over a one-word arabized term. Moreover, the percentage of suggesting translations other than the ones retrieved from the previously mentioned sources does not exceed 7% of the total. In fact, even the suggested translations fall for the most part under descriptive equivalents, e.g. سقف الحلق اللين, حركة الأمعاء, نقص الدم في العضو , ..etc. This attitude does emphasize the usability of the descriptive equivalent when Arabic is used in specialized medical contexts.

However, and as far as individual terms are concerned, suggesting alternative descriptive translations stems from the obscurity attached to the established descriptive translations. To illustrate, the term "ischemia", for

example, involves, according to Merriam-Webster online medical dictionary, "a deficient supply of blood to a body part (as the heart or brain) that is due to obstruction of the inflow of arterial blood (as by the narrowing of arteries by spasm or disease). Thus to describe "ischemia" as "نقص التروية" does not fully and easily express the nature of the disease while "نقص الدم في العضو" is more comprehensible. As for the term "soft palate", the descriptive translation of "سقف الحلق اللين" is the highly accessible term simply because this is what happened to be in common use. Although the word " حنك" is a common word to be used among laity as well, it is not used quite often to refer to the upper part of the oral cavity in particular.

In contrast, the percentage of purely borrowing foreign term, or alternatively using transliteration, has been relatively high for some terms as in the case of "hypothalamus" with 17% of doctors using the term as is and 18% of them transliterating it into "هايبوثالامس", compared with the low percentage of borrowings or transliteration for the other terms. This preference for borrowing is explained in that doctors would purely borrow or especially transliterate medical terms which are highly specialized even if they are being used in Arabic medical contexts . Also, the descriptive translation "ماتحت المهاد" is not adequately accessible. By way of illustration, the term "hypothalamus" refers to a part of the brain that is located under another part which is "thalamus"- the prefix -hypo means "under". Looking into the translation of the term "thalamus", one finds its

arabized equivalence of "المهاد". Thus the familiarity with the descriptive equivalence "ماتحت المهاد" is conditioned by the familiarity of the arabized equivalence "المهاد". And since arabization, as the table above shows, is not adequately circulated, the descriptive translation of hypothalamus" as "ماتحت المهاد" can be in turn less circulated. One possible explanation for this incline toward purely borrowing or using the closest form of transliteration of the highly professional terms in general is that such terms, though highly familiar to doctors, are barely brought up in daily life. Hence, doctors themselves have not developed adequate translation to use among each other especially that the need to translate such terms is not urgent because most of the doctors have received their medical education in English. This reveals a deficit in the translation process into medical Arabic when it comes to highly specialized terms that are quite familiar to doctors but are not encountered very often and thus remain sometimes untranslated. Also, doctors tend to use descriptive translations over arabization because the latter is less accessible or even inaccessible at all to doctors in addition to the fact that they are not appealing to the common taste. Therefore, with descriptive translation scoring 92 %, suggested translations scoring 7 %, and arabization scoring 1%, it can be concluded that descriptive translation is more acceptable than arabization in specialized Arabic medical contexts.

The second group involves an alteration between arabization and descriptive translation found in DPIs. It can be first noticed that once again descriptive translation occupies a higher ranking over arabization in terms

of usability with the former being 81% compared to 12% for arabization. It is also important to notice that the rate of other suggested translations is also low (7%) and falls for the most part in the category of descriptive translation. However, as for as individual terms are involved, the one-word-arabized term of "وهيج" is used almost equally with the descriptive translation "احمرار الجلد مع احساس بحماوة", and this is attributed to the fact that the word "وهيج" is as understood and accessible as the descriptive translation and economy is favored if it is accompanied with a high degree of accessibility. This is, however, not the case with the other less accessible arabized terms such as "تطبل", "داحس", ...etc.

As for the descriptive translation of ischemia "نقص التروية", the rate of its usability is relatively low (75%).Thus, the descriptive translation suggested by the doctors such as "نقص وصول الدم" is more accessible as explained in the previous discussion. Also, Arabic language makes a perfect means of communicating with the average person, and this is evident in the fact that all respondents reported acceptability to use Arabic unlike what the results showed in the previous section of specialized contexts with specialized people. In other words, doctors are willing to use pure borrowings as well as descriptions in specialized contexts while only descriptive translation is used in non-specialized contexts.

As a final note, it can be seen that the two-word descriptive translations are generally favored over the one-word arabization whether in specialized or non-specialized contexts.

5.2.2 Arabization vs. Transliteration

The second type of terminological inconsistency found in medical translation into Arabic involves the rather common dichotomy of arabization versus transliteration. There are infinite arguments as to whether medical terms should be translated or transliterated. Haddad (1997: 12) has explained that due to the emergence of new terms that may have no equivalence in Arabic, transliteration serves as a transitional stage until a sound translation is found. This type of inconsistency is the most common one, and it involves translating the medical term by arabizing it in some places and transliterating it in others. Examples are: Pancreas: البنكرياس، المعثكلة   Prostate:البروستات، الموثة

Such type of terminological inconsistency has been found in medical books and DPIs. However, as mentioned elsewhere in the text, translators of DPIs tend to transliterate more than do translators of books. This is attributed, according to the interviews' findings, to the fact that translators of DPIs employ terms that are in use among medical staff, and that they depend on their experience rather than consulting Arabic dictionaries very often. Yet, since there is no clear established methodology of translation in either context and that translation efforts remain to a large extent individual, terminological inconsistency takes place. Based on what is said, it is expected that transliteration reports higher use than arabization in specialized contexts. This section presents the inconsistent alteration between arabization and transliteration and the percentage of usability for each type of equivalence in specialized and non-specialized contexts.

1. Medical Books and Dictionaries

Eleven terms were detected problematic in relation to this type of inconsistency among medical books and the UMD. Table (4) below shows responses of doctors in relation to the type of equivalence they use in Arabic specialized medical contexts as long as this type of inconsistency is concerned.

Table (4) Terminological inconsistency in relation to arabization vs. transliteration in medical books and dictionaries.

No.	Medical term	Arabized equivalence	No.	Transliterated equivalence	No.	Suggested translations	%
1	Pancreas	المعثكلة	2%	البنكرياس	97%	Pancreas	1%
2	Carina	الجؤجؤ	4%	الكارينا	70%	مكان تشعب القصبة الهوائية	16%
						لا أعلم	9%
						Carina	1%
3	Sarcoma	غرن	3%	ساركوما	89%	ورم سرطاني	3%
						Sarcoma	5%
4	Gangrene	تموت/موات	2%	غنغرينة/غانغرين	95%	Gangrene	2%
						موت الخلايا	1%
5	Peritoneum	الصفاق	8%	البريتون/ البريتوان	72%	Peritoneum	2%
						غشاء البطن	18%
6	Prostate	الموثة	0%	البروستات	99%	Prostate	1%
7	Ion	شاردة	1%	أيون	96%	Ion	3%
8	Plasma	المصورة	0%	بلازما	97%	Plasma	1%
						مصل	2%
9	Cytoplasmic	هيولي	1%	سيتوبلاسمي	97%	Cytoplasmic	2%
10	Virus	الحمة	0%	فيروس	99%	Virus	1%
11	Enzyme	انظيم	0%	انزيم	98%	خميرة	2%
	Total	Arabized Equivalence	2%	Transliterated equivalence	91%	Suggested translations	7 %

One glance at the table above concludes that transliterated terms (91%) are more used than arabized ones (2%). One possible explanation for this situation might be that most doctors have received their medical education in English and thus prefer to use transliteration.

Moreover, most doctors are not aware of any of the arabized terms because such translations come too late meanwhile doctors have already established a means of communication among each other whether it be borrowing or transliteration. Al-Zarkan (1998) cites the opinion of one of the international scientific organizations toward the work of Arab academies in that it believes that such academies care about linguistic matters over scientific issues; thus the terms they arabize come to see the light too late for users who need such terms quite rapidly given the speedy developments in scientific fields in general. Also, and more importantly, low accessibility of the arabized terms is a major factor which contributes to the preference of transliteration over arabization in terms of usability. Accessibility in this sense entails that the referents of terms be easily and directly identified. It is worth mentioning that accessibility maintains a positive relationship with circulation and usability, and that the increase of one leads to an increase in the other. Some of the transliterated terms such as ‟البنكرياس″ ,‟سيتوبلاسمي″ ,‟انزيم″,‟ فيروس″ ,‟البروستات″ and ‟غنغرينة″, which have reported the highest rates of use as the table shows, have become, through circulation, established basic terms that even educated non-specialized average users can recognize them without difficulty. This is evident in the fact that none of these six terms were detected inconsistent but rather unanimously transliterated in DPIs which are usually written for the general audience. However, words such as "carina", and "peritoneum", though being preferred in the transliterated form, reported relatively low rates as "70%, 72%" with the rates (16%, 18%) using descriptions such as

"غشاء البطن" and "مكان تشعب القصبة الهوائية", respectively. Also, the term "carina" is not clinically important in everyday practice and does not occur very often in the first place, and thus to say "كارينا" does not much ring a bell even with doctors while the descriptive form is easily followed whenever the term is needed. In other words, the foreign term itself is not in circulation, and this is evident in the fact that 9% of the doctors responded by " I don't know". As for the word "peritoneum" the transliterated term "البريتون" is relatively inaccessible because it is more or less different from the original form, i.e. it does not assimilate to the foreign term, neither is it an originally Arabic term while the descriptive translation of "غشاء البطن" is quite accessible. In conclusion, doctors tend to use whatever equivalents are deemed more accessible and transliteration reported to be the highest.

2. In DPIs

The following terms have been found inconsistent in DPIs in relation to arabization versus transliteration as table (5) shows.

Table (5) Terminological inconsistency in relation to arabization vs. transliteration in DPIs.

No	Medical term	Arabized equivalence	%	Transliterated equivalence	%	Suggested translation	%
1	Hallucination	هذيان	52%	هلوسات	48%		
2	Tetanus	الكزاز	82%	التيتانوس	18%		
3	Asthma	الربو	75%	الأزما	25%		
4	Peritoneum	الصفاق	14%	البريتون	26%	غشاء البطن	60%
5	Clinical	سريري	90%	اكلينيكي	10%		
	Total	Arabized equivalence	63%	Transliterated equivalence	25%	Suggested translation	12%

It is clear that for non-specialized patients, and as long as this type of inconsistency is involved, arabization (63%) is more used with patients than transliterated equivalents (25%). When the two options are available, highly accessible arabization is preferred over transliteration as a more guaranteed path toward full comprehensibility on the part of non-specialized patients. However, this generalization is confined to the terms investigated here only. In other words, arabization is preferred over transliteration in the case where terms are found inconsistent in relation to this type of inconsistency in DPIs . Terms like pancreas, prostate, and virus, were all transliterated consistently in DPIs as mentioned earlier, and thus are excluded from being investigated in the present survey.

By a different token, a term like "peritoneum", which is a professional term and falls under the category of LSP – language for specific purposes-, is described for patients as being possibly"غشاء البطن" (60%) rather than arabized or transliterated if comprehensibility is to be maintained in doctor-patient communication. It can also be noticed that although arabization is preferred, the percentages of using one equivalent over another are generally close for some terms -as for "Hallucinations"- compared with the semi unanimity over the type of equivalent used in specialized contexts.

As a final note, it could be noticed that doctors use transliteration much more than arabization when they are involved in specialized Arabic medical texts. This finding is proved to be further true as it matches what translators of DPIs stated in that the reason why they include transliteration

in translated DPIs is because this is what is in common use among doctors. However, DPIs translators need to take a higher consideration of their audience. It is not doctors whom they are addressing but rather uninformed patients. Thus, according to the present findings, arabization rather than transliteration should be used in DPIs as long as inconsistency between these two types of equivalence is concerned.

5.2.3 Transliteration vs. Descriptive Translation

The third type of terminological inconsistency in medical translation into Arabic involves the alteration between transliteration and descriptive translation. An example is the term "Anemia" which is once transliterated as "أنيميا" or described as "فقر الدم". Haddad (1997: 49-50) has pointed out that descriptive approach to translation can be a reasonable solution between the unnatural use of transliteration and the low familiarity, clarity and simplicity of arabization. This section tries to measure to what extent transliteration and descriptive translation are used in specialized and non-specialized contexts.

1. In Medical Books and Dictionaries

Six terms have been found inconsistent in medical books as long as the inconsistent alteration between transliterated and descriptive equivalences is concerned.

Table (6) Terminological inconsistency in relation to transliteration vs. descriptive translation in medical books and dictionaries.

No	Medical term	Descriptive equivalence	%	Transliterated equivalence	%	Suggested translation	%
1	Herpes zoster or shingles	الحلأ المنطقي او المناطقي	4%	هربس زوستر (الشنغلز)	73%	حزام نار	10%
		عقبولة المنطقة	0%	هربس نطاقي	10%	Herpes zoster	3%
2	pheochromocytoma	ورم القواتم	10%	الفيوكروموسايتوما	85%	ورم الغدة جار الكلوية	5%
3	parasympathetic	نظير الودي	25%	الباراسمباثاوي	73%	Parasympathetic	2%
4	Colitis	(التهاب) المعي الغليظ	8%	(التهاب) القولون	92%		
5	Influenza	النزلة الوافدة	3%	انفلونزا	97%		
6	Hemodialysis	التحال/الديال الدموي	3%	الديلزة الدموية	6%		
		غسيل كلوي	91%				
	Total	Descriptive equivalence	24%	Transliterated equivalence	73%	Suggested translation	3%

Transliteration reports a higher usability among doctors in specialized contexts (73%) than descriptive translation (24%) as table (6) indicates. Doctors use the transliterated equivalence more than any other equivalences in favor of economy and brevity. Although translating medical terms into equivalent descriptions might solve problems of clarity, and familiarity as Haddad (1997) has suggested, Al-Quran (2011: 448) has pointed out that descriptive translations do not correspond to the linguistic criteria of brevity in use and ease in pronunciation. Also, another constraint on using descriptive translations involves how often the foreign term occurs in a given text. If it occurs quite often, then the use of the lengthy Arabic translation for the foreign technical term could impair rather than facilitate the process of communication. An example of a lengthy descriptive translation is "العضلة القصية الترقوية الخشائية" for the term "Sternocleidomastoid ". Because of these constraints, attempts to adapt loan words or transliterated words were made. This however, does not rule out the usefulness of descriptive translation all in all. As mentioned earlier, and as long as individual terms are concerned, doctors do use descriptive translations with each other on certain occasions. In other words, a descriptive translation of a reasonable length can be quite adequate in both cases where the original foreign term does not ring a bell to most doctors based on its clinical insignificance and thus here descriptive translation serves better, or in cases where the term indicates a condition that occurs so often in doctor-patient interactions.

To illustrate, the term "hemodialysis" is used more in its descriptive form "غسيل كلوي" than in its transliterated form because this term refers to a condition that is so common and so frequently occurring to people in Palestine, at least, that it was an urgent need to describe it to average people. Thus, the term "hemodialysis" was translated descriptively first for patients then slashed its way through to be used among doctors because it is of a reasonable length and, being circulated, it is familiar.

As for the remaining five terms, they are specifically transliterated for the following reasons:

• Some terms in their transliterated form have spread faster than other types of equivalence and become even an integrated part of the general knowledge of the average person and is used on everyday basis, not as medical terms but as a part of LGP- language for general purposes as in the case of "القولون", and "انفلونزا".

• Terms indicating conditions and anatomical parts that are less encountered in doctor -patient interactions, such as "pheochromocytoma", Herpes zoster", and "parasympathetic tend to be transliterated as "الفيوكروموسايتوما", "هربس زوستر", "باراسمبثاوي". This can be attributed to the fact that such transliterated terms are brief and precise because they are closer to their original form and thus very accessible to doctors.

2. In DPIs

To translate the term descriptively or to transliterate it has been also a case to be found in DPIs as table (7) illustrates below.

Table (7) Terminological inconsistency in relation to transliteration vs. descriptive translation in DPIs.

No	Medical term	Descriptive equivalence	%	Transliterated equivalence	%	Suggested translation	%
1	Herpes zoster or shingles	الحلأ المنطقي او المناطقي	0%	هربس زوستر(الشنغلز)	12%	حزام نار	78%
		عقبولة المنطقة	0%	هربس نطاقي	10%		
2	Pheochromocytoma	ورم القواتم	10%	الفيوكروموسايتوما	10%	ورم الغدة فوق الكلوية	80%
3	Colitis	(التهاب) المعي الغليظ	10%	(التهاب) القولون	90%		
4	Influenza	النزلة الوافدة	6%	انفلونزا	94%		
5	Hemodialysis	ديال/تحال دموي	0%	الديلزة الدموية	6%		
		غسيل كلوي	94%				
6	Anemia	فقر الدم	84%	أنيميا	16%		
	Total	Descriptive equivalence	34%	Transliterated equivalence	40 %	Suggested translation	26%

It can be concluded from table (7) that terms are preferred to be described over transliterated for patients in general while this is not the case in specialized contexts where transliteration is preferred over description as it has been shown in table (6). Although transliteration reports 40% of use, and descriptive translation reports 34%, the claim that descriptive translation is used more than transliteration with non-specialized patients is still valid. To illustrate, the rate 26% assigned to the suggested translations involves descriptive translation which can be added to the previous rate (34%) of using descriptive translation making a total of 60%. Afaf and Matthias (2011:27) have stated that for any given medicine, necessary information needs to be explained clearly in the patient's native language in any country where the drug is approved in the respective market. At the level of individual terms, only "influenza" and "colon" are used in their transliterated form due to the fact that they are words of everyday communication among average people as mentioned earlier. As for terms that are rather described, it is worth mentioning that some descriptive translations are more accessible than others, and this is why not all provided descriptions are used with patients. For example, the descriptive equivalents such as "عقبولة المنطقة ,الحلأ المنطقي أو المناطقي", for the term "Herpes zoster or shingles", and "ورم القواتم" for "Pheochromocytoma" are hardly accessible to patients compared with local descriptive equivalents "حزام النار", and "ورم الغدة فوق الكلوية". Similarly "غسيل كلوي" is more common and accessible than "التحال الدموي".

In conclusion, it could be said that transliteration is more used than descriptive translation in specialized contexts while descriptive translation rather than transliteration makes a perfect translational equivalence when addressing non-specialized patients through DPIs, and that translators of DPIs should avoid the transliterated equivalence unless it is an established basic form.

5.2.4 Transliteration vs. Arabization vs. Descriptive Translation

The fourth type of terminological inconsistency involves the unsystematic alteration between the three main types of equivalence in medical translation into Arabic i.e. transliteration, arabization, and descriptive translation in both specialized and non-specialized contexts. Some terms have been found to be translated by all three types of equivalence. For example, the term "cataract" has three translations as "الساد،الكاتاراكت، إعتام عدسة العين". This section aims to measure collectively the most successful type of equivalence among others in the specialized contexts of medical books as opposed to the non-specialized contexts of DPIs.

1. In medical Books and Dictionaries

As mentioned earlier, the present study targets terms that are inconstant in translation in relation to different types of equivalence. Thus, even if a term has been translated inconsistently via the alteration between two types of equivalence in medical books, for example, and a third type of equivalence was found in DPIs, the researcher included all three equivalences when investigating terminological inconsistency in medical

books. The same is for DPIs. The reason for this behavior, the researcher believes, is that conclusions about the most used type of equivalence would not be complete unless all possible equivalences that reported occurrence in whatever context are taken into account and made available for doctors from which to choose.

Table (8) shows the medical terms along with their three types of equivalence.

Table (8) Terminological inconsistency in relation to arabization vs. transliteration vs. descriptive translation in medical books and dictionaries.

No.	Medical term	Arabized Equivalence	%	Transliterated equivalence	%	Descriptive equivalence	%	Suggested translation	%
1	Libido	شبق	4%	الليبيدو	41%	الشهوة الجنسية	55%		
2	Endothelium	البطانه	28%	الإندوثيليوم	70%	البطانة الوعائية الفارشة	2%		
3	Allergy	أرجية	2%	أليرجية	25%	الحالة التحسسية	58%	حساسية	15%
4	Cataract	الساد	0%	الكاتاراكت	48%	إعتام عدسة العين	38%	ماء بيضاء	14%
Total		Arabized Equivalence	9%	Transliterated equivalence	46%	Descriptive equivalence	38 %	Suggested translation	7%

Doctors tend to use the transliterated equivalence (46%) among each other when they are involved in specialized Arabic medical contexts. As stated earlier, this attitude is due to the fact that most doctors have received their education in English, and thus they use transliterated forms as being the closest equivalence to the language of their medical education, especially with highly specialized words such as "endothelium", and that such transliterated terms are often short, informative, and not confused.

However, the rate of using descriptive translation is significant as well with 38% in addition to 7% of the suggested translations which also involve descriptive equivalents making a total of 45%. According to Dr. Shaji, though doctors tend to use transliteration for the most part, descriptive translation is also used, especially with the terms that could possibly occur in non-specialized contexts of doctor-patient interactions. In other words, what is used in non-specialized contexts could affect the nature of the type of equivalence used in specialized contexts. This is even further evident in the fact that three of the four terms were found occurring in DPIs as well. There are two possible explanations for this approximation between descriptive translation and transliteration in terms of usability in specialized contexts:

- Medical Arabic is mainly used for patients and thus any credible translation used with patients is of a higher frequency than any types of equivalence used in specialized Arabic medical contexts.

- The fact that medical Arabic in specialized contexts occupies a second ranking compared with English indicates that it is only used, as

reported from interviewing doctors, when English fails to communicate the message. In other words, Arabic is used to further describe a term if the term, purely borrowed or in its closest form of transliteration, is not fully accessible to doctors for whatever reason as in the case when doctors have received their education in different languages, or in the case that the foreign medical term is not encountered very often in medical texts and thus remains to some extent vague as in the case of "libido".

Arabization does not exceed 9% of the total average of use in comparison with other types of equivalences.

As far as the above terms of "cataract" and "allergy", the first explanation seems more to be the case of why doctors reported using both descriptive and transliterated equivalences almost equally as such terms refer to conditions that need to be described for patients at some point.

In conclusion, one could make a generalization that doctors tend to use transliteration in general unless medical terms indicate conditions-mainly diseases- that are commonly occurring in people's lives, or else the foreign medical term itself is not quite common to doctors, and thus would remain vague in its transliterated form. Here, descriptive translation is used even among doctors.

1. In DPIs

In relation to this type of terminological inconsistency, six terms were found translated inconstantly in DPIs as table (9) shows below.

Table (9) Terminological inconsistency in relation to arabization vs. transliteration vs. descriptive translation in DPIs.

No.	Medical term	Arabized equivalence	%	Transliterated equivalence	%	Descriptive equivalence	%	Suggested translation	%
1	Edema	وذمة	11%	أوديما	20%	الاستسقاء	35%	تجمع ماء	34%
2	Glaucoma	زرق	15%	جلوكوما	10%	ارتفاع ضغط العين	65%	ماء زرقاء	10%
3	Libido	شبق	4%	الليبيدو	3%	الشهوة الجنسية	93%		
4	Urticaria	شرى	35%	الارتكاريا	15%	استكباب الجلد	9%	حساسية وحكة شديدة	41%
5	Allergy	أرجية	2%	أليرجية	7%	الحالة التحسسية	68%	حساسية	23%
6	Cataract	الساد	2%	الكاتاراكت	8%	إعتام عدسة العين	60%	ماء بيضاء	30%
Total		Arabized equivalence	11.5%	Transliterated equivalence	10.5%	Descriptive equivalence	55%	Suggested translation	23%

Unlike the approximant rates of using descriptive translation and transliteration in specialized contexts especially with terms whose odds of being brought up in non-specialized contexts are relatively high, there is a clear disparity in the rates of using different types of equivalence with uninformed patients. Doctors resort to descriptive translation as being the most usable equivalent in non-specialized contexts with 55% plus 23% for the suggested translation, which involves descriptive translation as well, making a total of 78%. According to Dr. Shaji, the descriptive equivalent is always the opted choice when dealing with non-specialized patients for two main reasons. First, descriptions provide more details about the conditions associated with certain medical terms, the matter that makes the translational equivalence more accessible and fully digested by uninformed patients. Secondly, using purely general Arabic words grants a full understanding unlike transliteration which fails to communicate comprehensible message, or arabization which offers too succinct information for non-specialized patients. Nonetheless, and as long as individual terms are concerned, some descriptive translations are reported to be more used than others due to disparity in the degree of their accessibility. To illustrate, the descriptions of " تجمع الماء, حكة جلدية و حساسية شديدة" for "edema" and "urticaria" respectively are simply more accessible and easily understood by average people compared with the other provided descriptions as "استكباب الجلد, الاستسقاء" respectively.

Having comparatively analyzed the relevant data, the rates of usability assigned to each type of equivalence can be calculated

accumulatively to determine the most used type of equivalence in the two contexts of specialized and non-specialized interactions as table (10) indicates below.

Table (10) Percentages of usability for the three types of equivalence in specialized and non-specialized contexts.

	Transliteration	Descriptive translation	Arabization	Suggested translation	Total
Specialized Context	52.5%	38.5%	3%	6%	100%
Non-specialized Context	19 %	42.5%	21.5 %	17%	100%

According to the above table, it can be concluded that doctors tend to use transliteration for the most part (52.5%) among each other or with medical students, and this is not surprising as most doctors have received their medical education in English or other close languages; because the transliterated equivalence is the closest to the original, it is common, short and informative. Also, descriptive translation is used secondly (38.5%) . Doctors tend to use descriptive translation when the foreign medical term itself is not quite common to doctors based on being clinically not of a great importance, thus leading to a slight use of the term, a matter that could result in losing familiarity with the original form or its close form of transliteration. The second reason for such relatively high use of descriptive translation in specialized contexts, as clarified earlier, is based on the fact that Arabic is mainly used with average people for whom a terminological description is highly used, and that it could prevail among Arab doctors in

specialized Arabic medical contexts, too. As for arabization, the rate of usability does not exceed 3%. This attitude can be attributed to the fact that doctors are not familiar with the this type of equivalence, and such arabized terms can be completely inaccessible to them due to lack of exposure and distribution. The percentage of suggested translation also remains low (6%). However, negative conclusions can be made about which type of equivalence prevails in the suggested alternatives since such alternatives are suggested to deal with individual cases, and that the selection of medical terms in the present study has been random leading to negative conclusions at the level of individual terms. Suggested translation involved descriptive, arabized, transliterated and purely borrowed equivalences.

As for non-specialized contexts, the ranking of types of equivalence in terms of usability is almost reversed. Descriptive equivalence is strikingly the most used type with the rate of 42.5% , almost the double of rates of arabization (21.5%) and transliteration (19%). Moreover, there seems to be a consensus toward preferring descriptive translation with non-specialized audience, and this is evidenced in the fact that all the suggested translations are of descriptive equivalence. Thus, it is safe to say almost 60% of doctors tend to describe conditions to their patient.

These findings can sum up the core problem of terminological inconsistency. To put it in other words, that terminological inconsistency has been reported among specialized materials of medical books on one hand, and among the non-specialized materials of DPIs on the other hand

strips down the fact that audience and context of use are by no means considered in the translation process. Using different types of translational equivalence for the same English medical term in the same context of specialized or non-specialized suggests that translators do not place their terminological choices on a clear contextual basis, the reason that leads to inconsistency even in targeting the same type of audience. Context can be seen as a guidance toward which lexical choices should be made. Melby and Foster (2010:3) have quoted Baker:

> "translation scholars have so far largely ignored the obvious centrality of the notion of context to their own discipline."

She suggests that instead of regarding context as "a set of restrictions on what we can or cannot achieve in translation and other communicative events," it can be more productive to "recognize context as a resource."

The fact that Arabic medical dictionaries follow different nomenclature, and thus are inconsistent in their lexical entries does not in fact justify the terminological inconsistency found in contextual translation. Rather, it should be borne in mind that it is the target audience, and what they could recognize that play the major role in the decision-making process, i.e. in deciding which type of equivalence to use. Considering such audience can largely lessen terminological inconsistency. Additionally, terminological inconsistency in relation to different contexts could not be possibly measured as context in translating medical English into Arabic was not considered by translators as a relevant factor to an adequate extent.

Wiseman (2001) has investigated translation strategies in medicine and concluded that translators responsible of choosing terms in the target language rarely leave any records of how they made their choices. He has further pointed out that, when it comes to medicine, one needs to distinguish between lay terms in everyday language and technical terms in the specialized language. According to him, English and German languages follow source-oriented translation strategies of using loans (borrowing) and using loan translations (well motivated literal translation, or creating new terms) respectively when translating technical Latin terms while both languages tend to replace lay terms with German and English lay terms. This indicates that some patterns are followed in dealing with two different levels of professionalism which are themselves represented in the Arab doctors' tendency toward using transliteration for specialized audience and descriptions for average people. However, it goes without saying that analogy cannot be made between the SL and TL audience given the fact that they belong to different cultures and may have different levels of education, i.e. what is seen comprehensible to one audience does not necessarily imply comprehensibility to another audience of another language. For example, Danish translation needs to make a borderline between Latin-based medical terms for specialized use and other terms for the layman, a distinction that is absent in the source language of English in which no non-specialized alternative exists and consequently Latin-based medical terms continue to be used with laity (Zethsen, 2004: 34). Thus, context and type of audience and their level of education can offer leading

insights to the translator into which translation procedure s/he should adopt. As long as medical translation into Arabic is concerned, TL oriented translation procedures such as description should be employed when translating for Arab non-specialized audience while SL oriented translation procedures such as transliteration are opted for with specialized audience.

In conclusion, this section has investigated terminological inconsistency in relation to the different three types of equivalence. However, terminological inconsistency does not only take place between different types of equivalence but also among them, too. Hence it is possible to find a single English medical term inconsistently translated with two or three arabized terms, or two or three descriptive translations. The next section illustrates this point fully.

5.2.5 Inconsistency in TL Equivalence

The fifth and last type of terminological inconsistency involves the unjustified alteration among TL equivalences. As mentioned earlier, many Arab purists call for arabization as the only reliable Arabic language equivalence based on the grounds that arabization proves Arabic language to be able to accommodate all sciences and knowledge. Although their claim seems quite sound in that an arabized equivalent to each of the investigated terms was found, and this thereby exonerates the language from any linguistic or semantic inadequacies, low rates of using arabization against transliteration and descriptive translation suggests a usability deficit

instead. Taken on its own, arabization has been found inconsistent in itself making the possibility of using arabization as a credible translation procedure highly questioned. What governs the extent to which arabized terms are acceptably used is the degree of accessibility of the arabized term and how professional the original foreign term is. In other words, in the case of terms that have more than one arabized equivalence, one equivalence prevails over others because it is more accessible, and its referent can be easily identified. And if the English term is highly professional, none of the arabized equivalents is acceptably used. By the same token, different descriptive translations have been assigned to the same medical term resulting in terminological inconsistency in medical Arabic. The use of one descriptive translation over the other or the abandonment of all in favor of transliterations or even purely borrowings also depends on degrees of accessibility and professionalism. It is worth mentioning that inconsistency in TL equivalence has been found abundantly in specialized materials of medical books and dictionaries but to a much lesser extent in DPIs for a number of reasons. First, translators of medical books tend to arabize more than translators of DPIs, and Arabic language is a jungle of synonyms like any other language. Secondly, the books investigated for this study were produced in different Arab countries of Syria, Jordan, and Kingdom of Saudi Arabia which means that variation in TL equivalence might be related to the fact that different arabized terms are employed in different countries. Thirdly, translators of medical books depend heavily on Arabic dictionaries. Fourthly, medical books are full of

highly specialized terms. The more specialized the term, the more difficult it is to find an agreed upon arabized equivalent. DPIs, on the other hand, tend to use common arabized words; otherwise they go for descriptions or transliteration. Also, DPIs were collected mostly within approximate, rather than distanced geographical area. More importantly, translators of DPIs do not consult Arabic dictionaries very often, and this is evidenced in the fact that none of the interviewee translators mentioned the UMD as a reference. Though one of the translators reported using Hitti, he stressed the point that Hitti is used as a last resort. Finally, most of the terms found in DPIs are less professional and occur in almost everyday life. Thus, at least unconscious agreement upon certain translations is entailed by regular circulation. Inconsistency in TL equivalence has been divided into two categories as follows:

1. Circulated vs. non-circulated translations.

2. Non circulated translations.

Examples in both specialized and non-specialized contexts have been found within the first category while only examples in specialized contexts have been found within the second category.

1. Circulated vs. Non Circulated TL Equivalence

Some of the terms were translated inconsistently by synonyms of the same type of equivalence. This section presents the first category of terms that have two TL equivalences where only one of the two equivalences is in common use in both specialized and non- specialized contexts.

Table (11) Inconsistency in TL equivalence (circulated vs. non circulated)

		Specialized Contexts					
No.	Medical terms	Translation (1)	%	Translation (2)	%	Suggested translation	%
1	Injection	زرق	1%	حقن	97%	ابرة	2%
2	Rickets	رخد	1%	الكساح	96%	ريكتس	2%
						نقص الكلس في العظام	1%
3	Valves	دسامات	1%	صمامات	99%		
4	Rim	حتار	0%	حافة	97%	رم	3%
5	Dizziness	دوام	1%	دوخة	97%	عدم اتزان	2%
		سدر	0%				
6	Drowsiness	وسن	3%	نعاس	94%	قلة تركيز ودوران	3%
7	Syndromes	تناذر	3%	متلازمة	90%	سندروم	7%
8	Tenderness	مضض	2%	ايلام	85%	ألم عند اللمس	10%
						صلابة	3%
9	Tuberculosis	تدرن	11%	سل	89%		
10	Medulla oblongata	البصلة السيسائية	4%	النخاع المستطيل	90%	Medulla oblongata	6%
11	Myocardial infarction	احتشاء العضل القلبي	11%	الجلطة القلبية	89%		
No.	Medical terms	Translation (1)	%	Translation (2)	%	Suggested translation	%
12	Macula lutea	اللطخة الصفراء	6%	البقعة الصفراء	76%	Macula lutea	10%
						ماكيولا لوتيا	8%
13	Osteoporosis	ترقق العظام	11%	هشاشة العظام	83%		
		تخلخل العظام	6%				
14	Metabolism	استقلاب	9%	أيض	79%	ميتابولزم	1%
		تمثيل	9%			عمليات هضم (هدم وبناء)	2%
	Total	Translation (1)	6%	Translation (2)	90%	Suggested translation	4%

Non- Specialized Contexts							
No.	Medical terms	Translation (1)	%	Translation (2)	%	Suggested translation	%
1	Metabolism	استقلاب	11%	أيض	63%	عمليات هضم (هدم وبناء)	10%
		تمثيل	16%				
2	Tuberculosis	تدرن	12%	سل	88%		
3	Osteoporosis	ترقق العظام	8%	هشاشة العظام	88%		
		تخلخل العظام	4%				
4	Syndromes	تناذر	4%	متلازمة	79%	مجموعة أعراض	17%
	Total	Translation (1)	14%	Translation (2)	79%	Suggested translation	7%

As far as TL equivalence is concerned, inconsistency results from synonymy which is an inevitable characteristic of any language. As mentioned earlier, the fact that dictionaries offer a wide range of similar alternatives should not justify the inconsistent use of such alternatives; rather translation should be based on criteria of usability, accessibility, and recognition of the translation. A glance at table (11) above, one can easily recognize the dichotomy of circulated and non-circulated equivalences in both specialized and non-specialized contexts. Each term in the table above has two arabized or two descriptive equivalences with one of each pair being in common use, and this is evidenced in almost unanimous selection of one translational equivalence as in the case of high usability of "حقن، زرق، رخد، دسامات" in opposition to "الكساح، صمامات، متلازمة، نعاس، دوخة، تناذر، وسن، دوام،" etc... for the terms "injection, rickets, valves, syndrome,

drowsiness, and dizziness" respectively. To illustrate, the researcher has classified the two different translations in two columns according to what is deemed weird as opposed to familiar and appealing-to-the-taste translations. Translation (1) in the table (11) involves the less familiar translations from the researcher's point of view while translation (2) includes more familiar alternatives. This point of view was verified when 90% and 79% of doctors' selections matched translation (2) if they are to use medical Arabic in both specialized and non specialized contexts respectively. One possible explanation for this attitude is that the selected translations are not any better than their less familiar counterpart except for the fact that they are more transparent i.e. their referent can be easily identified and accessed, and they appeal to the common taste.

For example, the meaning of "tenderness" which, according to Merriam Webster online medical dictionary, involves "a sensation of pain felt when pressure is suddenly removed", is more easily accessed by the arabized equivalent "ايلام", than by "مضض". Moreover, translations like "النخاع المستطيل، الجلطة القلبية ،سل، البقعة الصفراء،" appeal to the taste, and are easily recognized and not confused in their references . Why then to use the unnecessarily strange terms of "اللطخة الصفراء", and "البصلة السيسائية" while established familiar alternatives as "البقعة الصفراء" and "النخاع المستطيل" exist. This once again condemns the indiscriminant plucking of terms from dictionaries and forcing them into texts. According to Yan (2011: 235), although some terms found in medical texts are not synonym free, selecting among synonyms is never free. Though he has explained this point from a

medical point of view, in that meaning and accuracy could be affected, his claim can be seen extending to mean that translators are not free to choose among synonyms without clear criteria. Otherwise, terminological consistency can never be attained.

Furthermore, although such terms are sort of professional ones, doctors, except for low rates suggesting to purely borrow the English terms, were willing to use arabized equivalences as long as they are highly familiar, stable, short, and accessible. This is even further evidenced in the fact that doctors made the same selections of equivalence for the same terms for non-specialized patients and average people. As a way of illustration, the two terms "tuberculosis" and "syndrome" were found to be translated inconsistently in DPIs. Doctors made the same selections of "سل،متلازمة" for patients just as for doctors proving the high familiarity with such translations on an equal footing. Slight differences can be seen in the suggested translations. Whereas doctors, few though, choose to purely borrow terms that are highly specialized ones among each other, the number of doctors using borrowings with patients was naught.

The last term to be investigated of this group is "osteoporosis". As shown in the table above, it has three different translations and only the translation in column (2), "هشاشة العظام", reported high usability in both specialized and non-specialized contexts with the rates 83%, and 88% respectively.

However, this translation has been found in one of the DPIs but was not documented in any Arabic medical dictionary. According to the UMD and Hitti's dictionaries, "osteoporosis" which, according to Merriam Webster online medical dictionary, means "a condition that affects especially older women and is characterized by decrease in bone mass with decreased density and enlargement of bone spaces producing porosity and fragility," is translated as "تخلخل العظام" or "ترقق العظام" while the term "osteopsathyrosis" which is "a hereditary disease caused by defective or deficient collagen production and marked by extreme brittleness of the long bones and a bluish color of the whites of the eyes" is translated as "هشاشة عظام". Only google translator translates "osteoporosis" as "هشاشة العظام", and since some DPIs translators referred to Google translator as a resource for translation, and since some DPIs translators also referred to their working experience and the fact that they include in their translation what is usually used among doctors, the translation "هشاشة العظام" matched the doctors' selections to an evidently large extent. However, the fact that not all of DPIs translators use the same resources would result in some terminological inconsistency, and that is why the term "osteoporosis" was translated differently by tri-equivalents of "ترقق العظام, تخلخل العظام" and "هشاشة عظام".

So, doctors prefer the familiar over the strange, and the equivalents that appeal to common taste as opposed to deserted ones.

2. Non-circulated TL Equivalence.

The second category involves medical terms that have more than one arabized or descriptive translation, but still have reported the absence of any commonly used target equivalence. This is clear in two points; first, the low rates assigned to any of the TL equivalences, and secondly the decline in responses of participants to translate such terms at all. It is worth mentioning here that no such terms were found in DPIs as doctors have always developed alternative descriptions for patients. The table below shows some examples that have occurred in specialized contexts.

Table (12) Inconsistency in TL equivalence (Non-circulated equivalences).

No	Medical terms	Arabized term (1)	%	Arabized term (2)	%	Suggested translation	%
1	Groin	مغبن	17%	أربية	25%	محشم	18%
						غروين	3%
						Groin	10% +**23%**
						اسفل البطن	4%
2	(Cardiac) Tamponade	سطام (قلبي)	13%	اندحاس (قلبي)	27%	كاردياك تامبونيد	4%
						Cardiac tamponade	8% +**32%**
						تجمع سائل حول القلب	16%
3	Meatus	الصماخ	8%	الصماغ	46%	Meatus	12% +**13%**
						فتحة	16%
						قناة الأذن السمعية	5%
4	Callus(es)	دشبذ	3%	الأشنان	37%	Callus	16% +**32%**
						كالس	10%
						عظم جديد	2%
5	Cleft	فلح	10%	فلج	48%	شق	16%
						كلفت	6%
						Cleft	7% + **13%**
No.	Medical terms	Arabized term (1)	%	Arabized term (2)	%	Suggested translation	%
6	Scaphoid	عظم زورقي	24%	عظم قاربي	30%	عظم من الرسغ	2%
						Scaphoid	3% + **27%**
						سكافويد	14%
Total		Arabized term (1)	12.5%	Arabized term (2)	35.5%	Suggested translation	52%

*Bold percentages show the number of doctors refraining from choosing any translation or translating terms in favor of purely borrowing them.

This group of terms has two translations, but yet it can be seen that the rate of responding doctors to any of the translations did not exceed 48% at its best. The term "groin" for example has two equivalences "مغبن" and "أربية", and both equivalences have reported low rates of use (17%, 25%) respectively. Instead, 18% of doctors suggested an alternative arabized term "محشم" which can be justified in the fact that different Arab countries may develop different local terms, 4% preferred descriptive translation as even being more accessible, while 13% preferred to transliterate or purely borrow the term. However, what is of a more importance is the fact that 23% of the doctors abstained from responding. Upon being asked, participating doctors said that they prefer to use the original foreign term even if they are involved in Arabic medical talks with specialists. According to Dr. Shaji, doctors have not developed credible translations for medical terms that are highly professional and occur only among medical staff in addition to being fully understood in its foreign form because they did not have a need to do so. The term "cardiac tamponade" is another example which represents doctors' preferences to either use descriptive translation, 16% for "تجمع سائل حول القلب", or mostly purely borrow it (8% plus 32%). The same applies to the terms "meatus, callus, cleft, scaphoid". Languages develop according to the needs of their speakers. This theory best applies here as doctors were not in need to translate these terms whose foreign forms are quite accessible; thus their responses were low in general toward any TL equivalence. Other possible explanation for this negative attitude is as it has been pointed out by Al-Quran (2011: 444) that some of

the arabized terms are not conveniently pleasing in their pronunciation and hence do not suit the taste of people. Also, Afaf and Matthias (2011: 28) have explained that because medicine is a field of knowledge in accelerated scientific developments, health professionals need to quickly update their knowledge. So they learn directly from the original language of publication and stick to using it among each other. They have further explained that it is only too late that translations start to appear.

In conclusion, it is clear that 52% of doctors went for suggesting alternatives different from the ones included in medical books and dictionaries. This percentage is considered to be high, and thus the established arabized equivalences need to be rethought as an indispensible step before calling for considering Arabic Language the official medium of instruction in medical schools. This does not mean, however, that translators should take what is in common use indiscriminately. Castro pointed out that justifying considering the use of a certain equivalence over another by arguing that this is what people use does not serve as a very serious linguistic criterion (cited in Izquierdo, 2006). This is further evidenced in the fact that doctors reported high use of the descriptive equivalence "هشاشة العظام" for the term "Osteoporosis" while in medical dictionaries of Hitti's and the UMD, the equivalence "هشاشة العظام" is assigned to "osteopsathyrosis". Still though, the translation approach toward medical terms should be descriptive rather than prescriptive i.e. translation cannot be imposed on users, but rather inspired from them to be glossed according to the TL conventions afterwards. It is here where

linguists along with medical experts play a major role in revising the material invoked from genuine contexts of use.

5.3 The Usefulness of the UMD

In order to get a full picture of the medical translation process into Arabic, it is a must to shed some light on the dictionary that is considered the latest achievement in this field i.e. the UMD. Upon corresponding with the Arab academy in Syria, the academy stated that the UMD includes all the terms that have been coined by the academy and is issued by WHO. Hence, the present study has consulted the latest and fourth edition of the UMD (English, French, Arabic), issued in Lebanon in 2009, and has tried to assess the extent to which the translational choices it makes match the ones selected by doctors participating in this study. The most distinguishing characteristic of this dictionary is that it seeks to include only one equivalence for a single medial term to a great extent, the matter that makes it easier to decide its usefulness to translators should its lexical choices be similar to those preferred by doctors. Hence, all the terms investigated in this study were looked up in the UMD to check proximity between this official dictionary and real contexts of use. Table (13) demonstrates the findings.

Table (13) UMD

UMD	commonly used translations	not commonly used translations	terms having both used and less used translations	Total
Number of terms	24	28	8	60
Percentage	40%	47%	13%	100%

It goes without saying that the terms checked in the UMD to examine the extent to which the UMD manages to match genuine usability of the Arabic medical terms by doctors if they are to use Arabic language at all, are only those encountered in specialized context of medical books given the fact that the UMD addresses the specialized staff of doctors, pharmacists, nurses and the like. As the table above shows, sixty terms were found translated inconsistently in medical books. The type of equivalence the UMD considers has matched doctors' selections in 24 terms (40%) while there is a divergence between the lexical choices the UMD and doctors make in 28 terms (48%). However out of the 60 terms investigated in this study, the UMD includes two different translations for 8 terms (13%). One of the pair translations matches the Arabic equivalence that is in common use as opposed to the less familiar one. Such percentage of (13%) can be added to the (40%) to add up the total of the commonly used medical Arabic terms which the UMD includes to make up 53% based on the ground that such used terms exist in the dictionary. It is worth mentioning here that the UMD states in eliciting its translational approach

that it goes for the terms that are in common use in some countries but not in others.

Consequently, the UMD–fourth edition- is seen as a precious resource for medical Arabic to a considerable extent though some more research into finding the most circulated translation among agents that medically rather than dominantly linguistically use Arabic medical terms remains highly needed. And it should be kept in mind that all dictionaries offer multiple lexical entries, but circulation and context of use can be of a paramount significance in deciding the equivalence translators should use.

5.4 Attitudes of Practicing Doctors toward Medical Translation into Arabic and the Type of Equivalence They Prefer to Use.

Section 4 of the questionnaire included an open question that was aimed at examining the attitudes of doctors in practice in Nablus and Ramallah toward the process of medical translation into Arabic and the type of equivalence they seek to use when they are involved in Arabic medical talks. The results and answers may be grouped as follows:

1. Doctors prefer to use Latin and English terms over Arabic ones among each other based on the ground that Arabic medical terms usually lack precision and may have more than one meaning. Also, they see that keeping the terms as they originally are facilitate international communication and constant update of information as all of the first medical discoveries and publications are usually in English. Urgency to

have such information available leads them to take materials from the original language instead of waiting for an Arabic translation.

2.   Doctors do not prefer to use terms coined by the Arab academies as they believe such terms are not smooth and attractive ones.

3.   Despite the fact that doctors have negative attitudes toward using Arabic medical terms, they accept and rather encourage the idea of making Arabic the official medium of instruction in Arab countries. This feeling evolves from their sense of belonging to their native language on one hand, and from the fact that they inevitably run into structural ambiguity and complexity of a foreign language as English on another hand.

4.   There is a general agreement that one reason of seeing Arabic Language currently inadequate to serve scientific purposes is that efforts in translation are individual, not unified and unofficial as universities throughout the Arab world, except for few, still use English or French Languages as the official medium of instruction in most faculties especially in the faculty of medicine.

5.   There is a general agreement that more efforts should be paid by official bodies for Arabic medical terms to slash their way to circulation and consequently gain familiarity.

6.   There is a general agreement over using the foreign terms or their close form of transliteration in specialized contexts while using descriptions for average patients.

7.   There is a general agreement among doctors to use descriptions with their patients, and they tend to accompany such descriptions with their

denoting technical terms, purely borrowed or transliterated, as a means of educating their patients.

Chapter Six
Conclusions and Recommendations

6.1 Conclusions

This study has been concerned with identifying the problem of terminological inconsistency in medical translation from English into Arabic. It has attempted to discover the most successful type of equivalence in specialized and non-specialized contexts of medical books and DPIs based on criteria of usability and circulation of the equivalence in relation to the context of use and the type of the target audience. Based on the findings of the present study, a number of significant conclusions can be made about the current status of medical Arabic.

Having more than one equivalence for the same foreign term has always exhausted Arabic medical language. This case is attributed to historical reasons; the multiple constraints on Arabic medical formation system; and the lack of term standardization resulted from the existence of different bodies of translation and the numerous codified medical dictionaries that follow different translation procedures and different nomenclature. Moreover, terminological inconsistency which refers to the lack of consistency in the selection of terms or assigning different translations to the same SL terms throughout a text or across relevant texts has been detected in both Arabic medical books and DPIs. Five types of terminological inconsistency in relation to types of equivalence have been found:

- Arabization versus Descriptive Translation;

- Arabization versus Transliteration;

- Transliteration Versus Descriptive translation;

- Transliteration Versus Arabization Vs Descriptive translation;

- And inconsistency in target language equivalence.

It has been also found that Arabic or translated medical books depend on Arabic dictionaries and tend to use arabization and descriptive translation much more than transliteration which is usually kept to the minimum. Also, couplets are employed extensively as a way of evading the one-to-many equivalence case of medical translation into Arabic. However, misusing couplets and lack of coordination between agencies of translation have led to a great deal of terminological inconsistency and even terminological contradiction.

In contrast, DPIs are usually translated by individuals who attempt to employ what is used among medical staff rather than consulting Arabic dictionaries leading eventually to a major use of transliteration. Issues of readability, and clarity for patients, whom DPIs usually address, are by no means taken into account during the translation process. Also, relying on individual efforts in translating DPIs necessarily entails different individual choices of term-translation leading ultimately to terminological inconsistency.

Upon surveying usability and circulation of all three types of equivalence (descriptive, arabized, transliterated), in relation to the type of context and target audience, transliteration has reported the highest rates of

circulation in medical specialized contexts among doctors and medical students while descriptive translation has reported the highest rates of circulation in non- specialized contexts of interaction with ordinary uninformed patients. Nonetheless, descriptive translation has been also reported among doctors secondly since Arabic in medicine is mainly devoted for patients with whom descriptive translation is largely used, and when doctors are asked to use Arabic even between each other- which is usually rare- they are affected by what they use with their patients. Arabization has reported low rates of use in each type of context. As far as TL equivalence inconsistency is concerned, the study has revealed no divergence in choices of one translation over another between specialized and non-specialized contexts. Instead, inconsistency in TL equivalence is best classified in the categories of circulated vs. non-circulated as opposed to non-circulation. Terms that are of a less professional status and whose TL equivalence, be it descriptive or arabized, appeals to the common taste through a long history of use are preferred over their less familiar counterparts. However, terms that stand for generally professional referents and conditions are usually kept in their original foreign shape. Thus, the TL equivalences of such terms have all reported low rates of circulation. Additionally, based on assessing the validity of the fourth and latest edition of UMD in relation to considerations of usability and circulation of Arabic terms, it has turned out that almost half of the dictionary lexical entries of the investigated terms match doctors' preferred type of equivalence. Yet, the dictionary's scope should be more comprehensive to accommodate all

translations circulated in the Arab world if it is to be used at a more global level.

Nonetheless, it should be borne in mind that emphasizing the role such factors as usability, circulation, type of context, and type of the target audience play in determining which type of translational equivalence to use should not lead us to think that these are the only factors at work. Linguistic considerations and guidelines are definitely not of any less importance . Yet, such factors can indeed help lessen terminological inconsistency to a large extent and are seen as valid means to bridge the gap between Arabic language use and usage.

In a matter of fact, in spite of the great efforts the Arab academies are exerting in the field of translating technical terms into Arabic in general, the approach followed in approving some translations is still rather prescriptive i.e. such translations are molded in linguistic carvings and then their use is imposed. Although following such approach can indeed ensure an accurate rendering of foreign terms into Arabic, considering the target audience to some extent can help maximizing the fruitfulness of such great efforts of arabization. Also, the movement of translation goes at a very low pace, giving thereby the room for the foreign terms to slash their way through Arab communities and gain familiarity much faster than the Arabic ones. Doctors' attitudes toward medical translation in general are many but most of them are not against arabizing medicine. Nonetheless, they prefer to arabize medicine in terms of language structure to facilitate understanding while at the level of medical terms, they recommend using

the transliterated equivalence over other types to serve as an Arabic translation in specialized contexts since transliteration can bring Arabic closer to the original language of medicine, mainly Latin. As for their patients, they prefer to use descriptions and explanations accompanied by technical terms as a means of informing their patients fully about their conditions and educating them at the same time. Also, the study has revealed that there were no significant differences between the selections of doctors who have received their medical education in English and those who have received it in other languages. This is evidenced in the fact that some translations were unanimously chosen over others. Finally, contextual inconsistency between DPIs and medical books could not be detected as context was not seen to be taken into account in the traditional translation process at any point.

6.2 Recommendations

The fact that Arabic language was once the language of science keeps alive the hope of making it the official medium of instruction in medical schools throughout the Arab world. However, such a huge leap requires massive and collective efforts and dedication to become a de facto case. This study has attempted to offer practical suggestions for translators when they are faced with more than one equivalence for the same medical term. They can easily go for the most circulated equivalence. For inconsistent translations, translators can now justify using one equivalence over another on a reliable basis that this equivalence is what their target audience needs and can easily recognize. However, translators are not

allowed to invent terms on their own. Instead, only the Arab academies and the official translation bodies should assume the authority of producing and coining terms. Translators can only choose among the available selections based on which of these selections is the closest to what is in common use.

Based on the above observations, a number of recommendations can be put forward as follows:

1.   The translation of medical terms into Arabic should by no means be perceived as a mere substituting of an SL term with a TL term. Instead, translators should define their criteria of term selections and not merely consult the context-free Arabic dictionaries. Such criteria should touch upon factors of usability and circulation of terms, the type of the target audience and the context of translation.

2.   In specialized contexts of medical books, terminological inconsistency can be significantly minimized if transliteration is used as long as Arabic structure is not violated and as long as the Arab academies have actually approved such transliterated forms.

3.   Terminological inconsistency is not the only problem medical Arabic faces. Inconsistency at the orthographic level is not of any less importance. Thus, further studies are needed to offer some insights into this area of study and to try to come up with concrete guidelines that would govern translation into Arabic at the orthographic level whether in arabizing, transliterating or using descriptions for medical terms.

4. More attention should be paid to medical translation at the syntactic level, too. For example, to add more than one noun to another single noun

in a possessive sense is quite grammatical in English, but it is not a regular pattern in Arabic. However, examples of such syntactical borrowing from English and the Indo European languages in general have been quite abundant in Arabic medical books as well as in DPIs. An example is cited below:

… is to warm, moist, and clean the inspired air: تسخين وترطيب وتنظيف الهواء ... المستنشق[15].

5. As DPIs address uninformed patients but at the same time could be used by doctors as an immediate lead to new drugs, the researcher suggests two points to improve the quality of translation and to eliminate terminological inconsistency in DPIs. First, ensuring comprehensibility on the part of patients and precision and accuracy for doctors can be achieved through the use of couplets as a translation procedure that includes both the technical term along with a description. This suggestion is actually based on a similar application of the procedure in other cultures such as of German and Portuguese DPIs. Secondly, the readability test described earlier and used in European countries should be applied on the Arabic translation of DPIs through which translators can gain some knowledge about the target audience and translate accordingly.

6. The fact that Arabic language is a language of synonymy does not have to be taken as an obstacle in translation or as a justification for the seemingly inevitable terminological inconsistency. Rather, it can be seen as

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[15] Examples are taken from سنل علم التشريح السريري الرأس والعنق عربي –انجليزي p. 175.

an indicator of the richness of the language and its capability to accommodate a huge number of medical terms has it been handled systematically.

7. For the time being, translators are advised to follow the nomenclature of the fourth edition of UMD as it shows relative proximity to what is genuinely used in practical medicine.

8. More research and surveys should be done to fill in the gap between medical Arabic in books and medical Arabic in practice.

9. At the administrative level, official translation bodies should endorse some law that would prevent individuals from coining Arabic translations for medical terms on their own. This is especially true for pharmacists who handle translating DPIs and who for the most part lack sufficient linguistic knowledge.

10. Arab governments need act seriously toward the process of arabizing medicine. According to Ismail (2001: 68), out of over 90 schools of medicine in the Arab world, only 5 teach in Arabic. Unless Arabic language gains clear channels of use, it will never be fully developed. Languages develop according to the need of their speakers; hence all problems of medical Arabic can be cleared out by making it largely available to its speakers as a means of meeting their needs.

11. Although arabization reported low rates of use, this doesn't mean that it is invalid as a reliable means of translating medicine into Arabic. Arabization makes the core of the whole translation process into Arabic,

and thus must be given its due weight by establishing proper means to widely spread it among the target users.

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3. Electronic sources

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Appendix (1)

The Questionnaire

استبانه

المستجيب الفاضل

تقوم الباحثة بإجراء دراسة حول ترجمة المصطلحات الطبية في الكتب الطبية المخصصة لطلاب الطب والنشرات الدوائية المخصصة للمرضى غير المختصين.

تهدف هذه الدراسة إلى معرفة أي من الترجمات الطبية العربية الأكثر شيوعا واستخداما بين الأطباء العرب فيما بينهم ولدى تعاملهم مع مرضاهم.

تشمل هذه الدراسة أربعة أقسام:

1. بيانات عامة عن المستجيب
2. بعض المصطلحات الطبية الانجليزية واللاتينية مترجمة بعدة ترجمات عربية لاختيار الترجمة المستخدمة بين **الأطباء**
3. بعض المصطلحات الطبية الانجليزية واللاتينية مترجمة بعدة ترجمات عربية لاختيار الترجمة المستخدمة مع **المرضى غير المختصين**
4. ملاحظاتك حول ترجمة المصطلحات الطبية للعربية

أرجو التكرم بالإجابة على جميع أسئلة هذه الدراسة وفقراتها بطريقة علمية وإعطائها الاهتمام اللازم علما بأن هذه المعلومات ستستعمل لأغراض البحث العلمي.

شاكرة لكم صبركم وحسن تعاونكم

الباحثة

هبه سعادة ياسين

<u>القسم الأول:</u> بيانات عامة عن المستجيب

المنطقة: نابلس رام اللـــه

درست الطب : باللغة العربية اللغة الانجليزية غير ذلك:...........

<u>القسم الثاني:</u>

المستجيب الفاضل يرجى اختيار الترجمة التي تستخدمها كطبيب إذا أردت استخدام اللغة العربية بين **الأطباء وطلاب كلية الطب** وذلك بوضع دائرة حول المصطلح العربي الذي تستخدمه. إذا لم تتفق أي من الترجمات أدناه مع المصطلح الذي تستخدمه الرجاء إدراج المصطلح العربي الذي تستخدمه بالعادة في العمود المخصص لذلك.

رقم	المصطلح الإنجليزي	ترجمة 1	ترجمة 2	ترجمة 3	ترجمتك
1	Anosmia	الخشام	فقد الشم		
2	Diplopia	الشفع	ازدواج الرؤية		
3	Trachea	الرغامي	القصبة الهوائية		
4	Ischemia	اقفار	نقص التروية		
5	Peristalsis	التمعجية	الحركات الحيوية للأمعاء		
6	Duodenum	العفج	الاثنا عشر		
7	Hypothalamus	الوطاء	ما تحت المهاد		
8	Eversion	الشنف	انقلاب للخارج		
9	Inversion	الشتر	انقلاب للداخل		
10	Parathyroid	الدريقة	جارات الدرقية		
11	Angina pectoris	خناق	ذبحة صدرية		
12	Toe	أبخس	إصبع القدم		
13	Antibiotics	الصادات	المضادات الحيوية		
14	Soft palate	الحفاف	الحنك الرخو/اللين		
15	Diet	القوت	حمية غذائية		
16	Calf (muscles)	الربلة	عضلات العجل بطة الساق*		
17	Radiologist	الشعاعي	اختصاصي الأشعة		
18	Acne	العد	حب الشباب		

		التهاب الجلد حول الأظافر	داحس	Paronychia	19
		أيض	الاستقلاب	Metabolism	20
			تمثيل*		
		حقن	زرق	Injection	21
		أربية	مغبن	Groin	22
		الكساح	رخد	Rickets	23
		صمامات	دسامات	Valves	24
		حافة	حتار	Rim	25
		دوخة	دوام	Dizziness	26
		نعاس	وسن	Drowsiness	27
		متلازمة	تناذر	Syndrome	28
		إيلام	مضض	Tenderness	29
		سل	تدرن	Tuberculosis	30
		فلج	فلح	Cleft	31
		الصماغ	الصماخ	Meatus	32
		الأشثان	الدشبذ	Callus	33
		البقعة الصفراء	اللطخة الصفراء	Macula Lutea	34
		عظم قاربي	عظم زورقي	Scaphoid	35
		تخلخل العظم	ترقق العظام	Osteoporosis	36
		*هشاشة العظام			
		اندحاس قلبي	السطام القلبي/ التاموري	Cardiac tamponade	37
		الجلطة القلبية	احتشاء العضل القلبي	Myocardial infarction	38
		البصلة السيسائية	النخاع المستطيل	Medulla oblongata	39
		البنكرياس	المعثكلة	Pancreas	40
		الكارينا	الجؤجؤ	Carina	41
		ساركوما	غرن	Sarcoma	42
		غانغرين/غنغرينة	موات/تموت	Gangrene	43
		البريتوان/البريتون	الصفاق	Peritoneum	44
		البروستات	الموثة	Prostate	45
		أيون	شاردة	Ion	46
		بلازما	المصورة	Plasma	47
		سيتوبلاسمي	هيولي	Cytoplasmic	48

		الحمة	فيروس	Virus	49
		انظيم	انزيم	Enzyme	50
		نظير الودي	باراسمبثاوي	Parasympathetic	51
		النزلة الوافدة	انفلونزا	Influenza	52
		ورم القواتم	الفيوكروموسايتوما	Pheochromocytoma	53
		التهاب المعي الغليظ	التهاب الكولون/ القولون	Colitis	54
		الحلأ المنطقي أو المناطقي	(هربس زوستر) الشنغلز	Herpes zoster or shingles	55
		عقبولة المنطقة	هربس نطاقي		
		التحال الدموي/ ديال دموي	الديلزة الدموية	Hemodialysis	56
		غسيل كلوي			
	الشهوة الجنسية	شبق	الليبيدو*	Libido	57
	البطانة الوعائية الفارشة	البطانة	الاندوثليوم	Endothelium	58
	الحالة التحسسية	أرجية	أليرجية	Allergy	59
	اعتام عدسة العين	الساد	الكاتاراكت	Cataract	60

القسم الثالث:

المستجيب الفاضل يرجى اختيار الترجمة التي تستخدمها مع**المرضى غير المختصين** وذلك بوضع دائرة حول الترجمة المستخدمة. إن جميع المصطلحات الطبية أدناه وردت مع ترجمة لها في نشرات دوائية موجه للمريض غير المختص. فما هو المصطلح العربي الذي تستخدمه عند تعاملك مع المرضى غير المطلعين والذي يكون **مفهوما** لديهم؟ إذا لم تتفق أي من الترجمات أدناه مع المصطلح الذي تستخدمه الرجاء إدراج ترجمتك التي تستخدمها بالعادة في العمود المخصص لذلك كما هو موضح في المثالين أدناه.

مثال

Herpes zoster: حزام النار

رقم	المصطلح الإنجليزي	ترجمة 1	ترجمة 2	ترجمة 3	ترجمتك
1	Metabolism	الاستقلاب تمثيل*	أيض		
2	Tuberculosis	تدرن	سل		
3	Syndrome	تناذر	متلازمة		
4	Osteoporosis	ترقق العظام	تخلخل العظم هشاشة العظام*		
5	Fullness	تطبل	شعور بالشبع		
6	Ischemia	اقفار	نقص التروية		
7	Diplopia	الشفع	ازدواج الرؤية		
8	Paronychia	داحس	التهاب الجلد حول الأظافر*		
9	Flushing	هبو بيغ وهيج	احمرار الجلد مع إحساس بحماوة		
10	Tetanus	الكزاز	التيتانوس*		
11	Asthma	الربو	الأزمة		
12	Clinical	سريري	اكلنيكي		
13	Peritoneum	الصفاق	البريتون		
14	Hallucinations	هذيان	اهلاسات/هلوسات		
15	Anemia	فقر الدم	أنيميا		
16	Hemodialysis	التحال الدموي/ الديال الدموي غسيل كلوي	الديلزة الدموية		
17	Anemia	فقر الدم	أنيميا		
18	Pheochromocytoma	ورم القواتم	الفيوكروموسايتوم ا		
19	Colitis	التهاب المعي الغليظ	التهاب الكولون/ القولون		
20	Herpes zoster or shingles	الحلأ المنطقي أو المناطقي/ عقبولة المنطقة	(هربس زوستر) الشنغلز هربس نطاقي		
21	Glaucoma	زرق	جلوكوما*	ارتفاع في	

ضغط العين*				
الشهوة الجنسية	الليبيدو*	شبق	Libido	22
الاستسقاء	أوديما	وذمة	Edema	23
إعتام عدسة العين	الكاتاراكت	الساد	Cataract	24
الحالة التحسسية	أليرجية	أرجية	Allergy	25
استكباب الجلد	الارتيكاريا	الشرى	Urticaria	26

القسم الرابع:

ملاحظاتك حول الترجمة العربية التي تفضلها و المصطلح العربي الطبي الذي تستخدمه بشكل عام:

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شكرا جزيلا

Appendix (2)

List of DPIs

1. ABECEDIN Tablets

2. Amaryl ® 1.0, 2.0, 3.0, 4.0, 6.0

3. AMICOR Tablets

4. ASPIRIN ® 100

5. Baneocin

6. BETASTIN TABLET

7. DOGMATIL® 50mg capsules

8. Duspatalin® retard 200mg

9. FLU (R) (Tablets and Syrup)

10. FML ® ALLERGAN

11. FOLIC ACID

12. Fucidin® Ointment 2%

13. Hepsera ™ Tablets

14. Indolin Capsules

15. LAHISTAN Tablets

16. 'NOLVADEX'-D TABLETS ™

17. One-Alpha ®

18. OSTEOTAB TABLETS 10 mg & 70 mg

19. RATIDINE Ampoules and Tablets

20. Resyl® Expectorant

21. Rivotril® Clonazepam

22. SEDACOLD Day Caplets

23. SINGULAIR® TABLETS 10mg

24. SUPRAVIRAN Suspension

25. SUPRAVIRAN 200, 400, 800 Tablets

26. TETRACT-HIB (ACT-HIB –D.T.COQ/D.T.P.)

27. THEOPHARM 100-200-300 Sustained Release Tablets

28. TIMOLIN EYE DROPS

29. Tramal Capsules

30. Trental® 400

31. VERMAZOL Tablets-Capsules

32. VIZOLIN Eye Drops

33. ZITHROMAX ®

34. ZOVIRAX TABLETS TM

35. ZYPREXA Velotab

جـــامعة النجاح الوطنية

كلية الدراسات العليا

غياب الثبات في استخدام المصطلحات الطبية عند الترجمة من الإنجليزية الى العربية

إعداد

هبه شجيع سعادة ياسين

إشراف

الدكتور عبد الكريم دراغمة

قدمت هذه الأطروحة استكمالا لمتطلبات درجة الماجستير في برنامج اللغويات التطبيقية والترجمة بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس، فلسطين.
2013م

غياب الثبات في استخدام المصطلحات الطبية عند الترجمة من الانجليزية إلى العربية

إعداد

هبه شجيع سعادة ياسين

إشراف

الدكتور عبد الكريم دراغمة

الملخص

تبحث هذه الدراسة في مشكلة غياب الثبات في ترجمة المصطلح الطبي من الإنجليزية إلى العربية. ويعنى بهذه المشكلة غياب الثبات في اختيار المصطلحات أو غياب الثبات في ترجمة المصطلحات الانجليزية ذاتها في النص العربي الواحد أو فيما بين النصوص العربية. و تهدف هذه الدراسة إلى إظهار الدور الهام الذي تلعبه مؤشرات استخدام المصطلح وتداوله وطبيعة الجمهور الذي يعتمد على ترجمة المصطلحات وكذلك سياق الترجمة وكيف لهذه المؤشرات أن تحد من ظاهرة غياب الثبات في المصطلح المترجم إلى حد كبير. لذا ينبغي أن تؤخذ جميعها في عين الاعتبار عند اختيار أي من المكافئات المختلفة كنظير عربي ناجح للمصطلح الطبي الانجليزي.

جمعت البيانات من سبع كتب طبية عربية ومترجمة ومن المعجمين الطبيين الموحد بالإضافة إلى 35 نشرة دوائية للمريض بهدف المقارنة بين انجح مكافئ في كلا السياقين المتخصص وغير المتخصص. وجمعت البيانات كذلك من إجراء مقابلات مع 4 أطباء حيث حصلت الدراسة على رؤية قيمة عن طبيعة الترجمة الطبية إلى العربية بشكل عام. كذلك اشتملت عملية جمع البيانات على مقابلات هاتفية مع الشركات الدوائية الفلسطينية للحصول على وصفٍ وافٍ لعملية ترجمة النشرات الدوائية للعربية. ثم طورت استبانه ووزعت على عينة الدراسة والتي شملت 100 طبيب عربي من منطقتي نابلس ورام الله. هدفت الاستبانه إلى قياس استخدام المكافئات المختلفة للمصطلحات الطبية الانجليزية حيث طلب من الأطباء المشاركين اختيار المكافئ العربي الذي يستخدمونه مع غيرهم من الأطباء وأفراد الطاقم الطبي عند استخدامهم العربية وكذلك المكافئ الذي يستخدمونه مع مرضاهم غير المتخصصين باعتباره

النظير الأكفأ. وغطت الإستبانة أيضا توجهات الأطباء نحو عملية ترجمة المصطلح الطبي للعربية والترجمة الطبية العربية بشكل عام.

أظهرت الدراسة أن هناك خمسة أشكال لغياب الثبات في ترجمة المصطلح الطبي للعربية فيما يتعلق بأنواع المكافئ العربي الثلاثة،أي المكافئ الإستعاري، والمكافئ المعرب، والمكافئ الوصفي. وقد اتضح أن المكافئ الأكثر استخداما في السياق الطبي المتخصص هو المكافئ الإستعاري في حين سجل المكافئ الوصفي أعلى نسبة تداول في السياق الطبي غير المتخصص.أما بالنسبة للمكافئ المعرب فقد كانت نسب استخدامه قليلة في كلا السياقين. وقامت الدراسة أيضا بتقييم مدى نجاح النسخة الرابعة والأحدث من المعجم الطبي الموحد وخلصت إلى اعتمادها انجح مورد رسمي للطب في العربية باعتبارها الأقرب إلى ما يتداوله الأطباء في ممارساتهم الطبية اليومية. وخلصت الدراسة أيضا إلى أن حل مشكلة غياب الثبات في ترجمة المصطلح الطبي للعربية يكمن في أن تكون توجهات الترجمة الطبية للعربية مستقاة مما هو متداول وفي ظل تركيب اللغة العربية لا أن تكون إلزامية في فرضها استخدام ترجمات معينة على الأطباء.