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Introduction

This thesis is, metaphorically speaking, the destination of a journey that started more than two years ago, and at the same time an attempt to address some of the issues that remained unresolved in my Bachelor's dissertation. I would indeed consider the research presented in this dissertation as the natural continuation of my Bachelor's Degree. The common thread is represented by the topic I have explored, which is figurative language. However, the present dissertation provides a more detailed analysis of this topic, and differs from the other one in several respects. Before introducing the present study, I would like to briefly sum up the content of my previous study.

The inspiration for my Bachelor's dissertation, entitled "A study of animal-based figurative language in Rudyard Kipling's *Kim* and in present day language corpora", came from the novel mentioned in the title. While I was reading this book for my English literature exam, I noticed that Kipling makes use of a large number of similes to describe both main and minor characters. Therefore, I decided to study these similes by using corpus linguistics methods and concordancing software. In particular, I focused on a specific semantic field, that of animals, which is highly represented in Kipling's novel. I was not surprised to find a large number of similes, because they are usually very common in literature. Indeed, poets and novelists use this rhetorical figure to reach different goals: to make characters more interesting, landscapes more "coloured" and their style more creative and memorable.

However, I also wanted to see if the animal-based similes identified in the novel were peculiar and unique to literature. To do so, I decided to distance myself from literature and to analyse the frequency of these similes in everyday language. Thanks to the use of two corpora, the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA), I found out that the animal-based similes identified in *Kim* are also common in everyday language – both in British and American English – and are often used to "colour" language, adding new shades of meaning to words.

Even though the central theme of the present work is still figurative language, as said before, it differs from my previous research.

First of all, I have shifted my attention from literature and everyday language to a type of scientific language: the language of medicine. My interest in the language of medicine arose from a course I attended during my Master's Degree, Linguistic Methods for Text Analysis, when we dealt with the main linguistic features of this language in different types of texts. Furthermore, I was interested in studying the language of medicine as medicine plays a fundamental role in our lives. Although in different ways and for different purposes, everyone has to cope with medical texts, be they prescriptions, medical reports, discharge letters or patient information leaflets.

I decided to specifically study British and American Medical Condition Leaflets. They are written for patients and deal with a given disease focusing on its causes, symptoms, treatments and possible complications. Even though these leaflets cannot be considered fully specialized texts, but rather popularised versions of medical texts, some features typical of specialized languages can be found in them. Furthermore, some strategies are used in them which make the language of medicine accessible to people with little or even no previous knowledge of medicine.

I have decided to take into account Medical Condition Leaflets about four different diseases, with the aim of creating a heterogeneous corpus:

- three chronic diseases that cannot be cured but only treated, to keep their symptoms under control: Multiple Sclerosis (MS), diabetes and the HIV infection;
- some short-term medical conditions that are usually not dangerous and that can be cured: seasonal influenza, common cold, sore throat, respiratory tract and ear infections.

The second difference between my Bachelor's dissertation and the present work is related to the rhetorical figures analysed. In the present work, I mainly focus on metaphors, even though I have also taken into consideration a small number of similes used in the leaflets. I have analysed metaphors by grouping them into categories, called conceptual metaphors. "Conceptual metaphors" is a term introduced by Lakoff and Johnson in their work *Metaphors We Live By* (1980) which refers to specific patterns – or frames – that include metaphorical expressions related to a given semantic field or topic. Identifying these conceptual metaphors was relatively easy, while collecting the data was rather challenging, because of the size of my corpus – which contains more than 600,000 words – and the elusive nature of metaphors. Analysing similes is a rather

straightforward process, as they are nearly always introduced by words such as the prepositions "like" or "as", while identifying metaphors is more challenging, as texts need to be manually tagged for metaphorical expressions. For my Bachelor's dissertation, I mainly analysed concordance lines in the KeyWord In Context format obtained from concordancing software (AntConc and the built-in software of BNC and COCA). For the present work, besides AntConc, I also used UAM Corpus Tool, a corpus annotation tool that enabled me to annotate or tag my corpus manually by assigning "tags" to portions of texts.

My initial research questions were three. Firstly, I wanted to check if metaphors are pervasive in Medical Condition Leaflets. Secondly, I was interested in studying their function and see whether they are used as linguistic embellishments, which is what happens in literature and in everyday language. Finally, I hypothesised that there are differences between the ways metaphors are used in leaflets about different types of diseases and set out to explore them.

This dissertation can be subdivided in three parts. Chapters 1 and 2 are theoretical, Chapter 3 is an introduction to my analysis, and finally Chapters 4 and 5 present and discuss the results of my research.

In Chapter 1, notions and definitions about specialized languages are given. In particular, the most important lexical, syntactic and textual characteristics of this variety of language are described, giving examples related to different fields of knowledge. In the second part of this Chapter, attention is shifted to the language of medicine. An historical overview of this variety of language is provided and its most important features – including the use of metaphors – are described.

Chapter 2 is about the appropriateness of metaphors in medicine. Scholars argue that the effects of metaphorical expressions on patients should be taken into consideration. Therefore, in this Chapter, contrasting opinions are given, and the potential negative consequences of some metaphorical expressions are stressed. The metaphors that have been discussed by scholars have been subdivided into three categories: metaphors related to the human body, diseases and pain.

Chapter 3 provides an introduction to my analysis. The first part describes what corpus linguistics is, while the second part is about the materials analysed and the software used to collect and process data.

In Chapter 4, the metaphors identified in my corpus are analysed from a qualitative point of view. The medical conditions mentioned above are studied separately, in order to carry out a clearer and more straightforward analysis. Then, a paragraph introduces metaphors related to pain. After briefly introducing each disease giving general medical information, I will describe the most interesting metaphors and group them into conceptual metaphors. I will then focus on their functions, the semantic fields involved, and whether they are conventional or not.

In Chapter 5, a quantitative analysis of the materials studied is conducted. In particular, the results of the analysis of the 617 metaphors found in my corpus will be discussed and illustrated through examples.

CHAPTER 1: The Language for Specific Purposes (LSP) and the language of medicine

This Chapter introduces the notions of Language for Specific Purposes (LSP) and English for Medical Purposes (EMP), also called Medical English (ME). In particular, I will discuss terminological issues related to the labels that are used to define these specific varieties of use of language, and I will also focus on their most important characteristics.

1.1 Language for Specific Purposes (LSP)

Linguists generally agree that a distinction should be made between the language used by lay people and that used by experts and related to specific fields of knowledge. This dichotomy dates back to the 1920s-1930s, when the linguists and philologists of the Prague school studied the characteristics of scientific language, considered as completely different and autonomous from common language.

The opposition between specialized and common language is still present today, and several labels are used to define these types of language. For instance, Coancă (2011) and Gotti (1991) use the adjective "specialized" to describe the type of language used by experts, and talk about "common" or "general" language to define the language used by non-experts. However, "specialized language" is just one of the labels that have been proposed. As Nagy (2014: 262) points out, a large number of expressions, such as "special language", "technical English" and "English for Special or Specific Purposes" are used as an alternative to "specialized language". Nagy focuses on English because this author is interested in analysing the role of this language in several professional contexts. However, the plurality of labels used to talk about this type of language is a phenomenon that can also be observed in other European languages, such as Romanian and Hungarian (Nagy, 2014: 262).

Before describing the most important characteristics of specialized languages, I will devote a paragraph to terminological issues, focusing on some of the labels mentioned above.

1.1.1 Terminological issues

As said above, there is not only one label to define the type of language used by experts in specific contexts. Gotti deals with this issue, arguing that specialized discourse is a "variety of use" (2011: 14) and introducing some of the labels that have been used to define it.

Before dealing with terminological issues, Gotti briefly explains how European national languages, such as English and Italian, started to be used in specialized contexts. This author claims that, in the 17th century, Latin started to be no longer considered appropriate to talk about the new scientific discoveries of the time. The development of a new scientific system led to important changes in several countries, both from a methodological and linguistic point of view. As a consequence, in the UK Latin started to be replaced by English in the same way in which in Italy scientists like Galileo started to use the vernacular. However, English was considered imperfect and inappropriate by many intellectuals, especially because of its limited amount of vocabulary. For example, philosopher and writer Walter Charleton (1680, quoted in Gotti, 2011: 109), talking about the use of English to describe scientific phenomena, claimed that "the nature and quality of Subjects treated of, […] cannot be fully expressed in our imperfect Language." The same idea is expressed by another philosopher, Kenelm Digby (1645, quoted in Vickers, 1985: 30), who said:

> "The scarcity of our language is such, in subjects removed from ordinary Conversation, […] as affordeth us no apt words of own to express significantly such notions as I must busy myself in this discourse."

As a consequence, new terms were coined to make English more suitable to specialized discourse, and it gradually started to be used in several specialized contexts.

Gotti then focuses on the issue of terminology, which is central when talking about specialized discourse. One of the labels used to talk about this variety of use is "restricted language", introduced by Wallace (1981, quoted in Gotti 2011: 14). According to Gotti, "restricted language" is not a suitable label to define this variety. It refers to restricted codes where sentences belonging to general language are used to convey standard

messages, using "set phrases with a set of agreed variants" (2001: 14). This use of language is completely different from specialized language, because the latter does not depend on the use of prearranged expressions.

Another label used to refer to specialized discourse is "microlanguage". Gotti considers this label also inappropriate, because a microcosm is usually characterized by constraints and simplifications. On the other hand, specialized discourse is not based on restrictions, but rather richer than microlanguages from an expressive point of view.

"Lingua speciale" is a label introduced by Cortelazzo (1994). Its equivalent "special language" is used by several scholars, such as Thellefsen (2003) and Al-Sayed and Ahmad (2003). The use of the label "lingua speciale" should be contextualized. Indeed, Cortelazzo opposes two different labels, "lingua speciale" and "linguaggio specialistico", arguing that the former is more appropriate than the latter because it is more specific. In Italian, the term "lingua" is more precise than the term "linguaggio", because it only refers to verbal communication, while the latter includes other forms of communication, such as formulas or graphics. Then, Cortelazzo prefers the adjective "speciale" to "specialistico" because it is similar to other labels used in Europe, such as "special languages" in the Anglo-Saxon context and the French "langues de spécialité".

Starting from these considerations, Cortelazzo (1994: 8) argues that "lingua speciale" is the most appropriate label that linguists can use. He gives the following definition:

> "Per lingua speciale si intende una varietà funzionale di una lingua naturale, dipendente da un settore di conoscenze o da una sfera di attività specialistici, utilizzata, nella sua interezza, da un gruppo di parlanti più ristretto della totalità dei parlanti la lingua di cui quella speciale è una varietà, per soddisfare i bisogni comunicativi (in primo luogo quelli referenziali) di quel settore specialistico; la lingua speciale è costituita a livello lessicale da una serie di corrispondenze aggiuntive rispetto a quelle generali e comuni della lingua e a quello morfosintattico da un insieme di selezioni, ricorrenti con regolarità, all'interno dell'inventario di forme disponibili nella lingua."

In the first part of the definition, Cortelazzo says that, to talk about a "lingua speciale", a specific field of knowledge or activity and a smaller group of people who speak this language have to be involved. In the second part, he points out that special languages have specific features not only from a lexical point of view, but also from a

syntactic point of view. This clarification is very important because, as Gotti (2011: 10) says, the lexical dimension is only one feature of specialized languages:

> "Scholars generally concentrated on the lexical dimension, which is clearly the most marked. […] However, there is far more than a straightforward lexical distinction at the root of specialized discourse."

Even though some elements identified by Cortelazzo to talk about this variety of language can also be found in Gotti – such as the involvement of a group of experts and the specialist use of language – the latter does not agree with the choice of the label "lingua speciale". Gotti thinks that the adjective "speciale" should denote "languages with special rules and symbols" (2011: 14) and clearly stresses that specialized discourse is not based on special rules which cannot be found in general language:

> "For the sake of terminology, therefore, the terms 'special languages' and 'specialized discourse' should be kept separate because, […] the latter is distinguished from general language not for its uses of special linguistic rules absent from general language but for its quantitatively greater and pragmatically more specific use of such conventions." (2011: 15)

To conclude, Gotti (2011: 15) says that, in his opinion, the most appropriate label is "specialized discourse". He also adds the following definition:

> "I shall therefore adopt the expression 'specialized discourse', which reflects more clearly the specialist use of language in contexts which are typical of a specialized community stretching across the academic, the professional, the technical and the occupational areas of knowledge and practice. This perspective stresses both the type of user and the domain of use, as well as the special application of language in that setting. For specialized discourse to develop, all three of these factors need to be present."

As the definition above clearly states, a language can be defined "specialized" when three features coexist: it has to be used by experts; it has to be related to a specific context or field of knowledge; and it has to follow specific rules. In addition, Gotti (2011: 17) claims that a further distinction related to communicative purposes can be made. Indeed, three main situations can be identified:

- Experts address other specialists, in which case they use specialized terminology to deal with different topics within a specific area of knowledge or activity.

Specialized terminology does not have to be explained, because it is shared by specialists.

- Specialists address non-specialists to deal with topics of a specific discipline. Specialized terms are explained when they occur for the first time, to allow lay people to understand what one is talking about.
- Specialists address lay people using everyday lexis and making reference to everyday experiences.

When specialized language is used to communicate with non-experts, it undergoes some changes, especially from a lexical point of view. This phenomenon is known as "popularization", which means "to make a difficult subject or idea able to be easily understood by ordinary people who have no special knowledge about it."[1] In particular, in popularization the use of technical terminology is limited and is associated with the use of common expressions that belong to general language. Furthermore, as we will see later in this Chapter, in popularization an important role is played by metaphors, which are commonly used to "translate" complex terms or ideas into concepts that everyone can grasp.

Despite the widespread use of the label "specialized language", in the Anglo-Saxon context one of the most common terms used nowadays to define this notion is "Language for Specific Purposes", also known with the acronym LSP. The use of this label was promoted by the British Council, the UK's international organisation for cultural relations and educational opportunities. In 1977, a seminar entitled "Language for Specific Purposes" was organised in Colombia[2]. In the 1980s, the label "Language for Specific Purposes" and its acronym LSP became more and more popular, and many scholars started to use it (Robinson, 1980; Hutchinson and Waters, 1987; Swales, 2000).

As Hutchinson and Waters underline, ESP (English for Specific Purposes) is neither a label, only nor a planned movement, but "rather a phenomenon that grew out of a number of converging trends." (1987: 6) These authors deal with the complexity of this phenomenon, stressing that it was not uniform, but rather developed in different ways and at different speeds in several countries.

[1] http://www.ldoceonline.com/dictionary/popularize#popularize__4 (last visited on 12/01/2017).
[2] https://www.teachingenglish.org.uk/sites/teacheng/files/F044%20ELT-34%20English%20for%20Specific%20Purposes%20-%20An%20International%20Seminar_v3.pdf (last visited on 28/12/2016).

When ESP emerged in the late 1960s, it was mainly connected to teaching and learning English. After World War II, a great expansion took place in different fields, such as the scientific, technical and economic field, on a global scale. Because of this expansion, the demand for an international language became higher and higher. The choice fell on English, because of the leading role of the United States of America, especially from an economic point of view. Therefore, studying English became fundamental. If in the past learning a language was usually a sign of an all-round education, in the second half of the 20th century understanding and speaking English correctly became a necessity. Several courses were offered in English, and the language used changed on the basis of the subject that was taught. For example, the language used in an English of engineering course was completely different from the language used in a course of English of commerce, not only from a lexical but also from a textual and stylistic point of view.

The central role of English for Specific Purposes in language teaching led scholars to study ESP through genre analysis theory. Before dealing with the connection between these phenomena, it is fundamental to define the concept of genre. It was introduced by Swales, who says that a genre is "a class of communicative events" (1990: 45). According to Swales, in each genre language is used to communicate something to someone, to achieve a specific communicative purpose. Therefore, each "class of communicative events" is usually typified, and some texts are considered as prototypical of a particular genre.

The connection between genre analysis and ESP is a topic discussed by many scholars (Bhatia, 1991; Dudley-Evans, 2000; Bawarshi and Reiff, 2010; Flowerdew, 2011, in Bhatia et al., 2011: 139). The importance of adopting a genre-based approach also in teaching English for Medical Purposes (EMP) is clearly stressed by León Pérez and Martín-Martín (2016: 96), who say:

> "Over the last few decades, increasing attention has been paid to the notion of genre analysis and its application in the teaching and learning of LSP (Languages for Specific Purposes). Additionally, a variety of works that focus on English in different professional fields have been published; particularly in medicine a considerable number of studies have been carried out […]."

However, as Bhatia and Gotti (2006: 9) point out, in recent years there has been a shift from learning and teaching programmes to other professional and workplace contexts:

> "In its initial phase genre theory was used for description of variations in the use of language for specific purpose texts as a basis for designing language learning and teaching programmes. […] In more recent years, however, genre theory has taken a more serious look at context in a much broader sense, paying particular attention to more comprehensive understanding of text/context interactions focusing not simply on form and content of LSP genres, but more importantly on how these specialized genres are constructed, interpreted, used and exploited in the achievement of specific goals in highly specialized academic, professional and institutional as well as other workplace contexts."

That is, not only can genre analysis theory be applied to teaching and learning LSP, but it can also be used to study this variety of use of language in different professional and working environments.

A connection between genre analysis and medicine and healthcare is also made by other scholars. For example, Salager-Meyer (1989) talks about Medical English (ME) – also called English for Medical Purposes (EMP) – as a specific genre which includes a large variety of subgenres. One if these subgenres is the Medical English journal article, which in turn includes editorials (ED), research papers (RP) and case reports (CR).

Milosavljević and Antić (2015) say that medicine is a specific genre and, for this reason, medical texts have to follow precise rules. For example, these authors (2015: 78) focus on medicine research articles, stressing that they follow the IMRaD structure, which is an acronym for Introduction, Material and methods, Results, Discussion. The observance of this fixed structure is, according to Milosavljević and Antić, "an attempt to improve the structure of the article and expose the content in a systematic and accurate manner in order to improve communication." (2015: 78).

Even though Mićić (2013) does not explicitly mention genre theory, she highlights the strong connection that there is between English for Specific Purposes and several working contexts different from the academic one. Indeed, this author (2013: 217) stresses that "there are as many specialised languages as there are professions." The author (2013: 231) also reflects on the predominant role of the English language in the medical profession, arguing that:

> "The English language of medicine is especially relevant since enormous development of medical science, practice and technology occurs primarily in the United States of America and in the United Kingdom. […] The English language of medicine has its standards and is being taught in almost all world countries."

That is, she claims that the English language is a lingua franca in the field of medicine. Indeed, English is used as a tool for communication by physicians and other members of the medical community whose mother tongue is not English.

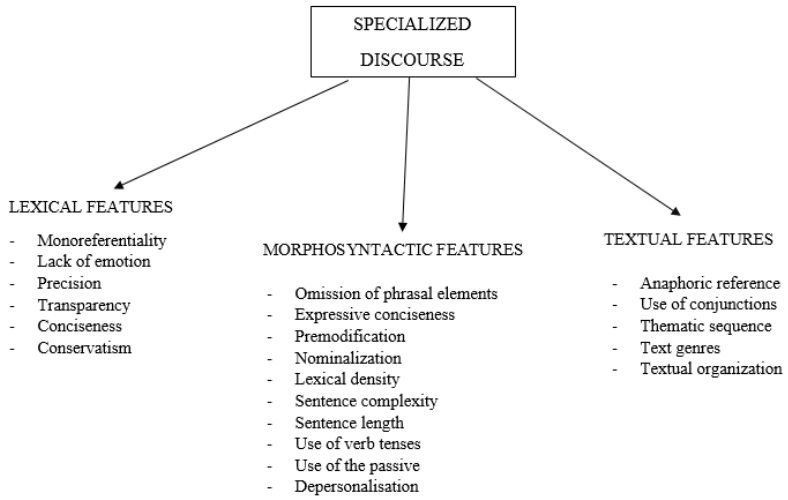
In the next paragraph, before focusing on the language of medicine, I will describe the most important characteristics of Languages for Specific Purposes.

1.1.2 Main features

To describe Languages for Specific Purposes, the main characteristics identified by Gotti will be taken into consideration in this paragraph. As the examples in Gotti (2011) are not related to a specific specialized language, I will make reference to several fields of knowledge, such as law, chemistry, economics. Some examples will also be drawn from the language of medicine; however, full attention to this field will be paid in the next paragraph.

First of all, Gotti claims that the characteristics of "specialized discourse" can be subdivided into three main categories: lexical, syntactic and textual. The features of specialized discourse can, therefore, be represented as in Figure 1.1:

Figure 1.1: Main features of specialized discourse according to Gotti (adapted from Gotti, 2011)



Starting from the lexical dimension, monoreferentiality is one of the most important features of specialized languages. Monoreferentiality means that, in a specific context, a given term takes only one meaning. That is, there is a mutual relation of univocity between a term and the concept it refers to: a given term defines only a concept and a concept is defined only by a given term. Therefore, because of this mutual relation, synonyms (theoretically) cannot be used, and a term can be replaced only by its definition or a paraphrase.

The second feature is lack of emotion. In specialized discourse, terms only have a denotative meaning. In other words, they are used to communicate in a neutral way, without adding connotative shades of meaning, like emotional or aesthetic traits. To describe this feature, Gotti takes into consideration the word *lion*. In common language, this word can have connotative meanings, which go beyond the literal meaning. Indeed, the lion is the symbol of fierceness, courage and majesty, but it also symbolizes aggressiveness. However in zoology, a subject that clearly has its own specialized language, *lion* simply means:

> "A large heavily built social cat (Panthera leo) of open or rocky areas chiefly of sub-Saharan Africa though one widely distributed throughout Africa and Southern Asia that has a tawny body with a tufted tail and a shaggy blackish or dark brown mane in the male."[3]

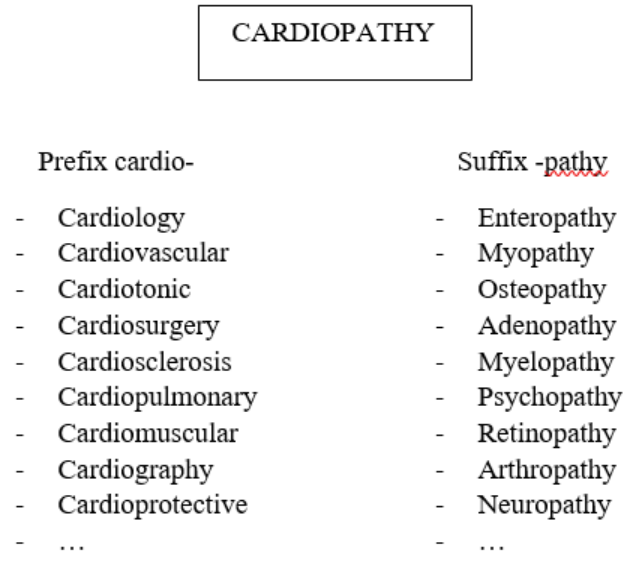
Precision and transparency are other lexical features of specialized languages. Precision, also called referential precision, means that every term has to point immediately and directly to the concept it refers to, to make communication clear and straightforward. Consequently, indirect literal devices like euphemism are usually avoided in specialized discourse. That is, words that are regarded as harsh, inappropriate or offensive should not be replaced by terms which could cause ambiguity and misunderstandings only because they are believed to be more polite and appropriate.

As regards transparency, it refers to the possibility of "decoding" the meaning of a term from its surface form (Gotti, 2011: 28). For example, French chemist Lavoisier reformed chemical nomenclature and ordered chemical compounds in a system in which each suffix was given a specific meaning. In this way, it was possible to distinguish similar terms by just looking at their forms: *sulphite* and *sulphate* cannot be confused by

[3] https://www.merriam-webster.com/dictionary/lion (last visited on 28/12/2016).

a chemist, because the suffix *-ite* has a specific meaning, completely different from that conveyed by the suffix *-ate*. As we will see in paragraph 1.2.2, transparency is particularly important in medical language. Medical terms can be usually analysed by taking into consideration their different components. For example, in the term *cardiopathy* two elements can be identified: the prefix *cardio-* (which means heart) and the suffix *-pathy* (which means disease). By simply looking at the structure of the term *cardiopathy*, we can trace its meaning*: cardiopathy* is a term that denotes any disease of the heart. Transparency is also strictly related to the creation of coherent systems, which are useful to organize knowledge. For example, starting from the components of *cardiopathy*, two different paradigmatic systems can be created. As Figure 1.2 shows, the first system is based on the prefix *cardio-*, while the second is created starting from the suffix *-pathy*.

Figure 1.2: Paradigmatic systems created from the term *cardiopathy* (adapted from Cortelazzo, 2015-2016)



The fifth lexical characteristic of specialized discourse is conciseness. Conciseness refers to the fact that experts usually communicate trying to use short forms. For example, more terms can be merged to create a single term, or they can be replaced by acronyms and abbreviations. As can be seen from the following examples taken from Gotti (2011: 31-32), strategies to make texts concise can be found in different semantic fields and in several national languages:

- The French *informatique* and the Italian *telematica* are examples of words created through the merging of two lexemes.

  Information + automatique→informatique

  Telecomunicazione + informatica→ telematica
- The English medical terms *urinalysis* and *contraception* are example of reduced forms of longer terms.

  Urinoanalysis→ urinalysis

  Contraconception→ contraception
- The English medical expressions *dead on arrival* and *diabetic ketoacidosis* can be replaced by the acronyms DOA and DKA.

To conclude the analysis of LSP lexical features, conservatism is another characteristic which has to be taken into account. Obsolete terms are frequent in specialized discourse for one main reason, i.e. they are highly codified and universally accepted, while new terms could be unclear or ambiguous. The use of obsolete terms is particularly normal and relevant to legal language, where archaic forms – such as *thereof*, *henceforth* or *hitherto* – are very common.

As regards syntax, Gotti points out that the difference between general and specialized languages is not qualitative but quantitative. The author (2011: 49) claims:

> "[…] the specificity of morphosyntactic phenomena found in specialized languages is not a qualitative but a quantitative one. Certain features may also occur in general language but their higher frequency specialized discourse makes them typical only of the latter."

In other words, general and specialized language share some characteristics from a syntactic point of view; what is different is the frequency with which they occur.

The first syntactic feature of specialized discourse is the frequent omission of grammatical words (also called phrasal elements) such as articles of preposition. This characteristic is related to the lexical principle of conciseness described above. The omission of phrasal elements, which does not have to affect comprehension, is fundamental to create a compact syntactic structure. To give an example, articles and prepositions are usually omitted in technical manuals, both in English and in Italian.

The second syntactic characteristic is expressive conciseness. Apart from the omission of phrasal elements, other linguistic devices can be used to make the sentence

more compact. In the following examples taken from Gotti (2011: 51), relative clauses are omitted and replaced by adjectives used attributively:

- metal which can be worked → workable metal
- force which reacts → reactive force
- absorbent material → material which absorbs

Furthermore, in relative clauses which contain passive verb forms, the relative pronoun and the auxiliary verb can be omitted:

- Pieces of iron which are left in the rain become rusty → Pieces of iron left in the rain become rusty

Another possibility to achieve conciseness is to replace the verb of a relative clause with a present participle:

- Tungsten is a metal which retains hardness at red-heat → Tungsten is a metal retaining hardness at red-heat

As argued above, some elements of clauses can also be omitted in general language, but in specialized discourse this phenomenon is particularly relevant. However, it is important to use elliptical forms correctly, without affecting communication and causing ambiguity or misunderstandings.

Another typical syntactic feature is premodification. In English, the right-to-left construction can be used to make clauses denser and shorter. A common example of pre-modification is the use of nouns with an adjectival function before other nouns. For instance in the following example, drawn from the language of economics, the relative clause disappears and the information is "condensed" before the subject "rate":

- The rate at which inflation grows → the inflation growth rate

Even though premodification is useful to condense information in shorter segments, a possible negative consequence of it is loss of transparency. Indeed, long noun phrases that contain much information can become ambiguous. However, Gotti (2011: 57) argues that, despite the risk of ambiguity, premodification is very appreciated by specialists: even though a noun phrase is ambiguous, experts are usually able to understand its meaning by relying on their specialist knowledge or making reference to the context.

Nominalization is another important feature of specialized languages. With nominalization, verbs are replaced by nouns to describe actions or processes. This phenomenon is also widespread in general language, but it is even more pervasive in special languages. As a consequence, verbs lose value, and lexical verbs are often replaced by the verb "to be" to indicate relational processes (Gotti, 2011: 60-61):

- Oscillations depend on frequency→ oscillations are frequency-dependent
- Danger does not practically exist → danger is practically non-existent

The preponderance of nouns is sometimes so evident that verbs can be completely omitted. This phenomenon can be observed in medical reports, where verbs are completely omitted when they have "low information content" (Friedman et al., 2002: 233).

Frequent nominalization is strictly related to lexical density. Lexical density, which is higher in specialized discourse, refers to the percentage of content words in a text. Content words are those which carry a semantic meaning, while function words have a grammatical role.

Other syntactic features are sentence complexity and sentence length. Even though the structure of sentences becomes more linear thanks to strategies such as nominalization, it becomes more complex to interpret sentences. Comprehension is made even more difficult because sentences are usually longer in specialized discourse than in general language.

Gotti also underlines that in specialized discourse verb tenses are used in a different way from their use in common language. For example, Gotti (2011: 70) highlights that in specialized languages the present indicative tense – both in active and passive form – is far more common than in general language, and it often replaces the past simple tense.

Passive forms with the frequent omission of the agent and depersonalization are other features which are very common in specialized languages. They are used above all to put emphasis not on the actor behind an action, but on an action or its outcome.

Gotti (2011) also analyses the textual characteristics of specialized languages, focusing again on quantitative differences.

Anaphoric reference is very common in general language but generally avoided in specialized languages. That is, in general language people use words that refer back to other ideas already mentioned before. The use of anaphoric elements is very useful to

create a coherent framework, achieve cohesion and avoid repetitions. For example, pronouns can be used to refer to words used before in a text. However, in specialized texts anaphoric reference is not common, and specialists prefer to repeat terms to avoid misunderstandings.

Furthermore, in specialized languages a more accurate use of conjunctions can be seen. That is, conjunctions commonly used in general language are replaced by longer but more transparent conjunctions. This phenomenon is very frequent in legal language, to guarantee a univocal interpretation and avoid misunderstanding. For example, in the following sentence taken from Gotti (2011: 84), the common preposition *if* is replaced by the longer but more explicit paraphrase *in the event that*.

- In the event that it is decided that action should be taken against any such third party, the Member Firm may take such action in its own name.

Another characteristic of specialized discourse is related to its thematic structure, that is the way in which information is given. "Theme" refers to the topic and is the starting part of the clause, while "rheme" refers to the information given about the theme. Usually, but not always, theme is the already known information, while rheme contains new information which cannot be found in the text or cannot be retrieved from the context. In specialized discourse, thematic structure is usually similar to that adopted in general language. However, specialists sometimes consciously decide to change the order in which information is presented. For example, Pettinari (1983, quoted in Gotti, 1991: 114) says that in surgical reports information can become the theme or the rheme of the sentence on the basis of its importance for the surgery itself.

Finally, the last feature of specialized discourse is the compliance with text genres and "the norms governing the construction of its different texts genres" (Gotti, 2011: 87). In other words, specialized discourse complies with specific genres and universally accepted patterns. An interesting research on text genres has been conducted by Van Dijk, who deals with specialized texts and shows that they are organized in a more specific way than non-specialized texts (Van Dijk, 1977, in Gotti, 2011: 89). Making reference to Van Dijk's work, Gotti (2011: 89) takes the research article as an example to show that each genre follows a specific pattern. Indeed, the research article is based on a fixed structure, which includes four different parts: introduction, problem, solution, conclusion. They cannot be omitted or their order cannot be changed.

1.2 The language of medicine

As argued in Paragraph 1.1.1, the umbrella term "Languages for Specific Purposes" includes other labels related to specific fields of knowledge or activity. One of the fields of activity included in this label is medicine. In particular, scholars talk about English for Medical Purposes, or EMP (Mićić, 2013: 219) or Medical English, also known with the acronym ME (Salager-Meyer, 1989). Before describing the most important characteristics of EMP, I will briefly resume the history of modern medicine, focusing on the linguistic point of view.

1.2.1 A historical overview

As Gotti and Salager-Meyer stress, medicine has always played a fundamental role "in all cultures and periods because it represents a common concern for all human beings: their health and lives." (2016: 1)

Hippocrates of Kos is commonly regarded as the father of medicine, and his native land Greece as the cradle of modern medicine. In his works, written between the 5th and the 4th century BC, Hippocrates separated medicine from religion and claimed that diseases were not the punishment inflicted by gods on mortals. Hippocrates and his disciples, indeed, believed that diseases were the result of natural processes. In particular, Hippocrates elaborated one of the first medical theories. He believed that four humors are found in human body: black bile, yellow bile, phlegm and blood. When these humors are not balanced, the human body became vulnerable and different diseases could affect the patient.[4] Even though modern medicine is light years away from ancient Greek medicine, it is undeniable that Hippocrates' contribution was huge and, to some extent, still actual. For instance, some terms coined by this Greek physician and his disciples, such as *arthritis* or *pleuritis*, are still used nowadays.

When the Romans conquered Greece in the 1st century AD, Greek medicine was imported in the Roman Empire. The Romans did not have their own medical tradition and translated the writings of Greek physicians tirelessly. A huge contribution was made by Aulus Cornelius Celsus, a Roman aristocrat who wrote a medical treatise, *De Medicina*. an encyclopaedia which includes the translations of the works written by Greek physicians. As Wulff (2004: 187) points out, Celsus adopted three main translation

[4] http://ancienthistory.about.com/cs/hippocrates/a/hippocraticmeds.htm (last visited on 10/01/2017).

strategies in his work. First, he imported some Greek terms, without making any change and maintaining the Greek alphabet. Secondly, he translated some Greek terms, replacing the Greek alphabet with the Latin one. To conclude, he tried to keep the "vivid imagery of the Greek anatomical terminology by translating Greek terms into Latin, such as *dentes canini* from Greek *kynodontes* (dog teeth) […]." (2004: 187)

During the Middle Ages, another language played a fundamental role in medicine. Arabic and Arabic physicians made a valuable contribution to Western medicine. Some Arabic terms were included in medical terminology. For example, *nucha* and *syrup* are English medical words derived from Arabic. However, the prestige of Arabic soon started to decline and, with the rediscovery of the classics during the Renaissance, Arabic terms were translated into Latin, which became the new language of medicine. However, some exceptions can be found to this. For example, Swiss physician Philippus von Hohenheim, commonly known as Paracelsus, enriched the medical vocabulary of the time, coining names for the diseases he discovered. As Dobrić (2013: 496) stresses, he preferred to use German terms instead of Greek or Latin roots. He also lectured in German, in order to make medical knowledge accessible to lay people. However, his attempt to impose the German language on Latin failed, and in Europe Latin continued to be used in medical texts until the beginning of the 19th century.

However, in the first half of the 19th century, medical Latin slowly started to be replaced by national medical languages, such as medical English, medical Italian, medical German, medical French. Nowadays, medical English has become the new medical Latin, as English is used all around the world, thus allowing physicians who speak different national languages to communicate with each other. The importance of medical English as a *lingua franca* is undeniable. A large number of medical journals is written in English, and it is also the main language used in conferences where physicians coming from different countries discuss medical issues and discoveries. As some authors stress, the importance of English in medical discourse is also represented by the large number of Anglicisms used in several national languages. For instance, Serianni (2005: 186-187) identifies English nouns and adjectives that are commonly used in Italian medical language. Some of them can be found in the expressions *ipertensione borderline*, *shock emorragico* or *stress patologico*, which are used to define or describe diseases. Others, such as *stent coronarico* or *pacemaker*, describe devices used by surgeons. Furthermore,

some Anglicisms such as *breath-test* or *follow-up* are used in diagnostics. The same phenomenon is also described by Dobrić (2013: 496-497), who says that English medical terms are very common also in German and Croatian, and that they are often included in hybrid compounds. However, the author also stresses that English terms are sometimes replaced by domestic terms. For example, the English word *borderline* is used both in the German *Borderline-Persönlichkeitsstörung* and the Croatian *borderline poremećaj*, but the domestic terms *Grenzliniepersönlichkeitsstörung* and *granični poremećaj* can be used respectively.

1.2.2 Main characteristics

In this paragraph, I will describe the language of medicine, taking into consideration its most important characteristics and giving examples taken from the texts I have analysed in my research.

An author who is interested in analysing the language of medicine is Serianni (2005). In his work, he mainly focuses on the Italian language of medicine. However, the features he identifies can also be found in English medical language, as can be seen in Banay (1948), Dobrić (2013) and Mićić (2013).

One of the most important lexical characteristics of the language of medicine, which is to be found in any specialized language, is transparency. Transparency is mainly achieved through medical terminology, which is based on ancient Greek and Latin. This phenomenon can be observed above all in the large variety of affixes, both prefixes and suffixes, which derive from ancient Greek and Latin.

Table 1.1 below sums up some of the most common affixes in Italian and English language of medicine.

Table 1.1: Affixes of Greek and Latin origin used in medicine in Italian and English (adapted from Cortelazzo, 2015-2016)

	Type of affix	Meaning	Examples in Italian	Examples in English
-ismo -ism	suffix	Condition, disease	Nanismo Astigmatismo	Dwarfism Astigmatism
-osi -osis	suffix	Degenerative disease	Artrosi Sclerosi multipla	Arthrosis Multiple sclerosis
-ite -itis	suffix	Inflammation	Tonsillite Artrite	Tonsillitis Arthritis
-oma -oma	suffix	Tumor	Sarcoma Mieloma	Sarcoma Myeloma
Emo- Hemo- or hema-	prefix	Related to the blood	Emoglobina Emopatia	H(a)emoglobin Hemopathy
Epato- Hepat- or hepatic-	prefix	Related to the liver	Epatite Epatologia	Hepatitis Hepatology
Iper- Hyper-	prefix	Beyond normal	Ipertensione Ipertiroidismo	Hypertension Hyperthyroidism
Ipo- Hyp(o)-	prefix	Below normal	Ipotensione Ipotiroidismo	Hypotension Hypothyroidism

As we can see from Table 1.1, the majority of medical words is obtained from the combination of Greek and Latin roots. Therefore, to "decode" the meaning of complex medical words, the meaning of their components should be analysed separately. For example, *gastroenterology* is made up by three different Greek words: *gaster*, which means "stomach", *entero* which means "intestine", and *logos*, which stands for "discourse". By joining together these elements, *gastroenterolo*gy can be defined as the study of the digestive system, including the stomach and the intestine.

Some medical terms based on Greek or Latin terminology that I have found in my corpus are:

- Demyelination: it is the process of destruction of the myelin sheath around a nerve. The Latin prefix *de-*, which means *away from*, is followed by the Greek term *myelos*, which means *marrow*.
- Meningitis: it is the inflammation of the membranes that cover the brain and the spinal cord. This term is made up of the Greek term *meninx*, which means membrane, and the Greek suffix *-itis*, which denotes the inflammation of a specific body part.
- Hyperglycaemia: it indicates the excess of glucose in blood. It is a Latinized form of three Greek elements: *hyper-* (which means *above normal*), *glycys* (*sweet*) and *haima* (*blood*).
- Neuropathy: it indicates nerve damage. *Neuro* is a Greek term meaning *nerves*, while the suffix *-pathy*, which comes from the Latin *-pathia* and the Greek *-patheia*, refers to a disorder of a body part.

Another lexical characteristic of the language of medicine is the use of eponyms, expressions in which "a name or phrase is formed from or including a person's name."[5] Eponyms can be used to describe different entities: diseases (*Alzheimer disease*), medical signs (*Lhermitte's sign*), anatomical parts (*Fallopian tube*) or medical treatments (*Heimlich's manoeuvre*). The names included in eponymous expressions are usually those of the physicians who discovered such diseases, parts of the body or treatments. However, the patient's name is sometimes included in eponymous expressions. For example, *Amyotrophic Lateral Sclerosis* is also known as *Lou Gehrig's disease*, because it became famous all around the world when it affected the baseball player Lou Gehrig.

Also mythological or literary characters can be included in eponyms. For instance, *Achilles tendon*, which is the tendon in the back of the ankle, takes its name from the famous passage of Greek mythology where Thetis, Achilles' mother, dips him in the river Styx to make him immortal. However, she does not dip his heel, which becomes his vulnerable part. Achilles tendon is not the only eponymous name inspired by mythology. *Central Hypoventilation Syndrome* is another one and refers to an illness which can cause respiratory arrest while sleeping. It is also known as *Ondine's curse*. This name is drawn from a legend belonging to Germanic mythology. Kolga is an Ondine, a water nymph,

[5] http://medical-dictionary.thefreedictionary.com/eponym (last visited on 19/12/2016).

who falls in love with a mortal man, who promises her to be faithful to her until his death. When the nymph discovers that her husband has not kept his promise, she curses him. When he is awake, he can breathe, but if he falls asleep, he will stop breathing and die.[6] Another example of an eponym, this time inspired by a literary character, is the *Pickwick Syndrome*. It a complication of extreme obesity, characterised by a severe cardiovascular compromise, and takes its name from a character invented by Dickens for one of his novels. Some eponyms I have found in my corpus are:

- Parkinson's disease: it is a chronic progressive movement disorder. James Parkinson was the surgeon who systematically described this disease.
- Alzheimer's disease: it is a chronic neurodegenerative disease which takes its name from Aloysius Alzheimer, the first physician who identified this disease.
- Down's syndrome: it is a genetic disorder which takes its name from John Langdon Down, who first described this syndrome.
- Lhermitte's sign: it refers to an electric-like sensation induced by neck flexion which originates in the neck and spreads down the spine. It was described by Jacques Jean Lhermitte.
- Adam's apple: it is the prominence at the front of the throat formed by the largest cartilage of the larynx. It is more prominent in men than in women, and it takes its name from Adam, the Biblical character.

The third lexical characteristic of the language of medicine is conciseness. To make a text concise, acronyms – terms formed by the initial letters of the words included in a phrase – are used. Serianni (2005: 213) argues that acronyms are used especially in texts written by doctors and addressed to other doctors or people working in healthcare. However, as we will see in Chapter 4, nowadays acronyms are also used in texts addressed to patients, who do not have the same knowledge of experts. A large number of acronyms used in medicine refer to diseases. Some examples are AIDS, which stands for Acquired immunodeficiency syndrome; MS, the acronym for Multiple Sclerosis; ALS, or Amyotrophic Lateral Sclerosis. Other examples of common acronyms which do not refer to diseases are ER (Emergency Room), CT (Computerized Tomography), AED (Automated External Defibrillator), ECG (Electrocardiogram) and BP (Blood

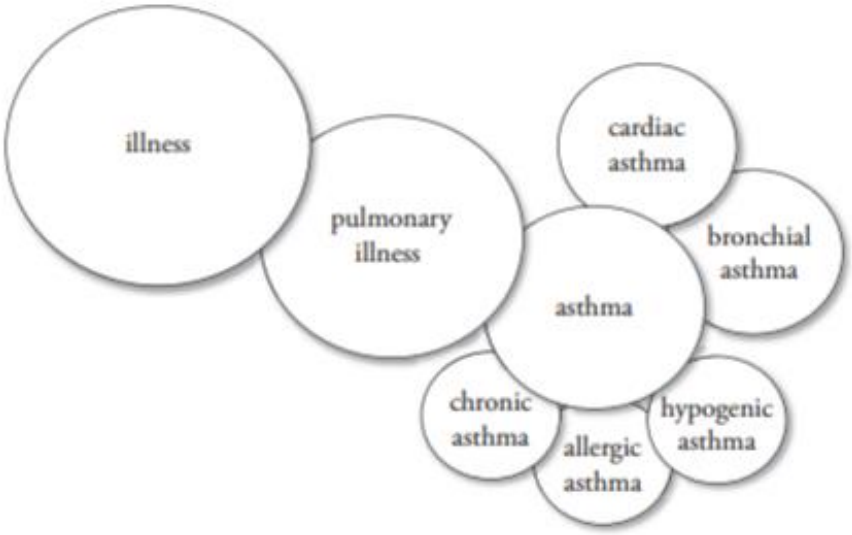
[6] http://diacritica.it/strumenti/undine-il-mito-dietro-la-leggenda.html (last visited on 20/12/2016).

Pressure). Conciseness is also achieved by using reduced forms, such as contraception (contra+conception) and urinalysis (urino+analysis). Apart from MS and AIDS, in my corpus I have found other acronyms, such as:

- HIV: Human Immunodeficiency Virus
- MRI: Magnetic Resonance Imaging
- PEP: Post-Exposure Prophylaxis
- CD4: Cluster of Differentiation 4
- ART: Antiretroviral Therapy
- UTI: Urinary Tract Infection
- PSA: Prostate-Specific Antigen
- GORD: Gastro-Oesophageal Reflux Disease

Another characteristic related to lexis is the presence of strong hierarchical relations among medical terms. As Mićić (2013: 225) underlines, these hierarchical relations are established between terms with a wider meaning – called hyperonyms – and terms with a more specific meaning – called hyponyms. The use of hypernyms and hyponyms is very helpful to classify diseases and facilitate diagnosis. An example of hierarchical relations between medical terms is provided by Mićić (2013), and is represented in Figure 1.3

Figure 1.3: Hierarchical relations related to the word *illness* (taken from Mićić, 2013: 225)



Even though the language of medicine shares the lexical features of other specialized languages that were described above, there are some exceptions. For example, univocal

relations between terms and the entities they refer to are not always respected, with negative consequences on transparency. Indeed, in medical language a large number of synonyms can be found; this goes against monoreferentiality, because the same referent should not be denoted by different terms. The use of synonyms is mainly related to diaphasic variations, that is, those variations related to different registers and/or different users. This is the reason why some entities can often be defined by either a technical term or a more informal one. A clear example of this phenomenon is represented by the terminology used to describe the two most important types of blood cells. Scientific terms used to define these types of cells are *erythrocytes* and *leukocytes*. They derive from ancient Greek through Latin; *erythros* and *leukos* are Greek terms which respectively mean *red* and *white*, while *-cyte* is a suffix used in modern science which comes from the Latinized form of the Greek *kytos*, meaning *cell*. However, these blood cells are usually called *red blood cells* and *white blood cells*, both by physicians and patients. Physicians generally tend to use terms derived from ancient Greek or Latin when they talk with other experts, while less technical variants are used above all when a lay public is involved. The same phenomenon can also be observed in the synonyms *larynx* and *voice box*, *coagulation* and *clotting*, *genitourinary system* and *plumbing*, *herpes zoster* and *shingles*.

Exceptions to monoreferentiality also occur when physicians use different names to refer to the same disease. For example, a disease mentioned above, *Amyotrophic Lateral Sclerosis*, is also known as *Lou Gehrig's disease*. However, as Canziani (2011: 230) underlines, in many cases the same disease is given different eponymic names because medical breakthroughs were achieved more or less in the same period in different countries in the same area, and physicians wanted to affirm their supremacy on the discovery of the disease. This is the reason why, for instance, the medical condition called *megacolon* is known in Denmark as *Hirschsprung disease*, in the Netherlands as *Ruysch disease* and in Italy as *Malattia di Battini* o *Malattia di Mya*.

As regards the syntactic level, one of the most important syntactic characteristics of the language of medicine is the passive voice. The use of the passive voice is particularly useful when the performer of an action is "unknown, irrelevant, or obvious" or "less important than the action" or when the receiver of the action is the main topic[7]. The

[7] http://www.biomedicaleditor.com/passive-voice.html (last visited on 23/01/2017).

following examples, all taken from my corpus, represent the three uses of passive forms that I have just mentioned.

- It should be noted that people who are aware of the 'correct' HIV transmission routes tend to be more highly educated.
- If PEP is needed it should be started as soon as possible – within hours of exposure – and certainly within 72 hours.
- You should be carefully monitored for any effects on your liver, as it can cause problems for some.

In the first example, the performer of the action "to note" is irrelevant, because the important information is given in the subordinate clause. In the second example, about Post Exposure Prophylaxis as a way to prevent HIV infection, the performer is less important than the action itself. That is, the focus in not on the person who receives this type of treatment, but on the method of administration of the treatment itself. In the third and last example, the passive voice is particularly useful to highlight the fact that "you", the receiver of the action, is the main topic.

Premodification is another syntactic feature that can be observed in medicine: information can be condensed by putting nouns with an adjectival function before other nouns. This phenomenon is very common, as some scholars stress (Carrió Pastor, 2008; Maglie, 2009; Mićić, 2013). Carrió Pastor (2008) gives a large number of examples of long noun phrases identified in a corpus of medical texts; one of this example is *blood urea nitrogen concentration* (also known with the acronym *BUN concentration*). This noun phrase, made up of a head noun, concentration, and three pre-modifiers, blood, urea and nitrogen, is a perfect example of premodification. The meaning of this long noun phrase is "concentration of the nitrogen contained in a urea molecule in the blood". As can be seen, the use of a long noun phrase allows physicians to use shorter forms, avoiding prepositions, nouns, past participles, gerunds and relative clauses. Other examples of premodification are *gonadotropin-releasing hormone* (Mićic, 2013: 223), which stands for "hormone that releases gonadotropin", and *crisis intervention techniques* (Maglie, 2009: 30), which means "techniques which are used for intervening in a crisis". In my corpus, I have identified the following examples of premodification:

- Streptococcal antigen test
- Stigma reduction interventions

- MS-related cognitive symptoms
- Child's blood sugar levels
- Substance abuse treatment programs
- Angiotensin-converting enzyme inhibitor

From a textual point of view, the most important characteristic is probably the existence of many medical genres that follow specific rules. Maglie (2009: 44) identifies a large number of textual genres, including journal articles, research papers, case histories, reports and patient information leaflets (PILs). As regards PILS, Gotti (2015: 11) says that they are "a genre of medical discourse which has recently received a considerable amount of attention from linguists". Indeed, several studies have been carried out to analyse this medical subgenre, both from a terminological and stylistic point of view. One of this studies was conducted by Clerehan et al. (2005: 335), who argue that "[…] patient information leaflets about drug therapy may be regarded as a subset of the genre of healthcare materials." Furthermore, in a comparative study of Italian and English PILs carried out by Cacchiani (2006), PILs are defined as "highly conventionalised and extremely structured multifunctional texts." (2006: 28)

Maglie also focuses on another textual feature, anaphoric reference, saying that it is barely used in medicine. Indeed, physicians prefer to repeat concepts, instead of replacing them with other words, such as pronouns. In this way, they avoid ambiguity and ward off serious risks that could arise during delicate operations, such as surgeries.

1.2.3 Use of metaphors

The use of metaphors in science has already been discussed by Bruner (1992) and De Donato-Rodríguez and Arroyo-Santos (2011). Some scholars have specifically focused on the medical science and its relation with figurative language. An author who talks about the use of metaphors in medicine is Serianni (2005). He argues that every type of language, even the most neutral one, tends to include words that convey a connotative meaning, that is, a meaning that goes beyond the literal one. He claims that in the past, when medical imaging techniques were not available, the use of metaphors was the best way to describe pathological processes or parts of the body that were not visible from the outside.

Serianni then deals with metaphorical expressions that nowadays are used by physicians, giving some examples to show that metaphors are pervasive in this specialized language. He focuses on Italian medical language, but his discourse could also be applied to English, as can be seen in Banay (1948), Mićić (2013) and Nagy (2014). Furthermore, some of the Italian examples that he provides are also used in English. Among these examples, are *lingua a carta geografica* – in English *geographic tongue* – and *sensazione di sabbia negli occhi* – or *the feeling of having sand in the eye*.

Another interesting and accurate reflection on the use of metaphors in medicine is provided by Verghese.[8] In his TED talk, he focuses on the presence of metaphors in medicine, arguing that "metaphors make the strange familiar" and that they are useful to organize how knowledge. Furthermore, relying on his knowledge as a physician, he lists some of the metaphorical expressions that he has bumped into in his life. First of all, he highlights that different metaphors are used in different branches. For example, anatomy – the study of the structure of the body – uses the metaphor of the house to describe body parts. The semantic field of house is represented by expressions like *chambers of the heart*, *fascial sheets*, *endocardial cushion*, *tonsillar columns*. On the other hand, in physiology – the study of the way in which the body works – different metaphors can be found. The liver is compared to a factory, the heart to a pump, the lungs to oxygenators and the immune system to an army. Verghese also focuses on the large number of metaphorical expressions drawn from the semantic field of food. For instance, he mentions *apple-core*, which defines a lesion of the colon; *strawberry* and *raspberry tongue*, used to describe the appearance of the tongue in patients with scarlet fever; *cherry angioma*, to refer to the abnormal proliferation of blood vessels on the skin. However, as Verghese points out, not only are metaphors used by physicians to define or describe illnesses or body parts, but they are also used by patients, who sometimes invent metaphors to describe their symptoms.

The pervasiveness and importance of metaphors in medicine are so evident that, as Canziani (2016) underlines, courses about metaphor teaching have been introduced in some medical education programmes. Starting from the assumption that medical students often have difficulties in understanding and using metaphors to communicate with patients, the author describes a study that was carried out in Italy on the topic. In this

[8] http://www.tedmed.com/talks/show?id=292979 (last visited on 15/01/2017).

study, metaphorical competence was assessed, which entails "different abilities, including the ability to detect the similarity between different domains and the ability to understand one thing in terms of another" (2016: 187-188). As the author argues, research on this competence was influenced by many factors, such as the degree of conventionality and salience of metaphors and the presence or absence of contextual clues. The study clearly shows that metaphor competence was better developed by students who received teaching on metaphor comprehension strategies. This is the reason why today students of medicine are taught to identify, contextualize and interpret metaphors.

In the next Chapter, I will give other examples of metaphorical expressions used in medicine, which will reinforce what I have argued in the last paragraph of this Chapter. Furthermore, I will focus on another aspect related to metaphors, that is, the effects that these rhetorical figures can have on patients.

CHAPTER 2: Appropriateness and effects of the use of metaphors in medicine

In the previous Chapter, I have discussed the use of metaphors – usually regarded as mere literary embellishments but in fact essential linguistic devices that shape our experience – in specialized languages and in particular in medicine. In this Chapter, I will focus on the effects that they have on patients, physicians and caretakers.

As Hydén and Mishler (1999) claim, the role of language in medicine cannot be disregarded. The way in which language is used in healthcare is, indeed, one of the factors that influence the relationship between patients and physicians. As we will see in this Chapter and also in Chapter 4, metaphors play a fundamental role in medicine, influencing patient-physician communication. A large number of physicians, scientists and writers have expressed their opinions on the effects and appropriateness of metaphors and similes used in medicine and healthcare. As Pickering (1999: 362) claims, anti-metaphor and pro-metaphor schools have debated these issues:

> "Those who hold that metaphor has no role in science argue that metaphors are deceptive, false, and good only for linguistic decoration. […] In contrast, the pro-metaphor school holds that metaphors can play an important role in science, they see metaphor playing a part in generating hypotheses, extending explanation, stimulating original thought, and so forth."

Therefore, in this intense debate, different and often contrasting points of view have been expressed. Some scholars argue that metaphors are a powerful tool to talk about medical issues and to improve the communication between patients and doctors. To behave professionally, physicians should make rational decisions, avoiding emotional involvement with their patients. However, this professional attitude could erect a barrier between physicians and patients, and cause detachment and fear of abandonment in the latter. Therefore, doctors sometimes use metaphorical expressions to create an empathic bond with their patients: a doctor who says: "Don't give up, you're a fighter!" is trying to communicate with the patient, expressing compassion and giving encouragement. On the other hand, other scholars claim that metaphors should not be used, because they can damage patients and lead to negative consequences. A possible risk associated with metaphorical language is objectification: patients who are treated like objects start to think that physicians are interested in curing their physical problems without taking into

due consideration their emotions and feelings. A large number of examples of objectification will be given in Paragraphs 2.1.1 and 2.1.2.

On the other hand, some scholars focus on the powerful role of metaphors in medicine. For instance, Mabeck and Olesen (1997: 278) claim that "many patient do not need fine-grained biomedical information", but "explanations about their health problems that involve everyday lifeworld experiences." Another supporter of the use of comparisons in medicine is Periyakoil (2008), an expert on terminal illnesses and palliative care. The author argues that metaphors should be used for different reasons: they turn familiar what is unfamiliar, allowing physicians to explain something difficult, new or unknown effectively and economically. Furthermore, they can "soften" delicate issues, dealing with them indirectly, or can help patients to express their feelings and take difficult decisions.

In contrast, American intellectual and novelist Sontag openly opposed the use of metaphors in medicine. In her work *Illness as Metaphor* (1978: 3), this author says that illness should not be explained metaphorically:

> "My point is that illness is not a metaphor, and that the most truthful way of regarding illness – and the healthiest way of being ill – is one most purified of, most resistant to, metaphoric thinking. Yet it is hardly possible to take up one's residence in the kingdom of the ill unprejudiced by the lurid metaphors with which it has been landscaped. It is toward an elucidation of those metaphors, and a liberation from them, that I dedicate this inquiry."

Sontag argues that patients can experience isolation and marginalization because of metaphors and their stigmatizing and discriminatory effect. However, she also takes a step further: not only does she talk about the use of metaphors in medicine, but she also describes the way in which illnesses themselves are used in a metaphoric way in other domains. This phenomenon started in the past but became particularly widespread in the 20th century, as several diseases were used as target domains to describe different source domains. That is, people, countries, political and economic systems and historical and political events were compared to several illnesses, such as cancer, tuberculosis, cholera and syphilis. For example, Frank Lloyd Wright, one of the most important architects and interior designers of the 20th century, described the new modern and chaotic city as a cancer, because of its uncontrollable and abnormal growth. Diseases like tuberculosis and cancer became very popular to describe groups of people: in the aftermath of the Great

War, Hitler accused the Jews of producing "a racial tuberculosis among nations" (1978: 83). Some years later the Nazi rhetoric was modernised and the Jews were compared to a cancer. The association with cancer was probably the one that had a stronger impact and approval in the anti-Semitic climate. As Sontag (1978: 81) underlines in the following extract, in the concentration camps the Jews were given a treatment which was more similar to that for cancer than that for tuberculosis.

> "The imagery of cancer for the Nazis prescribes 'radical' treatment, in contrast to the 'soft' treatment thought appropriate for TB – the difference between sanatoria (that is, exile) and surgery (that is, crematoria)."

When people suffered from tuberculosis, physicians usually suggested going to exotic destinations to their patients, so as to recover from the disease. However, the Nazis did not just want to "exile" the Jews from Germany and the rest of Europe, but wanted to physically destroy them. As a result, the comparison with tuberculosis became inappropriate and was later replaced by cancer metaphors. Indeed, cancer treatments, like chemotherapy or surgery, are meant to "annihilate" and "destroy" the abnormal cells that grow in our body. Physical annihilation is thus what cancer treatments and the Nazi rhetoric have in common: according to the Nazi plan called "Final Solution", all the Jews had to be exterminated in the camps like cancer cells are "exterminated" thanks to medical treatments.

Sontag (1978: 81) then shows that in metaphorical thinking different domains can overlap. According to the author, the Nazis described cities as exhausting and debilitating places. As a consequence, in the second half of the 20th century the Jews, who embodied an enervating disease like cancer, became the emblem of city life and all its negative characteristics:

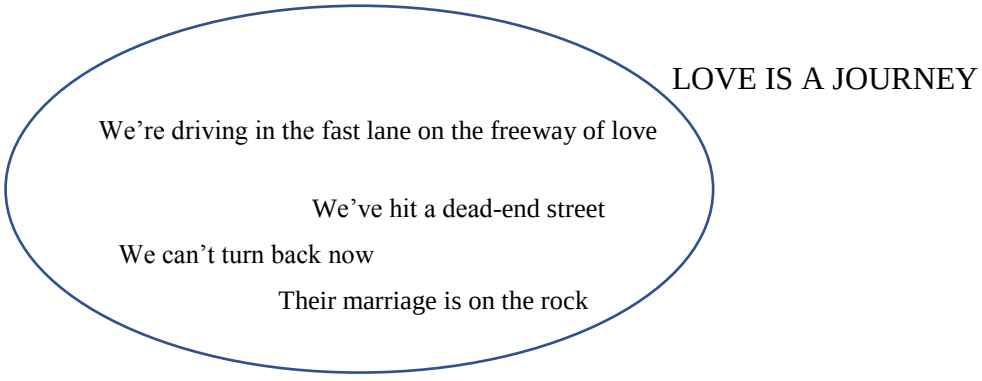
> "(The Jews were also identified with, and became a metaphor for, city life – with Nazi rhetoric echoing all the Romantic clichés about cities as a debilitating, merely cerebral. Morally contaminated, unhealthy environment)."

The fulcrum of this debate is not the truthfulness of metaphors and similes. That is, it is not important that they reflect reality accurately. What is fundamental is their effect on patients, doctors and caretakers. As Loftus (2011: 225-226) says:

> "Much of the debate in the literature has been about which metaphors are closer to the 'truth'. In a sense, this debate is irrelevant, as metaphors cannot be true or false. What really matters in these debates is which metaphors are more useful and for whom – what works for patients? This return to the difference between medical science and medical practice. […] Whereas medical science, like all science, is concerned with the 'truth', medical practice is concerned with what works for patients."

However, the majority of the scholars that take part to the debate about the use of metaphors in medicine do not talk about the role of metaphors in general terms. They tend to give their opinion about specific clusters of metaphors – called conceptual metaphors or metaphor themes – which have been analysed on the basis of the potentially negative or positive effects they can produce on patients, relatives and caretakers. The idea of "conceptual metaphor" was introduced by Lakoff and Johnson in *Metaphors We Live By* (1980), but the variant "metaphor theme" is also used (Goatly, 2007). "Conceptual metaphor" and "metaphor theme" refer to specific patterns which are represented by the formula "X IS Y". That is, the target domain X, usually abstract, can be described making reference to the source domain Y. Each conceptual metaphor creates a pattern, in which different metaphorical expressions are included. For the sake of clarity, I will give an example based on one of the most famous conceptual metaphors identified by Lakoff and Johnson, LOVE IS A JOURNEY. In this conceptual metaphor, the abstract conceptual domain "LOVE" is understood in terms of the conceptual domain "JOURNEY". In addition, as Lakoff (1992: 6) says, "this unified way of conceptualizing love metaphorically is realized in many different linguistic expressions." Therefore, LOVE IS A JOURNEY can be represented as in Figure 2.1 below: LOVE IS A JOURNEY is the conceptual metaphor and the examples it contains are different realisations of the conceptual metaphor itself.

Figure 2.1: Representation of the conceptual metaphor LOVE IS A JOURNEY (taken from Lakoff and Johnson, 1992: 7-9)



In the following paragraphs, I will discuss the points of view of several scholars and practitioners, taking into consideration conceptual metaphors related to the human body, disease and pain.

2.1 Body-related conceptual metaphors

2.1.1 THE BODY IS A MACHINE

In this paragraph, I will discuss a conceptual metaphor that is very common in medicine. It is related to the semantic fields of machinery and engineering and compares the human body, parts of it or the patient himself/herself, to a machine or a technical device. To understand the widespread use of this conceptual metaphor in medicine, two examples will be given. The first is the conceptual metaphor "the heart is a pump", which is related to the semantic field of mechanics and is commonly used by physicians and also by teachers in schools. Therefore, it is something we are probably familiar with even though we are not physicians or we do not work in a hospital. The second example is the word "plumbing": it is an informal word used in medicine to refer to the urinary system and at the same time is associated to hydraulics, as plumbing is the system of pipes that distribute water in a building.

As Nesse claims[9], THE BODY IS A MACHINE conceptual metaphor dates back to the 16th century, when the French philosopher Descartes separated the mind from the body and said that the latter works like a machine. This metaphor was then used also by the Italian eclectic artist Leonardo da Vinci and the Flemish physician and anatomist Andreas Vesalius, and people began to think about the parts of the body as "fancy systems of levels, ropes and pulleys."[10] THE BODY IS A MACHINE conceptual metaphor then reached its peak in the 19th century, when great technological advances were made thanks to the Industrial Revolution. Nowadays, it is still very common, as we will see in this Chapter and also in Chapter 4. Some writers have underlined its usefulness. For instance, Pickering (1999: 363) says that THE BODY IS A MACHINE is a good metaphor, because "it enables us to speak of the functioning of specific organs". On the other hand, others have focused on its possible negative consequences. To give an example, Coulehan identifies three engineering metaphors: DISEASE IS A MALFUNCTION; PHYSICIAN

[9] https://evmed.asu.edu/blog/body-not-machine (last visited on 12/12/2016).
[10] Ibid.

IS AN ENGINEER; and PATIENT IS A MACHINE. He then stresses their inappropriateness, saying that "engineering metaphors […] tend to objectify and dehumanize the patient" (Coulehan 2003: 92).

The inadequacy of this conceptual metaphor has also been clearly underlined by Tajer (2012: 487), who says:

> "This is perhaps the least humanistic of the proposed views, where the body is considered as a machine requiring services and repairs […]. Its limitations and non-correspondences are obvious: it is dehumanizing, it is impossible to know all the patient's pieces for which we will surely find a replacement, we cannot disassemble and assemble it again, and much less declare complete destruction and replace him for a new patient, as a taxi […]."

Another author who reflects on the role of this conceptual metaphor is Loftus (2011), who is particularly interested in studying pain and its management. First of all, he distinguishes between two different types of pain: acute and chronic pain. Acute pain is an "intensely discomforting, distressful or agonizing sensation, associated with trauma or disease, with well-defined location, character, and timing"[11], while chronic pain is an "aching sensation that persists for more than a few months. It may or may not be associated with trauma or disease, and may persist after the initial injury has healed"[12]. Loftus (2011: 219) points out that THE BODY IS A MACHINE conceptual metaphor can work effectively when talking about acute pain:

> "Patients with toothache can have their pain 'fixed' by procedures such as fillings or extractions, and they can go away pain-free and happy. With a machine, it is always possible, in theory, to repair the damage, even if this means replacing parts."

However, the use of this metaphor becomes highly problematic in the context of chronic pain. This metaphor makes patients think that physical problems can always be solved. However, the truth is that chronic pain is sometimes not curable because, as we can see from the definition above, it does not depend on the presence of an injury. This metaphor thus becomes inadequate and also detrimental, because it can deceive patients and cause frustration:

[11] http://www.online-medical-dictionary.org/definitions-a/acute-pain.html (last visited on 12/12/2016)
[12] http://www.online-medical-dictionary.org/definitions-c/chronic-pain.html (last visited on 12/12/2016)

> "In addition, patients with chronic pain come to believe that the 'damage' they think must be causing their pain is continuing to do them more and more harm because that is what happens in machines that malfunction and are not repaired properly—the damage gets worse. Such patients can be easily drawn into the downward spiral of searching for a technical fix that they believe must exist and that they must have, going from one health professional to another in a desperate quest for a definitive cure. Such patients are not helped by the large number of health professionals who also accept the metaphor of the body as machine. This is why chronic pain can be so frustrating for health professionals as well as their patients. They are thinking and working with a metaphor that is simply inadequate." (Loftus, 2011: 220)

To conclude, I would like to mention Nesse's opinion[13]. According to Nesse, in the past the use of THE BODY IS A MACHINE conceptual metaphor had positive consequences. Considering the body as a system made up of smaller machinery encouraged scientists and physicians to adopt a reductionist attitude: they tried to understand something complex like the human body by studying its smaller components meticulously. Since understanding the functioning of the body as a whole is difficult, physicians can focus on its different systems and analyse them separately. From a reductionist perspective, each system can, in turn, be studied by separating the organs that are part of it, and each organ can be analysed in its smaller parts. However, Nesse thinks that this metaphor is not useful anymore, because the differences between the human body and a machine are too numerous and obvious. Figure 2.2, taken from Nesse's article[14], shows these numerous differences between machines and the human body.

[13] Randolph M. Nesse (4/02/2016). Available at: https://evmed.asu.edu/blog/body-not-machine (last visited on 13/12/2016).
[14] Ibid.

Figure 2.2: Differences between machines and the human body (taken from Nesse's article)

MACHINES	BODIES
Designed	Evolved
Engineers	Natural selection
For human purposes	To maximize reproduction
Blueprints	Genome
Ideal form	Variation intrinsic
Fresh starts possible	Fresh starts impossible
Little predation	Vulnerable to predation
Infection risks rare	Vulnerable to infection
Defenses usually not an issue	Costly defenses
Discrete parts	Overlapping parts
One function per part	Many functions per part
A few parts per function	Many parts per function
A few connections	Myriad tangled connections
Redundant parts perhaps	Resilience deeply embedded
Failure from broken parts	Failure from failing systems
Blueprint errors	Genetic mutations
Manufacturing defects	Developmental defects
No danger of excess replication	Cancer risk intrinsic
Wearing out	Repair selected for…or not

Nesse's position becomes extremely clear when he says that "the metaphor of body as a machine is an obstacle to progress" and that "we need to blow the metaphor away". However, he recognises the difficulty in replacing this metaphor with a better one, and talks about the possibility of avoiding comparisons when describing the human body. The only possibility to do this is using a sort of tautology: the body is a soma. Soma is a word which in biology means "body". Therefore, "the body is a soma" is actually a statement that cannot be denied but which at the same time does not add other information on the body. However, Nesse claims that this is the main point of the issue: the human body is so complex that it is almost impossible to compare it to something else. Metaphorical language should thus be avoided, and things should be evaluated for what they are. As suggested by Nesse:

> "Unless something better is at hand, criticizing the metaphor of the body as a machine is a waste of energy. An alternative metaphor would be ideal, but every metaphor for the body distorts reality […]. Instead of a metaphor, we must recognise the body as a soma shaped by selection. […]. If we can wrench ourselves from metaphor and see the body as an evolved soma, we can put aside the debates that arise from assuming that its parts have nice crisp boundaries and specific functions."[15]

[15] Ibid.

2.1.2 THE BODY IS A CONTAINER and THE BODY IS AN OBJECT

Another conceptual metaphor related to the human body is the orientational metaphor THE BODY IS A CONTAINER. The parallelism between the position of the human body and health and sickness was described by Virginia Woolf in her essay *On being ill* (2002, in Marshall, 2006). The concept "orientational metaphor" was introduced by Lakoff and Johnson (1980) to describe the position of the human body in the spatial dimension. As also Schnall (2013: 5) stresses, THE BODY IS A CONTAINER has to do with the spatial concepts "in" and "out": the skin is the boundary between what is inside and outside the human body. Even though Lakoff and Johnson (1980: 29) do not talk explicitly about the human body, they say:

> "We are physical beings, bounded and set off from the rest of the world by the surface of our skins, and we experience the rest of the world as outside us. Each of us is a container, with a bounding surface and an in-out orientation."

Hodgkin (1985: 1820) mentions this conceptual metaphor when he talks about the way in which diseases are perceived, and says that nowadays diseases are not considered processes but objects. The author claims that the logical deduction we can make from this belief is that "patients are naturally seen as containers for those objects." This association might represent a perfect example of objectification: comparing the human body to a material and tangible object such as a container could mean to dehumanise patients by taking away their vitality. With respect to dehumanization, Hodgkin (1985: 1820-1821) highlights the possible negative effects caused by this conceptual metaphor on patients: "To the extent that patients are seen as mere vessels for disease, they will also be assumed to be passive and less important than the disease itself."

However, as I will show in Chapter 4, this metaphor does not always turn patients into passive and inanimate human beings, but it often offers a more comforting and encouraging perspective on the patients' condition.

THE BODY IS AN OBJECT is a conceptual metaphor that can be seen as a more general variant of THE BODY IS A CONTAINER, because "object" is a hypernym of "container". THE BODY IS AN OBJECT is discussed by Goatly (2007). Even though the author does not explicitly identify this category, he reflects on the fact that the human

body is sometimes treated like an object. In particular, he talks about the organs, other body parts and the fluids that are "separated" from the body and that are subjected to commodification: terms like "blood bank", "organ trafficking" or "sperm donor" clearly represent some body parts that can be bought and sold. The commodification of body parts is another phenomenon that can increase the risk of dehumanization, but scholars wonder whether this dehumanizing process is encouraged only by physicians or not. For example, a study on the objectification of the human body was carried out by Seale et al. (2006). Talking about commodification, the authors say that:

> "An object becomes a commodity when it acquires a use-value and its then subject to commercial exchange (Marx, 1887)[16] but in the case of body parts a process of objectification or reification is required, in which it is first necessary mentally or physically to separate the materials from the body so that they may become objects."

Bioscience and biomedicine have been accused of perpetrating this devaluating and violating phenomenon, especially when new technologies to separate components of the human body were developed. However, according to Seale et al. (2006), a strong emphasis on the commodification of human bodily parts is also put by mass media, the "less evident protagonists". Indeed, journalists tend to deal with this issue with a sensationalist tone, by using rhetorical devices, such as the language of horror stories, the process of turning body parts into fetishes, the techniques of enumeration and cataloguing. This sensationalistic tone catches people's attention and produces strong emotions. For this reason, mass media language has been accused of increasing this phenomenon and mass media are sometimes considered the main "culprit" for the reification of the human body, even more so than science and medicine.

2.2 Disease-related conceptual metaphors

2.2.1 DISEASE IS AN ENEMY

Military metaphors are probably one of the most widely discussed metaphors in this debate. The reference to the semantic field of war is not a new phenomenon: for example,

[16] Marx, Karl. 1887. *Capital*. Moscow: Progress Publishers.

in the first half of the 17th century, the English poet John Donne talked about his illness in military terms, using words such as "siege", "enemies" and "munitions". Military metaphors became even more common in the 19th century, when the French chemist and biologist Pasteur discovered the existence of germs thanks to the microscope. These germs were frequently described as enemies or invaders that entered the human body and caused several illnesses. Today, military metaphors are common above all in cancer discourse, as Reisfield and Wilson (2004), McLean (2014) and Hauser and Schwarz (2015) stress. However, as we will see in Chapter 4, they are also used to describe other diseases.

The use of war metaphors is openly criticised by Sontag (1978). Even though Sontag opposed the use of metaphors of any kind, the author (1978: 63-64) drew particular attention to this specific semantic field when talking about cancer:

> "The controlling metaphors in descriptions of cancer are, in fact, drawn not from economics but from the language of warfare: every physician and every attentive patient is familiar with, if perhaps inured to this military terminology. Thus, cancer cells do not simply multiply; they are "invasive" […]. Cancer cells "colonize" from the original tumor to far sites in the body […]. Rarely are the body's "defences" vigorous enough to obliterate tumor that has established its own blood supply and consists of billions of destructive cells. […]. Treatment also has military flavour. Radiotherapy uses the metaphors of aerial warfare; patients are "bombarded" with toxic rays. And chemotherapy is chemical warfare, using poisons."

This idea is reinforced in *AIDS and Its Metaphors*. In the conclusion of her book, Sontag (1989: 94-95) devoted a final reflection on war metaphors, which clearly shows that the author had not changed her opinion on the topic.

> "But the effect of the military imagery on thinking about sickness and health is far from inconsequential. It overmobilizes, it overdescribes, and it powerfully contributes to the excommunicating and stigmatizing of the ill. No, it is not desirable for medicine, any more than for war, to be "total." Neither is the crisis created by AIDS a "total' anything. We are not being invaded. The body is not a battlefield. The ill are neither unavoidable casualties nor the enemy. We - medicine, society - are not authorized to fight back by any means whatever… About that metaphor, the military one, I would say, if I may paraphrase Lucretius: Give it back to the war-makers."

The most common consequences of these pervasive metaphors are, according to Sontag, isolation and shame. Treating cancer – but, generally speaking, also other

diseases – as an enemy "make(s) cancer not just a lethal disease but a shameful one" (1978: 57). People feel guilty about their condition and they start to think that they deserve cancer, which is considered as a punishment for something they have done.

However, Sontag's opinion is just the starting point, because many other scholars and practitioners have dealt with the role of war metaphors in their works. For example, Hodgkin (1985: 1820) talks about the danger associated with the conceptual metaphor MEDICINE IS WAR, arguing that it tends to turn doctors and diseases in the main protagonists, while patients are relegated to the background. The same idea is expressed by Tajer (2012: 487):

> "[…] Patients are not the real focus of medicine, just the battlefield between physicians and disease. Patients have a passive role, with the aggravating circumstance that as in any war one must assume reasonable losses."

The marginal role of patients has also been underlined by Fuks (2010: 60), who argues that in the medical narrative there is no space for the patient's voice. The core of the medical narrative is not the patient anymore, but doctors and diseases, and the patient's point of view is often considered unnecessary.

> "The loss of the first person story is emblematic of the transformation of the patient from author and owner of the narrative, whose very uniqueness served as a means of explicating the mysteries of illness, to a passive, generic, and often solitary observer of care."

An interesting piece of research on the consequences of the use of war metaphors in cancer discourse was conducted by Hauser and Schwarz (2015). In particular, they were interested in studying the way in which "bellicose cancer metaphors" can influence patients and their prevention intentions. To introduce the topic, the authors say that war metaphors were particularly useful in the 1970s, when military slogans were used to raise money to support cancer research. Then, they demonstrate that describing cancer as an enemy is not always perceived as an encouragement to fight the disease, and reflect on the possible negative unintended effects that these metaphors have on patients. When Hauser sums up the results of this research, he talks about the negative effects of war metaphors in patients that have not been diagnosed cancer yet:

> "When people label cancer as an enemy, preventative behaviors that involve limitation and restraints – such as eating less red meat and not smoking – get disregarded or dismissed because fighting

> involves little self-control. We conceptualize war as a situation in which we have no choice but to engage a hostile force that must be attacked in order to be stopped. Self-limitation is not part of that equation." [17]

That is, fighting is an activity which does not require self-control and reflection. However, the lack of self-control can badly affect patients, preventing them from adopting "anti-cancer" behaviours.

Furthermore, Hauser points out that these metaphors can have an even worse effect in patients who have already been diagnosed with cancer. Indeed, in this bellicose context, people who are losing their fight or have already died because of the disease can be portrayed as losers, who haven't fought hard enough to win their battle. Therefore, Hauser ends his reflection on war metaphors by saying that until new research demonstrate that these metaphors can be good, "it may be time to call back the cavalry, lay down our weapons and end our conceptual war on cancer." [18]

A less extreme and more balanced opinion is given by Semino et al. (2016). These authors discuss the decision of the National Health Service (NHS) to avoid references to the semantic field of war in cancer care, in favour of metaphors related to journey. Even though they agree that war metaphors can sometimes damage patients, they also underline that "metaphors do not work in the same way for everyone, and that even war-related metaphors can be motivating for some." (2016: 7) In another article, Semino et al. (2015) also discuss the role of war metaphors, identifying examples with different aims and effects. For instance, they distinguish between disempowering and empowering metaphors. The former place patients in a vulnerable position and describe them as passive human beings, who are subjected to the disease. The latter represent patients in an empowered position, as active and determined people who are not overwhelmed by their disease. The different function that every metaphor can have is, according to Semino et al. (2016), the reason why generalisation should be avoided: military metaphors cannot always be regarded as "harmful" to patients.

[17] https://www.theguardian.com/commentisfree/2015/mar/22/saying-youre-fighting-a-war-on-cancer-could-make-you-lose-it (last visited on 13/12/2016).
[18] Ibid.

2.2.2 DISEASE IS A JOURNEY

DISEASE IS A JOURNEY is another conceptual metaphor which has been widely discussed in relation to its effects on patients. It is often proposed as the most prominent alternative and the "positive" variant of DISEASE IS AN ENEMY, and many scholars focused on the positive effects of journey conceptual metaphors in contrast with the military ones.

Somebody's journey was identified as a target domain by Lakoff and Johnson (1980) and it was then related to the so called "source-path-goal" schema (or with the acronym SPG schema). Indeed, Johnson (1987: 113-114) points out that any journey can be schematized in this way: there is a starting point (or source), an end point (or goal) and a sequence of locations (the path) which connects the source and the goal. The journey conceptual metaphor was also studied by Turner (1998), Forceville (2016) and Kromhout and Forceville (2013), who applied this semantic field to educational practices (Turner) and videogames (Kromhout and Forceville). In particular, Forceville starts from Johnson's description of the source-path-goal schema and enriches it with other elements. For example, the traveller is the protagonist of the journey, and s/he uses a means of transportation to move from the source to the goal. Easy moving represents success, while difficult moving or obstacles represent failures. [19]

The semantic field of journey, which structures our understanding of trying to achieve goals, is also used in medicine and is often described as a metaphor with a positive connotation. This favourable attitude depends on the contrast between journey and war: without a shadow of a doubt, a journey is perceived as a more pleasant experience. For instance, Reisfield and Wilson (2004: 4026) argue that the journey metaphor, "quieter than the military metaphor", is usually regarded as more apt to describe the cancer experience:

> "The road may not be as long as one had hoped, and important destinations may be bypassed. But the journey metaphor does not countenance such concepts as winning, losing, and failing. Rather, there are only different roads to travel, various avenues to be explored, and, always there are exits. Physicians may be trusted and knowledgeable guides, accompanying the patient throughout the journey, one ultimately imbue them both with a vision of a deeper meaning in life."

[19] https://www.youtube.com/watch?v=MvocTKD5o5A (last visited on 13/12/2016).

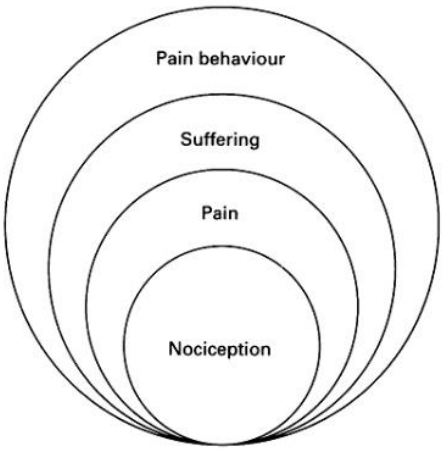
However, despite the common positive connotation given to the DISEASE IS A JOURNEY conceptual metaphor, Reisfield and Wilson (2004) clearly claim that every metaphor has its strength and weaknesses and has to be evaluated on the basis of the context and the patient that "receives" it.

The same idea is expressed by Semino et al. (2016), who analyse war metaphors hand in hand with journey metaphors. As argued above in the paragraph about war metaphors, Semino et al. point out that also with journey metaphor it is not possible to say a priori whether a metaphor is harmful or good for patients. Indeed, patients are sometimes described as travellers who have a full control on their journey. Furthermore, the journey is often regarded as a shared experience, where the traveller finds the solidarity of other people, who can become guides or simply companions. However, patients are sometimes described as travellers without control on their journey, which can become a terrible experience.

2.3 Pain-related conceptual metaphors

Pain is one of the basic human experiences and, as Plastina says, "it is unarguably the most common condition reported in medical care." (2016: 208) However, it is not completely correct to talk about pain as a monolithic entity, but it would rather be better to describe it as a complex phenomenon which includes different manifestations. The complexity of pain is underlined by Semino, who talks about "the variety of sensations conveyed by the English word *pain*" (2010: 205, emphasis in the original). Psychologist Melzack distinguishes between different types of pain and says that "the word 'pain', then, refers to an endless variety of qualities that are categorized under a single linguistic label" (1983: 41). The multidimensionality of pain is represented also by the onion skin model (Figure 2.3), elaborated by Loeser in the 1970s:

Figure 2.3: Loeser's onion skin model of pain (adapted from Loftus, 2011)



As we can see from this model, pain is not represented as a uniform entity, but it is described in terms of four different levels (or layers). The inner circle represents the beginning of the entire process: nociception is what starts and maintains the pain experience. In the second circle, there is the physical perception of pain: after a physical damage, a painful stimulus is perceived thanks to our nociceptors. The third circle is about suffering, the response generated in the brain after the physical threat. To conclude, the outer circle represents the way in which we behave after the threat.

Being pain a complex phenomenon, communicating painful sensations might not always be an easy and straightforward process. Indeed, Littlemore et al. (2013) argue that patients sometimes find it difficult to talk about their pain, above all when it does not have a visible manifestation. That is, they are not able to define or describe this abstract entity. Another obstacle to communication is the subjectivity of pain, because the same type of pain can be described in different ways by different patients. This can cause misunderstandings and prevent physicians from making the right diagnosis and giving the most appropriate treatment.

Even though labelling and "measuring" pain could be challenging for patients, it is an essential phase in healthcare. Medical signs, defined as objective and observable physical phenomena, are sometimes not enough to diagnose a medical condition. In addition, medical imaging tests – such as X-rays, Magnetic Resonance Imaging, ultrasound imaging – are often not useful to identify the type of pain that affects patients. Therefore, language becomes the only way to communicate and describe pain, and the

description of subjective symptoms and painful sensations becomes fundamental to identify the right illness and the best treatment.

To help patients to describe their subjective sensations, an index to assess pain was created. This index is called The McGill Pain Questionnaire, sometimes McGill pain index, or simply MPQ (see Appendix 1). It was developed by Melzack and Torgenson, who were inspired by a study carried out by Dallenbach in 1939. Dallenbach identified 44 terms that were used by patients to describe pain and, thanks to the contribution of Melzack and Torgenson, other words were added to this list, which now contains 102 words. Furthermore, in this index three classes have been identified:

- sensory qualities, related to time, space, pressure and other properties;
- affective qualities, involving feelings such as fear or anger;
- intensity, which goes from mild to excruciating pain.

The most interesting aspect is that this list contains many metaphorical expressions. The use of metaphorical language by patients is highlighted by Semino (2010) who, making reference to this index, says that some types of pain – such as the non-nociceptive pain, in which pain receptors are not involved – are described through expressions which are used metaphorically. That is, when patients are not able to talk about their painful sensations, they compare them to other semantic fields. To give an example, Semino reports that patients talk about "sharp pain", even if there is not a physical damage caused by a sharp object, like a knife.

The main source domain identified by Semino is CAUSES OF PHYSICAL DAMAGE, a category that can be divided into different subcategories:

- damage via insertion of pointed objects: stinging or penetrating pain;
- damage via the application of sharp objects: sharp or piercing pain;
- damage via pulling/tearing: wrenching and squeezing pain;
- damage via the application of pressure/weight: pinching and tight pain.

Furthermore, some pain descriptors also refer to high or low temperatures, such as burning or freezing pain, movements, such as beating and shooting pain, and cruel behaviours, such as killing or punishing pain.

Nowadays, many metaphors are used to describe painful sensations. As regards their appropriateness, Littlemore et al. (2013) believe that metaphorical expressions can facilitate diagnosis and establish a better communication between patients and physicians.

On the other hand, some potentially harmful expressions related to pain have been identified. For example, Littlemore et al. (2013) deal with the conceptual metaphors PAIN IS A CAPTOR and PAIN IS A PRISON, which describe patients as prisoners at the mercy of pain.

Another metaphor used to describe pain has been drawn from the skin onion model of pain. The main logical deduction that has been made starting from this model is that pain is a private and personal entity. Indeed, the three internal layers represented in the model cannot be measured objectively. As Loftus (2011: 221) argues: "We tend to think of pain as a discrete entity, completely internal to the sufferer and only available to the sufferer, i.e. PAIN IS A PRIVATE OBJECT." However, Wittgenstein (1958, in Loftus, 2011: 221) underlines the weakness of this metaphor. Indeed, it is essential to talk about pain without making reference to our inner dimension. To show that PAIN IS A PRIVATE OBJECT is a risky metaphor, Wittgenstein conducted an experiment known as "beetle in the box" experiment, which is explained in one of his aphorisms:

> "If I say of myself that it is only from my own case that I know what the word "pain" means - must I not say the same of other people too? And how can I generalize the *one* case so irresponsibly? Now someone tells me that *he* knows what pain is only from his own case! -Suppose everyone had a box with something in it: we call it a "beetle". No one can look into anyone else's box, and everyone says he knows what a beetle is only by looking at *his* beetle. -Here it would be quite possible for everyone to have something different in his box. One might even imagine such a thing constantly changing. -But suppose the word "beetle" had a use in these people's language? -If so it would not be used as the name of a thing. The thing in the box has no place in the language-game at all; not even as a *something:* for the box might even be empty."[20]

If we replace the beetle of the aphorism with pain and we compare the box to our mind, it becomes clear that Wittgenstein is trying to say that we cannot learn what pain is only by making reference to our private experiences, because these experiences could be different one from the other. As Loftus (2011: 221) says, "We must learn how to use words, like pain, without comparing inner experiences."

A deeper analysis on pain is conducted by Loftus (2011: 220) who, talking about chronic pain, says:

[20] http://web.stanford.edu/~paulsko/Wittgenstein293.html (las visited on 21/12/2016).

> "Other related metaphors shifts could be seen as a move away from PAIN IS A MECHANICAL ALARM where pain is seen as something that must be dealt with and cannot be ignored to PAIN IS A NUISANCE. In the latter metaphor, pain is something that is irritating but that can be pushed firmly into the background."

As we can see, the conceptual metaphors in the extract above convey completely different messages. On the one hand PAIN IS A MECHANICAL ALARM encourages physicians to treat pain as soon as possible, without downplaying it. On the other hand, PAIN IS A NUISANCE describes pain as something which is not so important or overwhelming. The second metaphor could help some patients to avoid focusing too much on their pain, but could have harmful effect on other patients, who could feel neglected if their pain is compared to a "nuisance". Loftus (2011: 223) also identifies the conceptual metaphor PAIN IS A COMPUTATION, which, according to him, offers a detached view of pain and allows patients to see their physical condition objectively:

> "In this view, *my* pain is a distinctive mental process that does not belong to me but to the machine/computer that is the mind/brain, and the mind/brain is just another bodily organ that is distinct from *me*." (emphasis in the original)

Loftus does not oppose the use of metaphors in pain discourse, but he claims that new metaphors should be introduced to talk about pain in a more effective way. Actually, this is something that is already happening, because the traditional metaphor PAIN IS A SYMPTOM is slowly being replaced by the a new one: PAIN IS A DISEASE. This change of perspective is, according to Loftus, the key for a better comprehension of pain. As a matter of fact, Western medicine tends to cure the cause, that is the disease, and not the effects, that is, symptoms (including pain). However, if physicians change perspective and start to see pain as a real disease and not as a "mere effect", more attention will be placed on pain and pain management, with considerable positive effects on patients.

As I have argued above, some scholars tend to classify metaphorical expressions as either harmful or appropriate on the basis of the conceptual metaphor they belong to. However, as some scholars have stressed, it would be better to avoid generalisations and reflect on the real effects of metaphors on patients, independently from the category they belong to. Therefore, in order to understand the role of metaphorical expressions, it is not useful to focus on the conceptual metaphor they belong to but on their function, analysing

every slight shade of meaning. Clear examples of this phenomenon are provided by Semino et al. (2016), where they argue that not all military metaphors are negative by default and not all journey metaphors necessarily convey a positive meaning to patients.

CHAPTER 3: The data: A Corpus of British and American Medical Condition Leaflets and medical information for patients

In this Chapter, theoretical notions about corpus linguistics will be given. Furthermore, I will describe the corpus I analysed and the software I used to carry out the qualitative and quantitative analyses.

3.1 An introduction to corpus linguistics

Corpus linguistics can be defined as a set of methods employed to study language both qualitatively and quantitatively. "Methodology" is generally considered the most appropriate term to define corpus linguistics. For instance, Hunston (2006: 244) says that "corpus linguistics is essentially a methodology or set of methodologies, rather than a theory of language description." The term methodology is also used by Gries (2009: 2), who, like Hunston, stresses that corpus linguistics is more a practical-oriented rather than a theoretical-oriented methodology:

> "[…] There are different perspectives one can take. One is that many corpus linguists would perhaps even say that for them, linguistic theory is not of the same prime importance as it is in, for example, generative approaches. Correspondingly, I think it's fair to say that a large body of corpus-linguistic work has a rather descriptive or applied focus and does actually not involve much linguistic theory."

Data used to study linguistic phenomena can be retrieved from collections of texts, called corpora. In these corpora, only naturally occurring expressions can be found. This means that the texts that are used to carry out linguistic analyses cannot be "made-up" examples, invented and assembled by linguists. Instead, they are authentic texts that reflect real uses of language. Therefore, corpora can be considered the basic resource of corpus linguistic analysis. According to Kennedy (1998: 13), one of the first important corpus-based research was carried out in the 18th century, when linguists used the Bible as a corpus to study typical collocations of language. Furthermore, this author underlines that pre-electronic corpora were versatile, because they were used in five different fields of scholarship: Biblical and literary studies, lexicography, dialect studies, grammatical studies and language education. The use of pre-electronic corpora is also discussed by

Rissanen (2008), who affirms that early on in linguistic studies linguists used different sources to study language. Not only the Bible, but also dictionaries and grammars were used to create lists of occurrences – now called concordances – that included the words used and information on their frequency.

With the new technological advancements and the advent of the computer, in the 20th century electronic corpora were created. These corpora were indeed stored in electronic databases which could be accessed and analysed by means of a computer. The invention of electronically stored corpora is considered the starting point of corpus-based research, and took place in the 1960s. The possibility to collect and process data using computers soon proved to be a successful innovation. Indeed, even though the analysis based on pre-electronic corpora made a significant contribution in the past, it also had some weaknesses. In particular, it took a long time to analyse text by text manually; furthermore, it was not easy to check the results obtained, above all when the number of texts analysed was considerable. On the other hand, modern corpus linguistics enables linguists to carry out quick and exhaustive research, which can be replicated if results have to be checked.

Nowadays, electronic corpora are analysed thanks to the use of specific software. Some of them are called concordancers. As the name suggests, they are useful to display wordlists and concordances on the computer screen, which are then analysed by linguists. Another type of software for corpus-based analysis are the so called annotation tools, which enable linguists to analyse texts on the basis of the tags "attached" to words or portions of texts.

As the time went by, different types of corpora have been created to meet the needs of linguists. A first distinction can be drawn between general and specialized corpora. The former are used for unspecified linguistic analyses, that is, when linguists want to study general topics related to grammar, vocabulary or discourse structure of the language. General corpora are usually balanced, because the texts included are taken from different genres, deal with different topics and represent both written and spoken language. On the other hand, the latter are designed to work on specific research projects. This second category includes, for example, dialect and regional corpora, non-standard corpora and learner corpora.

The second distinction is related to the two main media – or vehicles – of communication. Written corpora include texts that were elaborated for written communication, while spoken corpora, sometimes called speech corpora, include the transcriptions of audio files.

Corpora can also be classified on the basis of the "portrait" that they offer of language. That is, they can represent "a total population of text" (Kennedy, 1998: 20) or only a part of it. I will provide an example for the sake of clarity. If we want to analyse the editions of a given newspaper published in the 20th century, we have to choose to either create or a full-text corpus or a sample-text corpus. In the first case, all the editions of the newspaper should be included in the corpus, which becomes the complete entity we want to study. In the second case, only some of the editions of this newspaper might suffice to create the corpus. Therefore, the corpus might not be the whole entity that we want to study, but just a representative sample of it.

Another distinction can be made between static or dynamic corpora. Static corpora are, as the word "static" suggests, complete, and cannot grow in size. On the other hand, dynamic corpora – also called monitor corpora – expand over time, and are used to monitor how language gradually changes. An example of a static corpus is the collection of works by a given writer who is not alive anymore. For example, if all the works written by Virginia Woolf were grouped to create a collection of texts, the result would be a static corpus, which could not be widen by adding other texts. On the other hand, an example of a dynamic corpus is the Corpus of Contemporary American English (COCA): this collection of American contemporary texts is constantly updated and new texts are regularly included[21].

The last distinction is related to the temporal dimension. Synchronic corpora are those used to analyse language with reference to a specific historical period. That is, when linguists study language synchronically, they do not take into consideration what happened before or after the historical period they have chosen. On the other hand, diachronic corpora are used when linguists are interested in analysing how language changed over a period of time. These corpora usually include texts that cover and

[21] http://webcache.googleusercontent.com/search?q=cache:http://corpus.byu.edu/coca/compare-boe.asp&gws_rd=cr&ei=oCCHWO_QLumE6QTckIeACQ (last visited on 24/01/2017).

represent a large period, thus allowing scholars to focus on the way in which a given language evolved throughout history.

3.2 Material analysed and software used

In order to carry out my qualitative and quantitative linguistic analyses, I have collected a representative corpus. The texts were chosen from the websites of British and American national associations and of non-profit organisations that aim at raising awareness of specific diseases and obtaining funding. In the following paragraphs, I will describe the materials I have included in my corpus in detail, focusing on their content and also on the type of language used. Moreover, I will briefly introduce the software that I used to collect the data and process it.

3.2.1 The content of the corpus

The overall size of the corpus which I studied in this thesis is 620,608 words. The whole corpus can be broken down in smaller sub-corpora, as Table 3.1 shows:

Table 3.1: Word Types and Word Tokens contained in the sub-corpora representing the diseases studied

	UK leaflets		US leaflets	
	Word Types	Word Tokens	Word Types	Word Tokens
Multiple Sclerosis	8,357	186,097	7,168	99,401
Diabetes	6,520	112,093	2,216	12,815
HIV/AIDS	6,673	146,612	2,046	17,683
Common diseases	1,742	14,094	2,355	31,813

As can be seen from Table 3.1, the sub-corpora related to the four diseases studied are of different sizes. This is the reason why, as explained later on in this Chapter, quantitative analyses were carried out by comparing percentages, that is standardized and comparable data, rather than raw frequencies.

As said above, my corpus contains Medical Condition Leaflets as well as other information for patients which have been taken from British and American websites.

Medical Condition Leaflets are leaflets that provide information on specific diseases, focusing on their causes, symptoms and treatments. When the websites made Medical Condition Leaflets available in the form of PDF files, I downloaded these files and included them in the corpus. By contrast, when ready-made leaflets were not available online, I simply copied and pasted the sections of the British and American websites that give information on the medical conditions I was interested in. For example, in the website of ADA, the American Diabetes Association (http://www.diabetes.org/), no downloadable Medical Condition Leaflets were available. Therefore, I created the materials for my corpus by taking the information contained in the sections "Are You At Risk?", "Diabetes Basics" and "Living with Diabetes", which deal with the same topics that can be found in Medical Condition Leaflets.

I have decided to create a heterogeneous corpus, focusing on diseases with different causes and treatments. In the first three paragraphs of Chapter 4, I will deal with three chronic conditions: Multiple Sclerosis (MS), diabetes and Human Immunodeficiency Virus (HIV). In the fourth paragraph, I will focus on less serious medical conditions, such as common cold, seasonal influenza, sore throat and respiratory tract and ear infections. To conclude, I will devote a paragraph to pain and pain management. In this part I will analyse the metaphorical expressions used to refer to painful sensations in the medical conditions mentioned above.

As I said above, the topics of the corpus are numerous: apart from a general introduction to the disease taken into account, a description of its etiology, symptoms, treatments and possible complications is given. Not only is strictly medical information provided, but in some leaflets also personal experiences of patients are presented, in order to give a comprehensive overview of a given disease.

3.2.2 Medicine between specialized texts and popularization

As regards the type of language used in the materials included in my corpus, it can be defined as a hybrid of specialized language and language for laypeople. As I have argued in Chapter 1, medical language is considered a specialized language, with some peculiar characteristics and some specific rules. However, the medical materials I have analysed are different from the scientific specialized language of medicine.

As Gotti (2011) argues, a fully specialized text differs from a popularized text for several reasons. The main criteria to distinguish a fully specialized text from a popularized text is to take into consideration the audience the text is addressed to. Indeed, fully specialized texts are addressed to other specialists, who are familiar with the topic and the terminology used. On the other hand, popularized texts are addressed to non-specialists. Gotti (2011: 179) differentiates between two different types of popularization: that for didactic and that for information purposes. The first category is related to teaching and aims to provide students with the knowledge and notions expected among scholars in a specific field. Technical manuals and undergraduate books are examples of popularized texts for didactic purposes. The second category is addressed to a wide public without specialist knowledge and aims to inform and extend the readers' (or listeners') knowledge.

Another aspect that has to be taken into consideration is the type of information given to the readers. In a fully specialized text, specialists discuss new scientific knowledge using technical terminology. On the other hand, only information already known by experts is introduced and explained in popularized texts.

When Gotti introduces the term "popularized texts", he defines them "a kind of redrafting" (2011: 180) or a translation of specialized texts. Indeed, in popularization the content of specialized texts is "translated" and adapted to the knowledge of the lay public. To make the text understandable, two main strategies are used. First of all, technical terms are often replaced by common words. If technical terms are included, they are usually followed by their definition, which can be put between brackets or commas. Secondly, similes and metaphors are often used to "establish a direct link with the public's general knowledge, which makes the content easier to identify" (2011: 181). These rhetorical figures are very common in the Medical Condition Leaflets that I have analysed. Indeed, even though in these leaflets a large number of technical medical terms can be found (for some examples see Paragraph 1.2.2), professionals try to make medical information accessible to laypeople by making reference to everyday experiences.

3.2.3 The software used

To carry out my research, I used two different tools for linguistic analysis: AntConc and UAM Corpus Tool.

AntConc is a corpus analysis toolkit for concordance and text analysis, designed by Professor Laurence Anthony[22]. This software turns electronic texts – also called e-texts – into databases that can be analysed from a linguistic point of view. In particular, I used the following Tool Tabs of this software:

- Concordance: it was useful to create concordances, which are lists of lines containing a given search term;
- File View: it allowed me to analyse search terms in a wider context;
- Collocates: I used this tool to see if a given search term was usually "combined" with other terms;
- Word List: it was useful to study the frequency of words in my corpus.

The other software I used is UAM Corpus Tool[23]. It is a corpus annotation tool developed by Michael O'Donnell and it can be used both for corpus analysis and annotation. Software like UAM Corpus Tool enables linguists to study a corpus of texts by tagging (that is, assigning specific labels) words or portions of texts. To collect data, I used the following functions of UAM Corpus Tool:

- Search: it was useful to display, on the basis of the tagging process, all the portions of texts which were used metaphorically;
- Statistics: it was useful to obtain quantitative data.

Both these tools only supported the txt format. Therefore, before starting the analysis, I converted all the files into this format, to make them machine-readable. In the next paragraph, I will explain in detail how I used AntConc and UAM Corpus Tool in my analysis, also providing examples taken from my research.

3.3 Method

3.3.1 Qualitative analysis

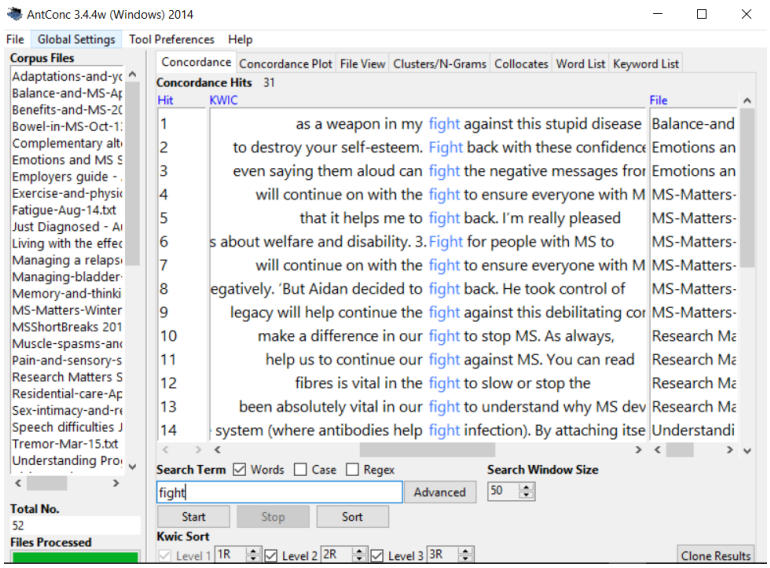
The qualitative analysis has been carried out in two different stages. In the preliminary stage, I used AntConc – and in particular, the KeyWords In Context format – to explore my corpus. This Concordance Tool, which was useful to understand how words were used in my corpus, allowed me to identify some metaphors and similes. Basically, in the

[22] http://www.laurenceanthony.net/software.html (last visited on 23/01/2017).
[23] http://www.corpustool.com/ (last visited on 23/01/2017).

designated bar I typed some keywords – called "search terms" – and then I analysed the results obtained. For example, when I wanted to identify similes, I wrote the prepositions "like" or "as", which usually introduce similes, and then I analysed the concordances containing these keywords. Looking for metaphors, the real focus of my analysis, was more challenging, because these rhetorical figures are not introduced by prepositions. Therefore, I focused on different semantic fields, using some keywords to identify metaphorical expressions. For example, to explore the semantic field of war, I typed war-related words in the bar. The software provided me with a specific number concordances which I then analysed to distinguish between literal or metaphorical uses of language.

For the sake of clarity, I will give an example. After uploading the material about Multiple Sclerosis into AntConc, I typed the word "fight", which is clearly related to the semantic fields of violence and war, in the specific bar. As Figure 3.1 shows, this allowed me to identify 31 occurrences containing this word.

Figure 3.1: Concordance output about the word *fight* from AntConc 3.4.4w



To obtain more precise results, I also used the "Sort function", which rearranged the concordance lines at three different levels (L1, L2, L3). By changing these levels, the words on the left or on the right of the search term "fight" were arranged in different ways. Thanks to this function, I was able to distinguish when "fight" was used as a noun or as a verb, and to identify common recurrent patterns. I also used the Collocates and Word List tools to see if search terms were usually combined with other words, and to analyse the frequency of words in the corpus.

After this preliminary analysis, I used the other software, UAM Corpus Tool, to study my corpus more in depth. First of all, I created a project uploading text files in the software. Then, I elaborated an annotation scheme, which helped me to classify the metaphorical expressions identified. In this annotation scheme, made up of different layers, I included all the features and variables I wanted to study; every metaphorical expression was "tagged" by selecting the variable that better described the metaphorical expression itself.

The layers included in the scheme are represented in the Figure 3.2 below.

Figure 3.2: Layers of the Annotation Scheme in UAM Corpus Tool 3.3f

Metaphorical expression

FUNCTION
- strengthening
- softening/minimizing
- encouragement
- explanation
- naming
- pain description
- colouring

SEMANTIC FIELDS

- war	- food	- other
- sport	- house	
- clothes	- human beings	
- engineering/applied sciences	- death	
- unpredictability	- part of a whole	
- journey/movement	- horror story	
- barrier/obstacle	- spatial orientation	
- mystery/detective story	- music	
- game	- animals	
- burden	- objects	
- cause of physical pain	- weather	
- intense emotions	- colour	

CREATIVITY
- conventional
- unconventional

DISEASE
- Multiple Sclerosis
- Diabetes
- HIV and AIDS
- Common diseases

COUNTRY
- BrE
- AmE

USED BY
- professionals
- patients

The labels in capital letters are the features that I have studied. During the tagging process, each metaphorical expression was associated with only one of the words listed in each "section" of the graphic above.

The first group includes the different functions of metaphorical expressions. What I did was trying to understand which role metaphors had in the context in which they were used.

- Strengthening: this function describes metaphors that are used to represent the disease as a strong entity;
- Softening/minimizing: this function describes metaphors that are used to represent the disease as a less dangerous entity. Sometimes, to downplay the seriousness of a disease, irony can be used;
- Encouragement: this function describes metaphors that are used to encourage patients to fight against the illness;
- Explanation: this function describes metaphors that are used to explain how a disease develops or how our body works;
- Naming: this function describes metaphors that are used to refer to parts of the body;
- Pain description: this function describes metaphors that are used by patients or professionals to refer to the physical and mental sensations associated with specific medical conditions:
- Colouring: this function describes metaphors that are used to make texts more interesting, vivid and engaging. The label used to refer to this function is inspired by the work by Philip (2011).

As regards the semantic fields explored, I focused on 24 semantic fields. Some of the most common semantic fields are: war, sport, unpredictability, cause of physical pain. However, as we will see in Chapter 4, the semantic fields taken into consideration are not equally distributed among the diseases analysed.

The metaphorical expressions evaluated have also been classified according to their level of creativity. Conventional metaphors are those that are commonly used in language. They are not new or original, and it is easier to understand their meaning. Apart from metaphors describing diseases, this category also includes terms which refer to parts of

the body. For example, "eardrum" is the name of a part of the ear that allows us to hear sounds and voices. It is connected with the semantic field of music, because the way in which it works is usually described by comparing it to a drum.

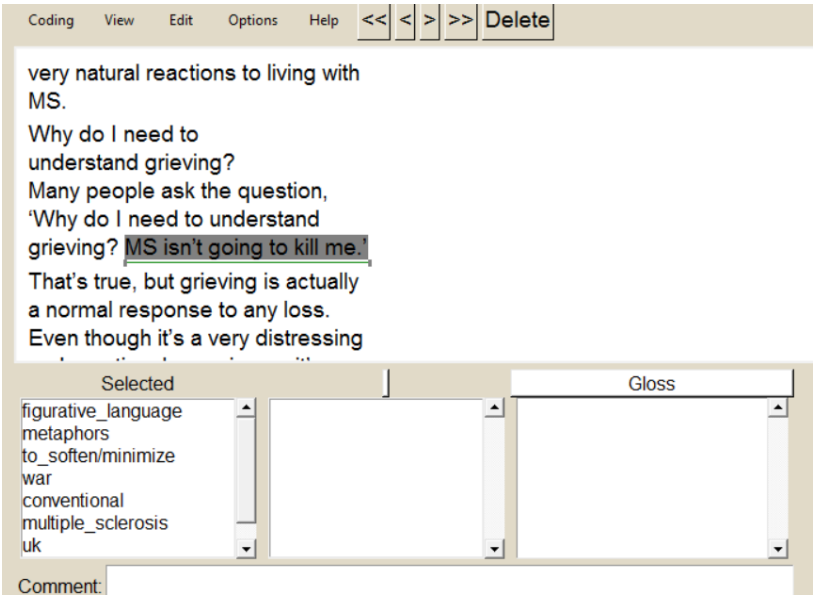
On the other hand, unconventional metaphors are the result of creative use of language, usually by patients rather than by professionals. To evaluate the degree of conventionality, I looked for the metaphors identified in my corpus in two corpora, the British National Corpus (BNC)[24] and the Corpus Of Contemporary American English (COCA)[25]. Furthermore, I also checked entry words in the online versions of the Longman Dictionary of Contemporary English[26] and the MacMillan Dictionary[27], to look for fixed idiomatic expressions that are used metaphorically.

The fourth layer includes all the names of the diseases I wanted to study, while the fifth layer was useful to distinguish between the British and American English material. To conclude, the sixth layer was useful to identify the sender, that is, the person who used the metaphorical expression analysed.

Therefore, after elaborating this annotation scheme, the most important part of my analysis started: I manually tagged all the metaphorical expressions that I found in the corpus, using the scheme above. After selecting the segment of the text that I was interested in, I assigned the variables of my annotation scheme to each segment, by double clicking the most appropriate choice in the box in the middle of the computer screen. After this, in the box on the left a list including all the selected features appeared. In Figure 3.3, an example of tagged metaphorical expression is represented:

[24] http://corpus.byu.edu/bnc/ (last visited on 23/01/2017).
[25] http://corpus.byu.edu/coca/ (last visited on 23/01/2017).
[26] http://www.ldoceonline.com/ (last visited on 16/01/2017).
[27] http://www.macmillandictionary.com/ (last visited on 16/01/2017).

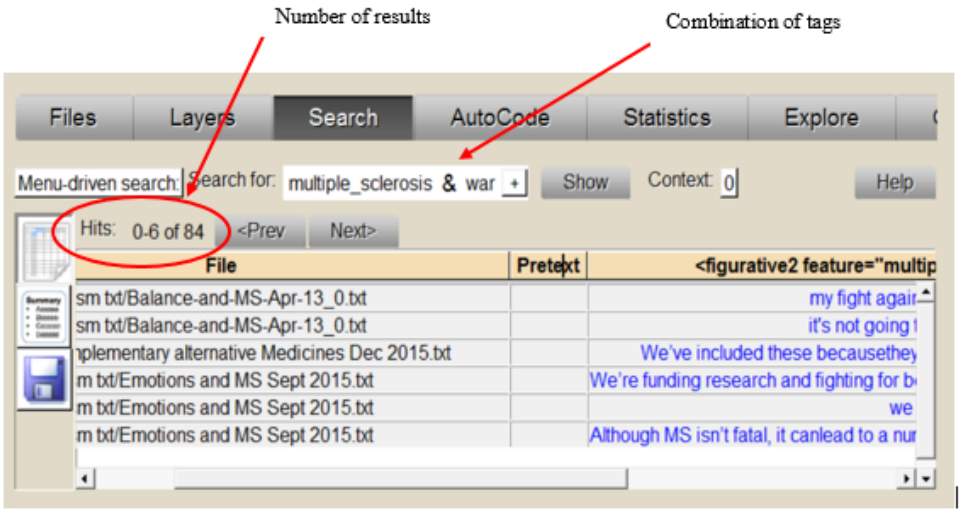
Figure 3.3: Screenshot of the annotation process from UAM Corpus Tool 3.3f



The green highlighted portion of the text is the metaphorical expressions I analysed; on the left, the box "Selected" contains all the variables I assigned to that expression. Accordingly, the highlighted metaphor is used to soften the seriousness of the disease, belongs to the semantic field of war, and is a conventional metaphor related to Multiple Sclerosis. Furthermore, the expression was identified in a British English text and is used by a patient.

After tagging all the metaphorical expressions that I found out in my corpus, I used the function "Search" of UAM Corpus Tool to carry on with my analysis. Thanks to this function, I was able to study the metaphorical expressions tagged by grouping them on the basis of the associated features. For example, the combination of the tags "multiple_sclerosis" and "war" produced a list of 84 results, as can be seen in Figure 3.4:

Figure 3.4: Screenshot of the "Search" function from UAM Corpus Tool 3.3



These lists allowed me to organize my analysis in a more clear and straightforward way, identifying similarities or differences related to the variables included in the Annotation Scheme.

3.3.2 Quantitative analysis

As regards the quantitative analysis, UAM Corpus Tool was extremely useful because it provided me with quantitative data elaborated from the tagging process. Indeed, a specific function of this software, called "Statistics", can be used to obtain quantitative information that describes the distribution of the variables I wanted to study in my corpus.

Quantitative data was collected taking into consideration each medical condition separately. Basically, I selected the tags related to each medical condition studied, and the software elaborated a chart for each disease, with percentages related to each parameter studied. These quantitative results will be represented through histograms and discussed in Chapter 5.

CHAPTER 4: Qualitative analysis of the Corpus

In this Chapter, the most interesting metaphors I identified in my corpus will be discussed. I will focus on different aspects, such as their functions and the semantic fields they are related to. The four diseases taken into consideration will be analysed separately and they will be described making reference to different conceptual metaphors.

4.1 Multiple Sclerosis

The first disease I have taken into consideration is Multiple Sclerosis, also known with the acronym MS. It is:

> "an autoimmune disorder mainly affecting young adults and characterised by *destruction* of myelin in the central nervous system. Pathologic findings include multiple sharply demarcated areas of demyelination throughout the white matter of the central nervous system. […] The usual pattern is one of recurrent *attacks* followed by partial recovery, but acute fulminating and chronic progressive forms also occur."[28]

The metaphors and similes analysed in the following paragraphs are all taken from the Medical Condition Leaflets that I downloaded from the websites of the MS Society, the UK's biggest Multiple Sclerosis charity (https://www.mssociety.org.uk/) and the National Multiple Sclerosis Society, an American non-profit organisation (http://www.nationalmssociety.org/).

4.1.1 MS IS AN ENEMY

As can be seen in the definition given by the Online Medical Dictionary, MS is often described with terms belonging to the semantic field of war. The use of military terms in the language of medicine is not a new phenomenon, as seen in Chapter 2. Nowadays, war metaphors are particularly common in cancer discourse, probably because cancer is often regarded as the disease of the 21st century, and many writers deal with this topic in their works. For example, Camus (2009) identifies some metaphors belonging to the conceptual metaphor CANCER IS WAR. In another article, Hauser and Schwarz (2015) discuss the role of war metaphors in cancer discourse. They argue that these metaphors,

[28] http://www.online-medical-dictionary.org/definitions-m/multiple-sclerosis.html (last visited on 26/11/2016).

whose main function would be to encourage patients to fight this disease, may have negative effects on people's understanding of cancer. The American writer Susan Sontag, who beat cancer twice, devoted an entire essay to the use of military metaphors in medicine, starting from cancer and tuberculosis and then focusing on AIDS. In her critical essay *Illness as metaphor* (1978), Sontag talks about the discriminatory and stigmatizing effect of military metaphors on patients. Military terminology is also very common in an interview published in 1993 by the Italian newspaper *La Stampa*, where the Italian journalist and writer Oriana Fallaci talks openly about her cancer. In the following extract, taken from Wise et al. (2013: 11), the translation of her answer is given:

> "After the surgical operation I asked doctors to see what they had taken from my body. The cancer looked like a small, pretty and innocuous marble ball. After a few days, I examined the cancer under the microscope, and I realized what its reproduction was capable to do. I understood that I had an enemy inside me: an alien that invaded my body to destroy it. Now, we have a relation of war: I want to kill 'him,' 'he' wants to kill me."

In my study, I have found a large number of war metaphors in the leaflets about MS. Some of them are direct and explicit, while others are more elusive. Some of these metaphors encourage patients to fight this chronic disease, offering moral support and strength to overcome difficulties. One of these metaphors is the one that I have found in an American leaflet, which deals with the emotions experienced by people affected by this disease:

> *By making MS the "common enemy", family members can focus their frustrations on the disease rather than each other, and work together to figure how best to handle the changes in their lives. (AmE)*

Military verbs play an important role in the description of MS as an enemy. The following examples contain the verbs "to attack", "to fight", "to battle", "to damage" and "to beat":

> *Even when you're not having a relapse, MS may carry on attacking your body, leading to nerve damage that can't be put right. (AmE)*
>
> *Multiple sclerosis (or MS) is a chronic, often disabling disease that attacks the central nervous system (brain and spinal cord). (AmE)*
>
> *We're funding research and fighting for better treatment and care to help people with MS take control of their lives. With your support, we will beat MS. (BrE)*

'My mum demonstrated amazing courage while battling progressive MS for over 15 years, never losing her sense of humour,' says Sandy. (BrE)

Many people respond with a determination that they are going to "beat this disease." (AmE)

Wanting to "beat the disease" is certainly understandable, but it may not be the most realistic or productive goal. (AmE)

MS can damage the protective layer (called 'myelin') around the fibres of the upper motor neurones. (BrE)

War metaphors are also used to talk about the symptoms of this disease, which are numerous, unpredictable and often very debilitating. In some metaphors about these symptoms, the verbs seen in the examples above can be found. However, the majority of symptoms are described with the verb "to combat":

Finding ways to minimise your pain might also have benefits for beating stress and anxiety. (BrE)

Today, FES is used by many people with MS to combat foot drop, and we won't stop our support there. (BrE)

OTs are specialists in energy conservation to combat fatigue and can teach techniques for dressing, grooming, eating and driving. (AmE)

If your doctor prescribes these drugs, it is not necessarily because they think you have these other conditions. It is because they can help to combat certain kinds of pain. (BrE)

Cognitive rehabilitation therapy: this is designed to help combat the problems with memory, attention span or concentration that occur in between 50 to 60% of people with MS. (BrE)

To complete the analysis of the conceptual metaphor MS IS AN ENEMY, I would like to mention other four examples:

I see the stick as a weapon in my fight against this stupid disease […] (BrE)

I really believe that keeping active is an important weapon against MS. Whether it's running or gentle exercise and stretching I firmly believe that it helps me to fight back. […] (BrE)

As MS activists, we are on the frontline, moving together and speaking with one clear voice to create legislative and regulatory changes that benefit people living with MS and their families. (AmE)

The Society wants to be an ally, helping people to learn for themselves and to find trustworthy help — from urologists, psychologists, and other healthcare specialists to self-help groups and educational programs. (AmE)

Metaphorically speaking, in the battle against MS, patients/warriors have to use different types of weapons, both tangible (as the stick) and intangible (keeping active).

However, patients are not alone in this battle: activists, charity societies and doctors are fighting this war with them.

4.1.2 MS IS A ROLLER COASTER

One of the main characteristics of this chronic disease is its fluctuating development. In other words, not only lay people but also specialists cannot predict the evolution of MS. As the following examples show, some of the most common words used to describe MS are "unpredictability" and "unpredictable":

> *MS is an unpredictable condition, and no two people will be affected in the same way. (BrE)*
>
> *Trying to predict MS symptoms can be like trying to predict the weather. (BrE)*
>
> *Living with this unpredictability is part of living with MS. (AmE)*

This idea of unpredictability is conveyed in two different ways. On the one hand, experts, such as doctors and nurses, tend to use technical terms, related to the relapse-remitting pattern of this disease. On the other hand, they sometimes try to shorten the distance between themselves and their patients, and to explain the development of this disease by making reference to concepts that lay people can easily understand, such as "ups and downs" and the variant "highs and lows":

> *For some people, MS is characterised by periods of relapse and remission […] (BrE)*
>
> *You must have had relapses and remissions in the past, and shown a steady increase in disability for at least six months, outside of relapses. (BrE)*
>
> *The ride then begins and a significant number of emotions are experienced-there are highs and lows. (BrE).*
>
> *And people often find these feelings recurring as the disease goes through its characteristic ups and downs of attacks and remissions, or causes new or worsening symptoms. (AmE)*
>
> *[…] How can I begin to explain the ups-and-downs of MS to the people around me? (AmE)*

As we can see from the examples above, in the American leaflets the orientational metaphor based on the spatial concepts "up" and "down", identified by Lakoff and Johnson in *Metaphors We Live By* (1980), is very common. In particular, Lakoff and Johnson relate the spatial concept "up" to happiness and health and the concept "down" to sadness and illness, summing up this argument with the conceptual metaphors HEALTH AND LIFE ARE UP and SICKNESS AND DEATH ARE DOWN. These

associations are based on the spatial position of the body when we are in good health or ill, as Lakoff and Johnson point out: "Serious illness forces us to lie down physically. When you are dead, you are physically down" (1980: 15). Therefore, the concept "up" could be used to refer to the stage when the symptoms of MS are mild or not present yet, while the concept "down" could be used to describe an aggressive stage of the disease and a difficult moment for the patient, both from a physical and emotional point of view.

In the British leaflets, the up-down orientational metaphor is sometimes replaced by the metaphor of the roller coaster, which is also used by patients, as we can see in the last example.

> *One way of understanding the initial reaction is to liken it to a roller coaster ride. At first there's a scary anticipation of the ride to follow, then once seated on the ride the realisation there's no turning back. The ride then begins and a significant number of emotions are experienced-there are highs and lows. And, like a roller coaster, some people are able to cope and others find it too frightening. (BrE)*
>
> *Many people with MS liken their emotional reaction to a rollercoaster ride, with its many ups and downs. (BrE)*
>
> *My partner has been amazing throughout this emotional rollercoaster. (BrE)*

The roller coaster metaphor particularly caught my attention. Like the metaphor based on the familiar concepts "up" and "down", the roller coaster metaphor is useful to communicate with lay people, because it is more immediate and clearer than a metaphor based on the technical terms "relapse" and "remission". Furthermore, the reference to the roller coaster could be useful to soften the message that the leaflets want to convey. Indeed, even though not everyone loves having a ride on roller coasters, this type of attraction is usually related to positive experiences: people usually go to amusement parks when they want to have fun and live exciting adventures that can stimulate an adrenaline rush.

4.1.3 MS IS AN ENIGMA

As Camus (2009) stresses, the detective story is another semantic field used in medicine, especially to describe cancer. However, cancer is not the only enigmatic disease. Multiple Sclerosis is described as a mystery, an enigma, a puzzle that is difficult to solve. Without

a shadow of a doubt, the mystery depends in part on the fact that scientists and doctors have not discovered its origin yet.

The precise cause of MS is a mystery. (BrE)

The specific triggering mechanism that releases the immune system to attack its own healthy tissue remains unknown, however, and the cause of MS is still its biggest mystery. (AmE)

The use of terms related to the semantic field of the detective story is particularly evident in the American leaflets, as the examples below show:

The history of multiple sclerosis (MS) is a detective story spanning more than a century. (AmE)

[…] The cause of MS is still its biggest mystery. How its other puzzles have been solved is a fascinating story. (AmE)

For example, MS could not be considered an immune disease because the very existence of the immune system was still unknown (doctors of the time assumed a disease rarely struck the same person twice because the disease "used up" the materials in the body it needed to live, much the way crops use up soil nutrients and die unless they are rotated).

At this time, scientists suspected that some form of toxin or poison caused MS. (AmE)

Abnormalities in spinal fluid were noted for the first time in 1919, though their significance was a puzzle. (AmE)

And myelin was further broken down into its components, isolating the basic protein suspected to be the target of the MS attack. (AmE)

How is MS diagnosed? […] A medical history, in which the physician will look for evidence of past neurological signs and symptoms. (AmE)

A key culprit in MS is the white blood cell called a T cell. (AmE)

The traditional elements of the detective story can be found in the American leaflets: an enigma (the disease), some suspects (the basic protein and some toxins or poisons), hypotheses and assumptions, the process of evidence collection (evidence of neurological signs and symptoms), a culprit (the T cell). The use of these metaphors "colours" language, creates suspense and turns medical texts into an engaging story that grabs the patients' attention, as happens in detective stories.

However, patients themselves sometimes try to hide their disease, because it could create problematic situations (for example in the workplace) or because they are not able to face the reaction of other people, as happens in the following example:

This can lead to MS becoming a 'monster in the wardrobe' – the child knows it exists but the parents tell them it's their imagination. (BrE)

The metaphor above describes a common attitude of people affected by MS: parents tend to hide the truth to their children, because they think that they are too young to cope with the disease. However, hiding MS could be counterproductive and could make it even more frightful: this is the reason why it is described as a monster hidden in the wardrobe.

4.1.4 MS IS A GUEST

A large number of metaphors describe MS as a guest, an intruder, someone or something that arrives silently and changes not only the life of people that are affected by it, but also the life of the people living with patients, such as the members of their family, caretakers and friends. This is the reason why these metaphors have a negative connotation, often emphasised by the adjective "uninvited". It is also interesting to notice that MS is associated with human characteristics, such as the ability to move and to sit down. Therefore, in these example, similes and metaphors coexist with another rhetorical figure, called prosopopoeia (or personification).

Multiple sclerosis (MS) is an unpredictable, uninvited guest that arrives in a person's life, and the lives of those around them, and is there to stay. (BrE)

This can lead to MS becoming the unmentioned guest that sits with you at each meal, watching the TV, and so on. (BrE)

Multiple sclerosis has often been described as the "uninvited guest" who shows up at your house one day, takes up space in every room of the house and never goes home. Every member of the family will have his or her own reaction to the arrival of this guest, and each will have to find a satisfactory way to make peace with it. (AmE)

The single most important strategy for families living with MS is to find a place for the illness in their lives without allowing it to take more space than it really needs. In other words, the uninvited guest needs to be given a comfortable room, but doesn't need to clutter up the whole house. (AmE)

The "uninvited guest" can sometimes get quite greedy, demanding more than its share of these resources, with the result that the needs and priorities of other family members may go unsatisfied. (AmE)

For some people the news is so startling and puzzling that they simply cannot absorb it. It may take several days or weeks for them to be able to think about next steps for dealing with this unwelcome intrusion in their lives. (AmE)

The goal is to find common ground for communication and then use this to begin to work through coping with the intrusion of MS in family life and relationships. (BrE)

Furthermore, the idiomatic expression "to be (like) a third wheel", is used to describe the disease as an unwanted and annoying intruder that puts at risk even the most balanced relationship between lovers:

For many couples, MS becomes like a third wheel in their relationship — an annoying presence that is always getting in the way or interfering with plans and activities. The best way to hold on to feelings of intimacy when there's a third wheel around is to make sure that you and your partner are always functioning as a team — working together to adjust and adapt while making sure that your feelings of frustration are directed at the MS rather than each other. (AmE)

4.1.5 Other metaphors in MS leaflets

In the previous paragraphs, I have analysed some metaphors and similes that allowed me to identify four conceptual metaphors: MULTIPLE SCLEROSIS IS AN ENEMY, MULTIPLE SCLEROSIS IS A ROLLER COASTER, MULTIPLE SCLEROSIS IS AN ENIGMA and MULTIPLE SCLEROSIS IS A GUEST. Apart from these conceptual metaphors, I have identified other metaphorical expressions used to achieve different purposes. Some of these metaphors have an explanatory function, while others are used to minimise the negative symptoms and complications of this disease.

As I argued above, war metaphors are very common in medicine, and they are sometimes used to encourage patients to fight against MS. However, as we can see in the following examples, metaphors related to the semantic field of war can also have an explanatory function:

Recent discoveries also emphasize that myelin is not the only target for destruction in MS. (AmE)

In MS, the body's immune system turns against itself and, instead of fighting off infection, starts attacking the myelin coating surrounding the nerve fibres in the brain and spinal cord. (BrE)

It was soon learned that antibodies neutralize viruses but are also capable of attacking the body's own tissues. (AmE)

These metaphors are used to explain how the nervous and immune systems work. As regards the nervous system, in some metaphors the nerves are described as pathways or messengers that carry information throughout the human body.

The CNS includes the brain, optic nerves and spinal cord, in which nerves that act as the body's messenger system. (AmE)

Think of your central nervous system as a pathway by which messages travel between your brain, spinal cord and other parts of your body. For instance, when you walk, messages must travel from your brain to your leg muscles. If that pathway becomes damaged, their journey may become slower, distorted or even blocked. (BrE)

The descriptions of the nervous system sometimes become even more complex, as we can see in the following examples. The first analogy is related to hydraulics/hydraulic engineering, while the second is drawn from electrical engineering.

Imagine that your nerves are like water pipes, sending water (messages) around your home (body). The protective myelin around your nerves is the lagging. Just as lagging helps to insulate your pipes, ensuring that hot water is delivered efficiently, the myelin insulates the nerves, allowing the messages to arrive swiftly to the right destination. And, as lagging also protects the pipe from damage, myelin helps protect the nerve. In MS sections of the lagging (myelin) on the pipes (nerves) get damaged and fall off, leaving the pipes exposed. If the lagging continues to be damaged, the pipes become vulnerable and when a cold winter comes along, they may crack and burst. If the pipes are not repaired, the water pipe system becomes less efficient. (BrE)

One way to understand what is happening in MS is to think of the nervous system as an electrical circuit. Your brain and spinal cord are the power source – the mains electricity at home. The different parts of your body are the lights, computers, TV and so on. In order to work, these appliances need electricity, just like your body's actions depend on messages from your brain. The nerve fibres in the brain and spinal cord are the wires behind the walls, linking everything together. Plastic insulation protects the cables in the same way that myelin protects the nerve fibres. If the insulation becomes damaged then the appliances might not work properly. There could be interference on the TV. The light might flicker on and off. This is what's happening in MS – damage to the insulation affects the way things work. (BrE)

These analogies, which are longer and more elaborated than similes or metaphors, are based on a parallelism between the nervous system and the plumbing or the electrical circuit of a house. Table 4.1 can be useful to sum up these complex logical arguments:

Table 4.1: Parallelism between the nervous system and the plumbing or the electrical circuit of a house

	THE NERVOUS SYSTEM IS A WATER PIPE SYSTEM	THE NERVOUS SYSTEM IS AN ELECTRICAL CIRCUIT
Nerves	Water pipes	Wires behind the walls
Messages	Water	Electricity
Body	Home	Home (lights and electronic devices)
Myelin	Lagging (of the pipes)	Plastic insulation (of the cables)

These analogies have a clear explanatory function: they are used to explain the way in which MS affects the nervous system to lay people, by making reference to something they are familiar with and that belongs to everyday life.

A large number of metaphors and similes are used by patients to describe the physical sensations and emotions related to the different stages of this disease. The diagnosis is a crucial and at the same time difficult moment, because it causes several negative reactions in patients. The predominant feelings are shock, grief, fear and anger. However, relief is another possible consequence of diagnosis. Some patients tend to soften their situation, minimizing the seriousness of the disease and some medical procedures:

> *I am going to move forward and treat this like a little blip in my life that has taught me to slow down, love myself and my body more, chill out and live life more fully, with more fun and adventure too. (BrE)*
>
> *It doesn't have to mean a life sentence. Yes, it's serious and yes, it does change your life... but you can still enjoy your life. (BrE)*
>
> *Most people report that MRI tests are no picnic, but they're really not uncomfortable. (AmE)*

In the examples above, to downplay the disease, some patients stress that MS is not as overwhelming as some people could think.

Lakoff and Johnson (1980) also identify the conceptual metaphor THE MIND IS A CONTAINER. Making reference to Multiple Sclerosis, this conceptual metaphor could be changed into THE BODY IS A CONTAINER. The relationship between the body and this disease can be summed up in this way: the body is a container and the disease is just a part of it. This concept is also underlined by Littlemore et al. (2013), who compare the body to a container and they describe pain as an entity that occupies a location in the human body.

> *MS has become a part of my life, but it isn't all of my life or all of me. (AmE)*
>
> *MS is a significant part of me, but it is far from the most interesting part. It's just a facet. (BrE)*
>
> *This is your opportunity to remind significant people in your life that although MS is now a part of your life, it isn't all or even the most important part. (AmE)*

The examples above contain some conventional metaphors, but patients sometimes prefer to use unconventional and more creative expressions – such as "Neurozombiosis" – to minimise the seriousness of the disease and cope with it adopting a positive attitude:

> *Fatigue is a tough symptom to deal with and we all our own special ways of trying to handle it. But mostly, we look a bit like zombies trying to get on with our day! (BrE)*
>
> *I have therefore taken it upon myself to rename this neurological symptom into something more appropriate: 'Neurozombiosis'. I describe it to people as if someone had snuck up behind me and jabbed me with a hypodermic full of horse tranquilliser. (BrE)*

Multiple Sclerosis is a disease that causes many problems to lower limbs, such as the sensations of numbness and stiffness. This is the reason why in the leaflets I have found a large number of metaphors in which patients describe the sensations they feel in their legs. Patients often say they have heavy legs, and they sometimes compare them to rubber or jelly, because they feel unstable when they are walking or standing on their feet. A conventional simile used to talk about balance problems is the following:

> *I feel as if I'm on a rocking boat, sometimes on choppy waters, sometimes on more gentle water. Occasionally I have vertigo as well… like a tornado in your head, extreme, lasts a few seconds or minutes. (BrE)*

However, patients sometimes use more creative expressions. For example, to describe the sense of numbness and weakness, they add different shades of meaning to the conventional expression "to wade through water":

My legs get weaker the further I walk and it feels like I am wading through custard or seaweed or something. (BrE)

Not only is numbness a physical symptom, but it is also a sensation that patients can experience from a mental and emotional point of view. This means that they can feel confused or that they lack mental clarity:

Some days, fatigue knocks me for six and I call these days 'cognitively cloudy'. On those days, I don't even acknowledge or remember much of what happens. I can be in the middle of a conversation one minute, then the next I am looking at you blankly, not taking in any information. I am like a computer screensaver, you need to give my arm a little wiggle to wake me up again. (BrE)

In this example, there are three expressions that I would like to take into consideration. The first is the idiomatic expression "to knock someone for six", referred to fatigue. It belongs to the semantic field of sport, it describes a scoring action in cricket and it means "to be completely devastated by something". The second metaphor is "cognitively cloudy". The word "cloudy" comes from the semantic field of weather and it is used to describe the mental confusion that patients can experience. The mind is compared to a sky full of clouds which is not limpid. To conclude, this example ends with an unconventional simile in which the patient compares herself to a computer screensaver, to explain that she has to be slightly shaken in order to become active.

Cricket is not the only sport to which MS leaflets make reference. The first example, about the function of the nervous system, is related to athletics; the second, related to the moment of the diagnosis, is related to boxing.

The movement of the body is controlled by a combination of messages passing back and forth, rather like a relay race. One part of this relay has messages running between the brain and the spinal cord – the other, between the spinal cord and the muscles themselves. (BrE)

My main questions were about how it was going to affect me – it was a bit of a blow to learn there's no cure, but good to know there was something to control it and someone to support me. (BrE)

Another symptom of Multiple Sclerosis that can make life unbearable is fatigue. A conventional and an unconventional simile (respectively) are used to describe the seriousness of this symptom:

You still feel like a tire with a slow leak. (AmE)

What Causes Fatigue? […] Weather. Heat makes many people feel like overcooked pasta, and humidity can make the effects of heat worse. (AmE)

However, this symptom is also described making reference to the semantic field of technology. Patients are compared to machines or other electronic devices, because they have a limited quantity of energy and they can be reset or fixed.

> *Fatigue is also managed by conserving energy and spending it more efficiently. (AmE)*
>
> *Many people describe feeling as though they can't function as quickly as usual. (BrE)*
>
> *I'm still working things out on how best to save and restore my energy, but I am feeling better and know I'm on the right track. (AmE)*
>
> *When I'm trying to explain my lack of energy to people, I sometimes use a 'mobile phone' analogy… I say that whilst everyone else is a mobile phone on a contract with unlimited minutes, I am a pay and go phone, with only £1 credit each day. Whilst they can chat all day everyday, I can either send a few small text messages, or make one long phone call, but then I have to stop until I hopefully get 'topped up' the next day. (BrE)*

The conceptual metaphor THE BODY IS A MACHINE is discussed by Loftus (2011). Loftus, who is interested in medical education and pain management, talks about the role of metaphors in medicine and argues that the conceptual metaphor THE BODY IS A MACHINE can be a double-edged sword. On the one hand, it reassures patients, because "with a machine, it is always possible, in theory, to repair the damage, even if this means replacing parts" (2011: 219). On the other hand, it can lead to the objectification of patients, and it can also raise false hopes.

Even though it is undeniable that people affected by Multiple Sclerosis are those that have to face challenges and overcome problems and difficulties, it is also true that this disease also "infect" people who live with patients, as the following simile shows:

> *Like a pebble thrown into the water, the disease creates a ripple effect on all who are involved. (BrE)*

That is, Multiple Sclerosis is a disease that first of all affects patients. However, as the time passes by, many more people, such as relatives, caretakers and friends, experience the consequences of this disease, even though indirectly. Of course, everyone reacts in a different way to this "ripple effect", as this musical simile shows:

> *Since no two people handle feelings in exactly the same way, the result can be a household full of strong emotions that are being expressed in different ways at different times. It's like a symphony orchestra without a conductor — everyone is playing his or her own tune, not necessarily in sync with anyone else. (AmE)*

4.2 Diabetes

Diabetes is the second disease I have taken into consideration. The term *diabetes* includes "any of a group of diseases characterized by high blood sugar levels caused by insufficient production of insulin, impaired response to insulin, or both […]."[29]

Like Multiple Sclerosis, diabetes is an incurable disease. However, it can be taken under control in different ways, also depending on the type of diabetes you have (Type 1 diabetes, Type 2 diabetes and gestational diabetes are the most common types). A healthy diet based on carbohydrate counting, regular exercise, blood sugar monitoring and insulin injections are usually important to manage this chronic disease.

My analysis is based on the materials I downloaded from the website of Diabetes UK, the leading UK charity for diabetes (https://www.diabetes.org.uk/) and on the information for patients that I found out in the website of the American Diabetes Association (http://www.diabetes.org/).

4.2.1 DIABETES IS AN ENEMY and DIABETES IS A RIVAL

The first thing that I have noticed in diabetes leaflets is that military metaphors are not so common, despite its seriousness. Indeed, as the American Diabetes Association underlines, "Diabetes causes more deaths a year than breast cancer and AIDS combined. Having diabetes nearly doubles your chance of having a heart attack"[30]. Even though some martial terms are used, more neutral and less aggressive expressions seem to be very common. The idea of "fighting the disease" is often replaced by expressions such as "to control", "to cope with", "to treat" and "to manage the disease". The following war metaphors that I have identified are all used by patients. They are taken from the American Diabetes Association website, where some sections include patients' stories.

> *Having diabetes forced me to make lifestyle changes – what I eat, how active I am, managing stress. However, the threat of the extreme downfalls weighs on my mind. Amputation, slow healing wounds, blindness – these are all things that can come without managing the disease. (AmE)*
>
> *Together we can fight diabetes and move forward with a healthy normal life, and continue praying for a cure! (AmE)*

[29] http://www.thefreedictionary.com/diabetes (last visited on 23/01/2017).
[30] http://www.diabetes.org/diabetes-basics/myths/ (last visited on 17/01/2017).

It gives them the life-changing opportunity to be understood by those going through the same fight. (AmE)

I am on a mission to do everything in my power – anything and everything possible – to help knock this disease out for adults and children everywhere! (AmE)

I support Ryan Reed and the Drive to Stop Diabetes campaign because it motivates people to continue enjoying life, even when diabetes is along for the ride. The moment people lose sight of that, the disease wins. (AmE)

The semantic field of sport sometimes seems to be more appropriate to talk about this chronic disease. Using words related to sport instead of military terms might avoid a dramatic tone, which could frighten patients. In a large number of examples diabetes is not represented as a mortal enemy, but as a rival that can be knocked out. The word "challenge" is far more frequent than "fight" (respectively 21 and 2 occurrences). Furthermore, in the corpus there are 354 instances of the word "team", which was not so common in the leaflets about MS (71 occurrences). The "diabetes team" or "healthcare team" is made up by several specialists and it fundamental for diabetes patients: when they have doubts about the disease or they do not know how to cope with it, they can rely on their personal team. The constant presence of the word "team", both in American and British leaflets, made me think about diabetes as a team sport, where collaboration between team mates (patients and doctors) is essential to win the match against the opposing team (diabetes). Some metaphors which include the word "team" are mentioned in the following examples:

You and your diabetes team should check your injection sites regularly for hard lumps. (Bre)

Discuss your plans with your diabetes team so that you get the right care and support from preconception to after the birth. (BrE)

You and your health care team can figure out the right amount for you. (AmE)

Be sure to pack twice the amount of diabetes supplies that you think your child will need. Your packing list should include: […] Day and night phone numbers for your D-team. (AmE)

There are also some references to specific sports, such as archery ("hit your target") and boxing ("to knock out"):

However, don't despair if you can't always hit your target, as any reduction in your HbA1c level (and, therefore, any improvement in control), is still considered to have beneficial effects on preventing the onset and progression of complications. (BrE)

I am on a mission to do everything in my power – anything and everything possible – to help knock this disease out for adults and children everywhere! (AmE)

4.2.2 DIABETES IS AN UNPREDICTABLE CONDITION and DIABETES IS A PUZZLE

In diabetes leaflets, unpredictability is associated not only with physical symptoms and feelings experienced by patients, but also with the fluctuating blood glucose levels. Moreover, diabetes is compared to an enigma, or better a puzzle. That is: diabetes is a complex disease and, as the puzzle is made up by different pieces that have to be put together cleverly, different precautions have to be taken into consideration to manage diabetes. Metaphors drawn from the semantic fields of unpredictability and game are mentioned in the following examples:

Nobody could have prepared me for the shock and powerful roller-coaster of emotions that began five minutes after getting into the doctor's waiting room. (BrE)

Many parents describe trying to manage Type 1 diabetes as a bit like a roller-coaster ride – sometimes your child's blood sugar levels are too high, sometimes too low, and sometimes just right. (BrE)

Nutrition is one of the most important pieces of the diabetes puzzle. Understanding how different foods affect your blood glucose and learning to develop solid meal plans will be a crucial part of your daily routine. (AmE)

4.2.3 DIABETES IS A SHOCKING EVENT

A large number of metaphors and similes with a negative connotation are used to describe this disease: diabetes is considered a shocking event, a nightmare and also a loss. However, it is interesting to notice that these examples are referred to the moment of the diagnosis, when patients experience overwhelming negative feelings such as anger, fear, anxiety and depression.

For the parent, as for the child, the diagnosis of Type 1 diabetes is likely to come as a huge and often sudden shock. (BrE)

If your child's Type 1 diagnosis has felt like a bolt out of the blue, you're not alone – for many parents, it's a complete shock to the system. (BrE)

For the child or young adult, the actual time of their diagnosis is often a confusing or frightening blur. They have a memory of feeling ill, being suddenly taken to hospital and waking up on a drip, surrounded by various medical staff and anxious parents. It may all seem like a nightmare, best forgotten. Diabetes, though, can't be forgotten. (BrE)

"Nobody could have prepared me for the shock and powerful roller-coaster of emotions that began five minutes after getting into the doctor's waiting room. I remember sneaking to the toilet and bursting into floods of tears. It was like a bereavement. (BrE)

Initially I reacted to the news as a death sentence, but I decided to take control of the situation, to find out more about it, and to change it. (BrE)

They may blame themselves, or see their diabetes as a punishment for something. (BrE)

4.2.4 Other metaphors in Diabetes leaflets

Some conventional metaphors are used to soften the seriousness of diabetes. They are related to the period after the diagnosis, when patients, after the initial shock, start to realise that they can live a normal and happy life with diabetes.

It's important to not feel like you have to hide your diabetes from anyone else. It's part of who you are and I don't think anyone should be in a position where they have to hide such an important part of themselves. (BrE)

Having Type 2 diabetes isn't a barrier to you working and achieving your potential. The better your diabetes control, the less likely you are to need time off for any diabetes-related illness. (BrE)

It took me around two months to accept it. It was while surfing on the internet that I realised that diabetes is not the end of the world. It was this quote that helped me – 'diabetes is not a death sentence but a lifestyle'. (BrE)

The first example is related to the conceptual metaphor THE BODY IS A CONTAINER, which I have already analysed in the paragraph about MS. Diabetes is described as a part of the patient that should not be hidden. In the second and third examples, the idea conveyed is that diabetes is not a barrier, an obstacle or a death sentence, but just a lifestyle. That is, it is a challenging disease and patients will probably have difficulty in copying with it, but it is perfectly manageable.

An unconventional metaphor related to the semantic field of game is used to describe this disease:

Diabetes is a game-changer in life – no question. A mixture of snakes and ladders with the highs and lows of hypoglycaemia and hyperglycaemic attacks; Cluedo, when you are completely baffled

as to why blood sugars are too high; Scrabble, when you're trying to understand all the medical jargon for the condition, not to mention scrabbling around for a Jelly Baby or two… and chess, when you're trying to decide the best move. We'll continue to learn the rules of diabetes and manage the condition, rather than allowing it to manage us. (BrE)

These explanatory metaphors taken from an English leaflet compare diabetes to some board games that are very popular in the UK. Diabetes is described as a mixture of several board games and, as the patient says at the end of the metaphor, it is essential to learn its "rules" to manage it. People probably know these games or have at least a general knowledge of their rules. Therefore, the parallelism between diabetes complications and some board games people are very familiar with could be really effective. In my opinion, a short digression about these games could be useful to better understand why they are used in these metaphors.

Snakes and ladders, known in Italy as "Scale e serpenti", is an ancient board game invented in India and later "imported" in England by English colonisers. Originally, it had an edifying purpose and it was part of the education of Indian children. On the board, made up of several squares, many ladders and snakes are pictured. The ladders represent virtues, while the snakes are the symbols of vices and sins. Ladders and snakes influence the movements of the players on the board: the former make the players move to upper squares, while the latter make them move to lower squares. The aim of the game is to move from the bottom square to the top square before all the other players. Taking into account the rules of this game, it is quite clear that the highs and lows represented by ladders and snakes are compared to the highs and lows of blood sugar levels. The link between diabetes and Snakes and ladders is made even stronger if we consider the role of unpredictability: in this board game the movements of the players are determined by a dice (and therefore, by chance). This is what sometimes happens in diabetes: even though a healthy diet, regular exercise and appropriate treatments can help to maintain right blood glucose levels, these levels sometimes depend on factors that patients cannot control.

Cluedo, the second board game mentioned in this comparison, is a game where the players have to discover the culprit of a murder and the weapon used. In this game, players can be baffled by evidences, while patients can be baffled by the ups and down of blood sugar levels.

The third game is Scrabble, known in Italy as "Scarabeo". In this game, players have to guess the words that another player "writes" by putting tiles marked with letters on the

board. This comparison is not between Scrabble and diabetes, but more in general between Scrabble and the language of medicine, defined "medical jargon": like the words written by players on the board, even medical terms can be obscure.

It is interesting to notice that there is also a pun related to this game: the word "scrabble" is associated with the verb "to scrabble around", which means "to use your fingers to quickly find something that you cannot see"[31]. In this example, a refence to jelly babies is made, which are sweets that can provide an emergency source of sugar when the blood glucose level is too low.

To conclude this digression, there is a reference to one of the most popular games of all the times, chess. Diabetes is compared to chess because patients sometimes have to be wise in order to control or at least predict the possible negative consequences derived by this disease.

Other unconventional metaphors drawn from everyday life or personal experiences are used to describe diabetes: it needs attention as a child, it is demanding as an extra full time job, it is annoying as a difficult relative you have to take care of.

> *Like a baby, it wakes us up in the middle of the night, interrupts mealtimes, and forces us to carry special equipment around with us whenever we leave the house. It demands a lot of us all, regularly draws blood, and there's currently no prospect of getting rid of it. (BrE)*
>
> *Diabetes is like having an extra full-time job – you always have to be one step ahead. Two days are rarely the same! That said, it equips you with the most wonderful organisational skills, determination and pride. (BrE)*
>
> *Think of diabetes as a difficult relative who you care for – sometimes it's easy, sometimes it's frustrating and sometimes it's infuriating. At times, you'll cope really well; at others, you won't. Be kind to yourself – you're only human. (BrE)*

Another unconventional metaphor that caught my attention compares diabetes to a footnote:

> *Living with type 1 diabetes is tough but with proper care can be a footnote in your life's story. (AmE)*

A footnote is, by definition: "a piece of additional information that is not very important but is interesting or helps you understand something"[32]. It is quite clear that

[31] http://dictionary.cambridge.org/it/dizionario/learner-inglese/scrabble-about-around (last visited on 20/11/2016).
[32] http://www.ldoceonline.com/dictionary/footnote (last visited on 20/11/2016).

this comparison relegates diabetes to the background and, drawing inspiration from Lakoff and Johnson (1980: 51), we could interpret diabetes using the conceptual metaphor LIFE IS A STORY. In this story, diabetes is given a secondary role: it is not a chapter, an important part of the story, but just a footnote, something that has to be taken into account but that at the same time is not fundamental.

To conclude my analysis about diabetes, I would like to comment the last two examples. They are very different one from the other, not only because different semantic fields are involved, but also because they might have different effects on patients.

The first example is a simile and it is related to the category THE BODY IS A MACHINE.

> *The first seven Healthcare Essentials are tests that everyone should have once a year at an annual review – this is a bit like an MOT for you and your diabetes.*

This simile is about the check-ups that patients affected by diabetes have to do once a year to control the development of this disease. This annual check-up is compared to a MOT (Ministry of Transport) test, which is "a test in Britain that all cars more than three years old must pass every year in order to show that they are still safe to be driven"[33]. As argued in Chapter 2, comparing the human body to a machine or to a vehicle (as happens in this simile) might have negative consequences. Indeed, as Loftus (2011: 220) underlines:

> "Because many people believe that their bodies are just like machines, they come to think that their physical ailments must be fixable, can always be repaired. […]. Such patients can be easily drawn into the downward spiral of searching for a technical fix that they believe must exist and that they must have, going from one health professional who also accept the metaphor of the body as a machine."

The potential danger related to this conceptual metaphor depends on the fact that not all physical problems have a solution. In other words, we are not machines, but human beings, and we have to accept that our body is not perfect.

The other comparison is related to the conceptual metaphor LIFE IS A JOURNEY, which seems to be more appropriate to describe patients' clinical conditions. In the

[33] http://www.ldoceonline.com/dictionary/mot (last visited on 21/11/2016).

following example, this metaphor is slightly more complex: not only is life a journey, but diabetes is part of this journey.

> *As you and your child set out on the journey of life with diabetes, you'll find that each day is a little different and you both may make mistakes along the way. (AmE)*

I would like to devote a brief reflection on the appropriateness of this metaphor, also taking into consideration the opinions of some scholars mentioned in Chapter 2.

The metaphor DISEASE IS A JOURNEY has been considered particularly effective in describing the disease in a positive and encouraging way. Indeed, while some metaphors such as DISEASE IS WAR and THE BODY IS A MACHINE can be harmful and frightening, DISEASE IS A JOURNEY can offer a different – and more comforting – perspective on the disease.

Without a shadow of a doubt, a journey is commonly perceived as something more pleasant than a war or a battle. However, a journey can also include negative aspects. As Kromhout and Forceville (2013) underline, in a journey there can be obstacles, delays, diversions, change in destination, adversaries. The point is that these negative aspects are considered normal and also useful: in the journey of life bad choices are inevitable, but we can learn powerful lessons from our mistakes. On the other hand, mistakes are not allowed in a battle, because they could have more serious and maybe fatal consequences. To clarify this concept, I would like to mention a short extract taken from the American website. It comes after the journey metaphor mentioned above and it compares mistakes in patients' journeys as something absolutely natural:

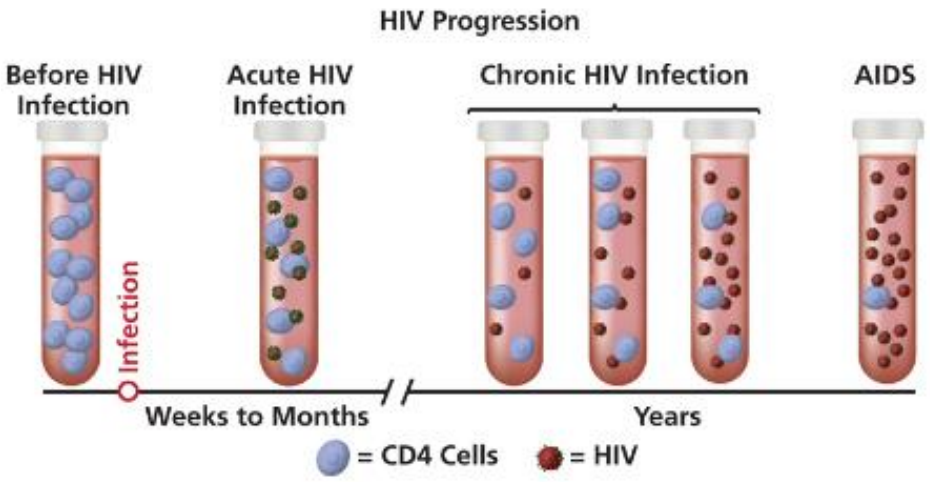
> *Mistakes can make you feel guilty, scared and stressed. But try to focus on the next step. The important thing to remember is that you can't be perfect and everyone makes mistakes.*
>
> *When Mistakes Happen*
>
> *Prepare for the "what if's" by talking with your diabetes care team. For example, ask what to do if your child misses an insulin shot, eats without covering, takes too much insulin or has a high or low blood glucose (blood sugar) level.*
>
> *Remember that everyone with diabetes has high and low blood glucose levels even if their diabetes control is considered very good or excellent. […] Keep expectations realistic and help your child feel more comfortable about admitting mistakes. Some tips to help you: Emphasize that mistakes happen. Emphasize that blood glucose highs and lows are not "bad" or "good" and will happen. Remind your child that no one is perfect — not even you. (AmE)*

4.3 HIV and AIDS

The third illness that I have analysed is Human Immunodeficiency Virus infection, commonly known with the acronym HIV. Before analysing the conceptual metaphors related to this infection, it is essential to highlight the difference between HIV and AIDS and to briefly sum up the history of this illness.

HIV is the virus that causes HIV infection and that, if untreated, can lead to the Acquired Immune Deficiency Syndrome (or simply AIDS). AIDS is a syndrome characterized by specific symptoms and represents the last stage of the HIV infection. Indeed, as the image below shows (Figure 4.1), HIV attacks and destroys CD4 cells, which play a central role in immune protection. When HIV reduces the number of these cells, the immune system becomes weaker and weaker, and it is not able to defend itself anymore from other infections or viruses.[34]

Figure 4.1: How the HIV virus affects the immune system



Scientists and physicians believe that HIV virus was transmitted from apes to human beings at the beginning of the 20th century in Central Africa. The first cases of HIV occurred between 1960 and 1970, but only in 1983 – when the epidemic had already spread all around the world – the cause of this illness was discovered. Physicians Gallo and Montagnier isolated the virus that was believed to be responsible for causing the disease. Even though the virus was discovered thirty-three years ago, a definitive cure for HIV has not been discovered yet. However, drugs that "supress" the virus have been used

[34] https://aidsinfo.nih.gov/education-materials/glossary/3387/hiv-progression (last visited on 26/01/2017).

since 1996. That is, these drugs can slow down the virus; they do not eradicate it, but they prevent it from developing into AIDS. Thanks to the AntiRetroviral Therapy (ART) the number of deaths has increasingly reduced in the last years and HIV has now become a chronic illness, but unfortunately the number of HIV infections is still very high.[35]

An interesting work about the language used to refer to the last stage of HIV infection is *AIDS and Its Metaphors*, written by Susan Sontag in 1989. After having dealt with cancer in her previous critical work *Illness as Metaphor*, she focused on what she defined the "terrifying new disease" (1989: 16) and the "new catastrophic epidemic" (1989: 60). The main difference that Sontag identified between cancer and AIDS is that the former affects patients randomly, while the latter is a consequence of unsafe habits. Therefore, interpreting AIDS as the patient's fault has turned this illness into a deserved punishment or a mark of disgrace. Furthermore, Sontag compared AIDS to a plague, because of its transmission. It is described as a "moving disease" that crosses continents and affects specific groups of people, called "risk groups" (such as homosexual men or intravenous drug users)[36]. These ideas – HIV as a punishment and a virus that overcomes geographical and social barriers – are still used to describe this disease, as my analysis will show.

The metaphorical expressions analysed in the following paragraphs are taken from the leaflets I download from the website of the National Aids Trust (http://www.nat.org.uk/), UK's leading charity dedicated to HIV and AIDS, and from AIDS.gov (https://www.aids.gov/), an American website that provides basic information on this disease, its prevention and treatment to patients.

4.3.1 HIV IS AN UNPREDICTABLE CONDITION

Even though no direct reference is made to the roller-coaster metaphor is not made (see Paragraph 4.2), in HIV leaflets there is a large number of sentences that describe this virus as a fluctuating and unpredictable condition. Some conventional expressions – already found in Multiple Sclerosis and diabetes leaflets (see Paragraphs 4.1 and 4.2) – are used

[35] http://www.unaids.org/en/resources/fact-sheet (last visited on 26/01/2017).
[36] https://www.aids.gov/hiv-aids-basics/prevention/reduce-your-risk/who-is-at-risk-for-hiv/ (last visited on 26/01/2017).

to describe this condition. 102 occurrences contain the adjective "fluctuating", 18 occurrences the noun "fluctuation" and 4 occurrences the adjective "unpredictable".

> *This report has focused on the impact of fluctuating and often unpredictable symptoms, which has not yet been considered in scientific research into HIV-related symptoms and side-effects of treatment. (BrE)*
>
> *In addition to the current focus on the frequency and severity of symptoms, assessments must also consider the impact of unpredictable fluctuation and the way in which multiple, lower-level symptoms can combine to have an impact that is greater than the sum of their parts. (BrE)*
>
> *Participants emphasised fluctuation both with regards to when symptoms are experienced, as well as variation in the severity of symptoms. (BrE)*

In another example, the unpredictability of life with HIV is conveyed through the semantic field of game. In the diabetes leaflets, the fluctuating development of the disease was compared to several board games. Here, the game mentioned is the lottery, where the winners are determined by chance. As it is difficult to predict who will win the lottery, in the same way it becomes almost impossible to plan normal activities if you have HIV infection.

> *This random occurrence affects my day to day lifestyle as nothing can be planned with any certainty. Work, relationships, holidays ... everything becomes a lottery as to whether it can be completed. (BrE)*

A reference to the lottery is also made when a patient talks about the effectiveness of the psychological support offered by clinics in the UK.

> *I think it's a bit of a post code lottery, really. Depends what clinic you go to and what services they have. My experience has been really good in terms of the support I've had. And I hear from other people that it's not been good. So I think it just depends… (BrE)*

4.3.2 HIV IS AN ENEMY

Even though nowadays HIV is a chronic disease that can be managed with appropriate treatments, it is still often described through aggressive and violent terms. A large number of metaphorical expressions taken from the corpus represent the disease as a dangerous

enemy that attacks and weakens the body, destroying the immune system, as can be seen from the following examples:

HIV damages the body's immune system so that it can no longer effectively fight off infections. (BrE)

Over time, HIV damages the body's immune system, leaving people vulnerable to cancers and infections that healthy immune systems beat off. (BrE)

Once a person is infected with HIV, the virus begins to attack and destroy the CD4 cells of the immune system. (AmE)

Your body recognizes this invader and uses a number of different tactics to destroy it. (AmE)

Without treatment, HIV advances in stages, overwhelming your immune system and getting worse over time. (AmE)

Furthermore, the aggressiveness of the virus and the severe symptoms associated with it turn everyday life into a war that does not always have a positive outcome. The nouns "battle" and "survival" and the verbs "to strive" and "to survive" are used to describe this war, as shown in the following examples:

Exhaustion and fatigue are a constant daily battle. (BrE)

When striving for a 'normal' life, a life which includes work, leisure, relationships, sex and self-determination, the quality of life when living with HIV is often assessed as low. (BrE)

I'm so pleased I survived that opportunistic infection. (BrE)

This can lead to poorer prognoses and shorter survival after an HIV diagnosis. (AmE)

In an English leaflet that deals with the psychological support given to HIV patients, some labels related to this disease are discussed. In particular, the following two labels related to semantic field of war and violence have caught my attention:

HIV, the deadly virus. (BrE)

AIDS 'timebomb'. (BrE)

In the first example, which is referred to the HIV infection, the negative outcome that this virus can have is clearly stressed. Again, the virus is described as an aggressive enemy that can cause the death of the patients. The second example, referred to patients affected by HIV, describes them as time bombs. That is, HIV-patients are considered as

potentially dangerous and threatening people, who can "explode" at any moment, infecting other people.

Martial terms are used also when talking about the treatments provided to control the virus and the initiatives organised to raise awareness on this disease, as can be seen from the following examples:

> *HIV medicines are grouped into different drug classes according to how they fight HIV. (AmE)*
>
> *This evidence deficit is particularly notable in Europe, despite the fact that both the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia and the EU Commission's action plan emphasise the importance of taking steps to address stigma. (BrE)*

However, the main enemy is sometimes not the virus. Indeed, if HIV is detected early, appropriate treatments can be administered to patients in order to prevent the virus from developing into AIDS. In some leaflets, there is a shift of attention from the virus to the stigma associated with it, which is as dangerous as the disease itself. Stigma can be defined as "a strong feeling in society that being in a particular situation or having a particular illness is something to be ashamed of"[37]. It often causes the marginalization and discrimination of HIV patients, and prevents them from receiving the best treatment. The use of martial terms to talk about HIV-related stigma had already been discussed and criticized by Sontag (1989: 11), who claims that "military metaphors contribute to the stigmatizing of certain illnesses and, by extension, of those who are ill." The semantic field of war to talk about stigma is still common in HIV and AIDS discourse, as the following examples show:

> *All NAT's work is focused on achieving four strategic goals: […] 4) Eradication of HIV-related stigma and discrimination. (BrE)*
>
> *Women living with HIV/AIDS (WLHA), battling stigma, discrimination and denial and the role of support groups as a coping strategy: a review of the literature. (BrE)*
>
> *A national strategy should seek to eradicate HIV-related stigma and discrimination and ensure that people living with HIV are aware of and access their rights. (BrE)*
>
> *Combating HIV stigma in health care settings: What works? (BrE)*

[37] http://www.ldoceonline.com/dictionary/stigma (last visited on 3/01/2017).

4.3.3 HIV IS AN OBSTACLE and HIV IS A BURDEN

HIV and its symptoms are also described as an obstacle or a burden. The following extracts related to the conceptual metaphors HIV IS AN OBSTACLE and HIV IS A BURDEN show the negative consequences of this infection. That is, HIV infection erects barriers between patients and the rest of the world. As a consequence, the virus prevents patients from living a normal life in many different situations, including the working and social life. However, as the last example of the extracts below shows, the burden that patients have to bear is not always the disease itself. In many cases the real load is the stigma related to the disease, and all its negative consequences, such as marginalization and discrimination.

> *The study also looked at how HIV had limited the respondents' working life. (BrE)*
>
> *The experience of these fluctuating symptoms is a cause of real distress for some people living with HIV and creates significant barriers to work, daily living and social participation. (BrE)*
>
> *Their recent UK study found that a high proportion of people living with HIV reported a range of symptoms and impacts which resulted from the psychological burden of living with HIV. (BrE)*
>
> *HIV stigma is an unjust and unacceptable burden on the lives of people with HIV. (BrE)*
>
> *The UK epidemic continues to reflect the unequal global burden of HIV, however, and African-born heterosexuals are still disproportionately affected by HIV. (BrE)*

4.3.4 HIV IS A SECRET

Because of stigma and of all the negative associations related with this condition, HIV is also described as a secret, which has to be hidden to allow patient to live a normal life. Sometimes the reference to HIV as a secret is direct. In other examples, the conceptual metaphor HIV IS A SECRET is associated with the issue of disclosing the patients' HIV status, as in the following examples:

> *Keeping your diagnosis a secret from them can confuse them and make them feel anxious. Secrets can be stressful in another way too. If you tell your children about your HIV diagnosis, it may not be the best idea to ask them to keep your HIV status a secret from other family or friends. (BrE)*
>
> *That may be because people who disclose their HIV status are more likely to have a good support system—it's hard to have "real" relationships with your family when you are hiding a big secret like HIV. (AmE)*

Focus group respondents noted that the decision to disclose at work had been a difficult one which involved weighing up a number of different factors. (BrE)

Some employees may be very open about their status, others may think it is irrelevant to their colleagues or have previously had negative reactions and so choose not to disclose. (BrE)

If you decide to disclose to one or more of your coworkers, think carefully about which individuals to tell and how to tell them. (AmE)

The description of HIV as a secret often depends on the fact that this virus is also associated with dirt and immorality. That is, what can be considered the result of an immoral or sinful behaviour is hidden to avoid marginalization and social judgement. It is due to the fact that the virus is acquired through unsafe behaviours, such as unprotected sex and the sharing of needles or syringes for drug injection. However, I found only one example in my data related to the opposition dirty/immoral and clean/moral. The following sentence is taken from an English leaflet, where short quotes by patients are included. In this quote, a man talks about his sexual life and says that, when he chats online, he defines himself "clean" in order to hide his HIV positive status.

I use terms like "clean" or "disease-free" when I cruise for sex online. (BrE)

4.3.5 HIV IS A TRAVELLER

I have also identified some metaphorical expressions related to the semantic field of journey or, more in general, to movement. This depends on the fact that HIV is a virus which can be transmitted from an infected person to another, while the conditions analysed in the previous paragraphs (Multiple Sclerosis and Diabetes) are not contagious but hereditary or caused by an unhealthy lifestyle. The possibility of transmitting HIV has led to description of it as a "moving disease" that crosses borders and affects people all around the world. For example, in the following sentence about the origin of HIV, the "mobility" of the virus is underlined through the verbs "to jump" and "to spread":

Studies show that HIV may have jumped from apes to humans as far back as the late 1800s. Over decades, the virus slowly spread across Africa and later into other parts of the world. (AmE)

In the following examples, the disease is described as a traveller who follows different routes to infect other people:

It is therefore interesting to explore how awareness of HIV transmission routes vary by different members of the public. (BrE)

Some HIV transmission routes, for example, sex without condoms and sharing of needles for injecting drug use, are subject to social judgement. (BrE)

Approximately a quarter of people living with HIV do not know they have the virus and there is clear evidence that the majority of new transmissions come from people who are themselves unaware of their HIV status. (BrE)

During this time, HIV infection may not show up on an HIV test, but people who have it are highly infectious and can spread the infection to others. (AmE)

Not only is the semantic field of journey used to describe HIV transmission, but also the treatments for this virus. In the corpus, I found out 10 occurrences of the expression "care pathways" and three of "clinical pathways". The following are some examples of them:

There are integrated care pathways for older people living with HIV. (BrE)

In addition, care pathways must consider the needs of young people as they move from child to adult services. (BrE)

HIV is an infectious disease that does not respect local government boundaries and so national leadership to complement local knowledge and expertise is essential; as a national epidemic HIV needs to be addressed nationally. (BrE)

A definition of "care pathway" is given by the European Pathway Association (EPA):

> "A care pathway is a complex intervention for the mutual decision making and organisation of care processes for a well-defined group of patients during a well-defined period. […] The aim of a care pathway is to enhance the quality of care across the continuum by improving risk-adjusted patient outcomes, promoting patient safety, increasing patient satisfaction, and optimizing the use of resources." [38]

That is, a care pathway is a programme of medical procedures designed to cure patients and at the same time support their families or caretakers. As the term "pathway" suggests, treatment is based on a series of several goals that have to be achieved to cure or manage a specific condition. Therefore, the disease can be seen as a long journey made

[38] http://e-p-a.org/care-pathways/ (last visited on 4/01/2017).

up of different steps, which can lead to the recovery of the patient. In this perspective, the traveller is not the disease anymore, but the patient himself/herself. Successful treatments represent pleasant moments of this journey, while unsuccessful or useless treatments represent obstacles that interrupt the journey and put the patients' life at risk.

4.3.6 HIV IS A RIVAL

An alternative solution to military metaphors (see Paragraph 4.3.2) is represented by the semantic field of sport. Some tokens contain words related to this semantic field and, as already seen in the paragraph about diabetes, they describe the disease as a rival. For example, 22 occurrences contain the word "tackle", which is related to the semantic field of sport and is particularly common when talking about football. The verb "to tackle" is sometimes related to HIV, but it is more often associated with HIV-related stigma, as can be seen from the following examples:

> *In 2001 the UK signed the United Nations Declaration of Commitment on HIV and AIDS, pledging to take action to tackle HIV both in the UK and internationally (a pledge renewed in 2011). (BrE)*
>
> *In 2012 there are many things to celebrate about the progress made in tackling the HIV epidemic both globally and in the UK. (BrE)*
>
> *Although the complexity of HIV stigma makes it difficult to address, this is not to say nothing has been done to improve resilience of communities affected by HIV and to tackle stigma at its source. (BrE)*
>
> *Employers, professional associations and trade unions must take effective steps to tackle HIV-related discrimination in the workplace. However, the role of mobilising the community in reducing stigma is more difficult to measure, despite the fact that many believe it to be an important component of tackling stigma. (BrE)*

The noun "challenge" and the verb "to challenge" are also quite frequent. They are used to talk about HIV-related stigma or the symptoms of this disease, as the following extract illustrate:

> *And so the programme used skills-based workshops that supported attendees to meaningfully challenge stigma. (BrE)*
>
> *She spoke first about depression, which has been identified as the most common psychological challenge for people living with HIV, and which has been most extensively researched (BrE)*

The challenges associated with researching fluctuation over a period of weeks or months have already been acknowledged. (BrE)

4.3.7 Other metaphors in HIV and AIDS leaflets

In the corpus about HIV and AIDS I have identified other metaphorical expressions. Two of them are related to this virus. The first example is similar to a metaphor I identified in the analysis about diabetes, and it is about the tendency of patients of blaming themselves for having a given disease. On the other hand, the second example tends to downplay HIV, underlining that it is not a deadly virus anymore, and that patients can have a normal life if they take the appropriate drugs to suppress the virus:

Feelings of self-stigma can include blame, internalised shame and a sense that HIV is a punishment for behaviour. For some it can have a significant impact. (BrE)

In the UK, HIV is no longer a death sentence, but a long-term manageable condition. (BrE)

I have also identified three metaphorical expressions about patients affected by HIV. The following examples contain direct speech, whereby patients talk about the feelings and sensations caused by the virus and its symptoms:

I am unable to focus on work, feeling like I have jet lag. (BrE)

...It's just me alone looking at the four walls. Maybe just listening to the radio... Isolation. You're isolated. Yeah, like you've gone in a jail. You're alone there. (BrE)

I quite often felt I'd 'hit a brick wall' when untreated, I wouldn't always know when that was going to happen and needed to rest when it did. (BrE)

In the first example, a patient talks about the sensation of tiredness and mental confusion, which is related to sleep disorders caused by the virus. In order to describe this sensation, s/he makes reference to common experience, compares it to jet lag. In the second example, the idiomatic expression "to hit a brick wall" is used to talk about the patient's condition when s/he does not take the drugs commonly used to manage the virus. The idiom used means "to suddenly not be able to make any progress"[39] and stresses the importance of following the treatment administered by physicians. To conclude, in the last example the patient describes her/his feeling of loneliness and compares

[39] http://www.ldoceonline.com/dictionary/hit-a-brick-wall (last visited on 4/01/2017).

himself/herself to a prisoner who lives in a jail, without psychological support and someone who cares for him/her.

4.4 Common diseases: seasonal influenza, common cold, respiratory tract and ear infections

In this paragraph, the metaphorical expressions which will be analysed are related to a virus that is quite common and, if compared with HIV virus, relatively harmless. This virus causes seasonal influenza, which affects a large number of people every year, especially in winter. Apart from seasonal influenza, other frequent and less dangerous medical conditions have been taken in consideration: common cold, respiratory tract infections (such as laryngitis and pharyngitis) and ear infections. I have decided to group these medical conditions because they have something in common: they are usually curable, in contrast with the diseases analysed in the previous paragraphs. Even though these common medical conditions are usually not dangerous for our health, there can be some exceptions. Indeed, they can lead to serious complications, above all when they affect some types of people, such as children, pregnant women, old and frail people and people with an immunodeficiency disorder. However, they generally do not worry people as much as the medical conditions mentioned in the previous paragraphs do.

I have decided to analyse these conditions to see if there are some differences in the way in which they are portrayed. In particular, I was interested in analysing the use of metaphorical expressions, starting from the assumption that these conditions are commonly considered less dangerous than chronic and incurable diseases.

The material analysed is taken from the National Health Service (NHS) website (http://www.nhs.uk/Conditions/Pages/hub.aspx) and the Center for Disease Control and Prevention website (https://www.cdc.gov/). NHS is the public health service of England, Scotland and Wales, while CDC is one of the major operating components of the U.S. Department of Health and Human Services.

Before introducing the conceptual metaphors identified in the corpus, a clarification of them has to be made. Metaphorical expressions related to common diseases are not as common as those that I found out in the materials about chronic and incurable conditions. Furthermore, the metaphorical expressions I identified are related to seasonal influenza and cold, while I did not find metaphors about ear and respiratory tract infections.

4.4.1 INFLUENZA IS AN ENEMY

As regards war metaphors, they are distributed unequally in the corpus. Indeed, they are more common in the information taken from the CDC (Centers for Disease Control and Prevention) website than in those taken from the NHS website.

The following war metaphors in the following extracts, taken from the NHS website, are referred to the immune system and seasonal influenza:

> *Your body learns to fight off a particular kind of virus every time you get an infection, which is why you get fewer colds as you get older. (BrE)*
>
> *If there's an outbreak of flu in a residential or nursing home […] antiviral medication may be offered to people if they have been in contact with someone with confirmed flu. (BrE)*
>
> *The flu virus changes, which is why every year a different vaccine is produced to combat the latest strain of the virus. (BrE)*

In the first example, the verb "to fight off" is used to describe how the immune system works. The second example contains the term "outbreak", which is often used to describe the beginning of a war. This term is also used in medicine to talk about the sudden and violent increase in the number of cases of a disease. In the last example, the military verb "to combat" – already mentioned in the paragraphs about Multiple Sclerosis and HIV – is used as a variant of the verb "to fight".

In the American website, war metaphors are slightly more common: I found 7 examples in which influenza is described as an enemy that has to be fought in different ways. This idea is clearly stressed in a sticker, where the expression "Fight the flu" is used as a slogan to raise awareness about the importance of flu vaccination (see Appendix 2). Other examples related to the conceptual metaphor INFLUENZA IS AN ENEMY are the following:

> *Everyday preventive actions that can help fight germs, like flu […]. (AmE)*
>
> *If an outbreak of flu or another illness occurs, follow public health advice. (AmE)*
>
> *Antiviral drugs are prescription medicines (pills, liquid or an inhaled powder) that fight against the flu in your body. (AmE)*
>
> *CDC recommends a three-step approach to fighting influenza (flu). (AmE)*
>
> *To help slow the spread of influenza (flu), the first line of defense is getting vaccinated. (AmE)*
>
> *Antiviral drugs are a second line of defense to treat the flu if you get sick. (AmE)*

The examples contain the noun "outbreak", already seen in the English material, and the verb "to fight". Furthermore, the military term "line of defense", meaning "defensive structure consisting of a barrier that can be employed for defense against attack"[40], is used to introduce two useful weapons which can be used against the disease: vaccine and antiviral drugs.

4.4.2 INFLUENZA IS A TRAVELLER

Another semantic field involved in both the British and American material is that of movement. This is due to the fact that, being flu a viral infection, it is described as a moving disease that can be passed from a human being to another. The contagiousness of influenza is expressed through the adjectives "circulating" and the verbs "to spread", "to transfer" and "to circulate", as in the following examples:

> *CDC monitors circulating flu viruses and their related disease activity and provides influenza reports (called "fluview") each week from October through May. (AmE)*
>
> *That means you may be able to spread the flu to someone else before you know you are sick as well as while you are sick. (AmE)*
>
> *Read the page on preventing flu for more information about stopping the infection spreading to others. (BrE)*
>
> *These viruses can be spread through droplets that are coughed and sneezed out by an infected person. The viruses can also be transferred via a person's fingers or surfaces, such as door handles, if there are infected droplets on them. (BrE)*

As the last example shows, influenza viruses "travel" from an infected person to another or to objects – such as door handles but also desks or countertops – through tiny droplets, which can be considered the "means of transport" of the viruses. This makes influenza a very contagious illness. The verb "to spread" is also used to talk about the way in which colds are transmitted, as follows:

> *How do colds spread? (BrE)*
>
> *Colds spread most easily among groups of people in constant close contact, such as families and children in school or day care facilities. (BrE)*

[40] http://www.thefreedictionary.com/line+of+defence (last visited on 7/01/17).

4.4.3 INFLUENZA IS AN UNPREDICTABLE CONDITION

To conclude, influenza is often described through the semantic field of unpredictability. This is due to the fact that influenza can be caused by different strains of viruses, which can change from year to year. This is the reason why sometimes influenza vaccines do not work the way they should. They can protect people from some types of influenza viruses, but other types of viruses – not contained in the vaccine – can still infect people.

> *It's not possible to predict what this flu season will be like. While flu spreads every year, the timing, severity, and length of the season varies from one year to another. (AmE)*
>
> *Flu viruses are constantly changing so it's not unusual for new flu viruses to appear each year. (AmE)*
>
> *The timing of flu is very unpredictable and can vary in different parts of the country and from season to season. (AmE)*

4.5 Pain and pain management

In this paragraph, I will take into consideration metaphorical expressions that are used to describe painful sensations and symptoms caused by the diseases analysed. In particular, I will study these expressions on the basis of their degree of conventionality.

Expressions can be "fixed expressions", that is they are commonly used to describe pain and painful sensations. Fixed expressions are usually used both by patients and doctors, and some of them have also been included in the Mc Gill Pain Questionnaire to evaluate and rate different types of pain. On the other hand, other metaphorical expressions are the result of creative uses of language. In other words, they are less codified than conventional expressions, but at the same time they are an essential tool to encourage the communication between doctors and patients and facilitate pain treatment.

As Semino (2010) points out, the majority of conventional metaphorical expressions referred to pain can be related to a source domain that in her coding scheme is described as CAUSES OF PHYSICAL DAMAGE. These expressions make reference to different concrete causes of physical damage, but they should be interpreted in a metaphorical way. For the sake of clarity, I will give an example taking into consideration the expression "stabbing pain". When patients describe pain using the adjective "stabbing", they are not talking about a type of pain that is really caused by a knife or a dagger. What they are doing is abstracting an image from their idea of "stabbing" of a violent penetration caused

by a pointed object that enters the body. In this perspective, according to Semino (2010), these expressions can be labelled as metaphorical.

The following chart contains the conventional metaphorical expressions related to pain that I identified in my corpus. I have tried to classify these expressions associating them to a specific cause of physical pain. Table 4.2 shows some of the source domains are taken from Semino's classification (2010).

Table 4.2: Source domains related to pain taken from Semino's classification (2010)

Metaphorical expressions describing pain	Source domain: CAUSES OF PHYSICAL DAMAGE
Burning pain or sensation	High or low temperature
Cold pain	High or low temperature
Constricting pain	Application of pressure/weight
Creeping pain	Insects crawling on the skin
Crushing pain	Application of pressure/weight
Girdling pain	Application of pressure/weight
Hot pain	High or low temperature
Pins and needles pain or sensation	Insertion of small pointed objects
Prickling pain	Insertion of pointed objects
Sharp pain	Application of sharp objects
Shooting pain	Movement that occurs inside the body
Squeezing pain	Application of pressure/weight
Stabbing pain	Application of sharp objects
Stinging pain	Insertion of pointed objects
Throbbing pain	Movement that occurs inside the body
Tingling pain or sensation	Insects crawling on the skin

However, as I argued above, it is interesting to take into consideration less conventional expressions used by patients to describe their painful sensations. Before mentioning and discussing these expressions, I would like to say something about their "structure". Conventional expressions like those listed in the chart in the Table 4.2 are short noun phrases made up by the head nouns "pain" or "sensation" and an adjective,

often in -ing form – such as constricting, stabbing or throbbing – used as a pre-modifier. On the other hand, less conventional metaphorical expressions are longer and usually include more detailed comparisons.

I will start the analysis taking into account some expressions that are used by MS patients. MS patients often have to deal with a painful sensation caused by spasms of the intercostal muscles. The conventional expressions used to describe this type of pain are "constricting pain" or "girdling pain", because the patient's sensation is that of having a girdle around their chest. Instead of using these conventional metaphorical names given to pain, patients sometimes prefer to describe this sensation in their own words. In an English leaflet about MS, the following example can be found:

Some people describe this sensation as like wearing a tight corset. (BrE)

In a similar example, the word "corset" is replaced by "band". Another interesting label that is used to describe this sensation is "MS hug". What is interesting about this label is the fact that a friendly name is used to describe a painful symptom of MS. This is probably an attempt to lighten a severe symptom of this disease, to help patients to deal with it in a more positive way.

Furthermore, MS patients use some expressions to describe the painful sensation they feel in their arms and legs, which is caused by fatigue. I would like to take into consideration two different ways – in this case similes – of describing the same feeling.

Let us take the following examples into consideration:

My arms and legs feel heavy. (BrE)

When I walked it felt as though I was wading through water. (BrE)

My legs get weaker the further I walk and it feels like I am wading through custard or seaweed or something. (BrE)

In the first example, the "basic" feeling of heaviness in the upper and lower limbs is mentioned. The second and third examples, which contain the verb "to wade", represent, instead, a more "coloured" and detailed explanation of this sensation. The literal meaning of the verb "to wade" is "to walk through water that is not deep"[41]. This verb is conventionally associated with nouns like "water" or "liquid", which describe the

[41] http://www.ldoceonline.com/dictionary/wade (last visited on 14/01/2017).

medium through which the action is carried out. Therefore, the second example can be considered a conventional metaphor, while the third clearly shows that the patient uses this verb in a creative way. Indeed, the reference to a liquid substance is replaced by the nouns "custard" and "seaweed". The first noun refers to the semantic field of food: custard is, indeed, a culinary preparation with the consistency of a thick cream. On the other hand, "seaweed" is the type of plant that grows in the sea. By using this creative metaphor, the patient seems to emphasize the difficulty that s/he experiences when walking. Indeed, if someone waded through substances that are thicker than water – such as custard or water full of seaweeds – s/he would feel his/her legs even more tired.

Another unconventional comparison is used to describe the painful sensation that patients experience in their legs, as can be seen from the following example:

It hurts to walk. It feels like a huge ball pressing against the heel of my foot. (BrE)

However, not only does fatigue affect muscles, but it also affects the eyes, causing blurred vision. This symptom is described by a patient in the following way:

We also did some reading, but my eyes start 'swimming', which always makes it hard to continue. (BrE)

This unconventional expression, "swimming eyes", is probably used to describe the fact that eyes cannot focus on words or that they are overwhelmed by tiredness and the patients do not know what to look at.

Another unconventional and creative metaphorical expression is used by a HIV patient, who describes his nerve pain through a complex and detailed metaphor:

Nerve pain can be a bummer, it creeps up sometimes when you least expect it - how can you sit in the cinema or theatre and enjoy a performance and at the same time stifle the scream when a red hot poker is stuck in your lower limbs? (BrE)

In this example, nerve pain in the lower limbs is described as a frustrating experience and is compared to "a red hot poker". Imagination is used to describe a type of pain which is similar to burning or hot pain, where a poker is "a metal stick used to move coal or wood in a fire to make it burn better"[42]. Therefore, the painful sensation is related to the semantic domain of "pain caused by hot temperature".

[42] http://www.ldoceonline.com/dictionary/poker (last visited on 9/01/2017).

Some metaphorical expressions are also used to describe a different type of pain. Indeed, physical pain is only one of the possible manifestations of pain. A large number of patients affected by chronic and incurable diseases experience mental and psychological pain. Several metaphorical expressions are used to describe the unpleasant sensation of feeling sad and apathic. In the series of examples below, this sensation is described through orientational metaphors (Lakoff and Johnson, 1980) which relate this sensation to the spatial concept "down".

Depression is characterised by a persistently low mood most of the time, lasting for a few weeks or more. (BrE)

Coping with a diagnosis of diabetes can be difficult and many people do experience times of uncertainty or low mood. (BrE)

If you're feeling down or people tell you they think you're depressed, see a mental health professional. (AmE)

While everyone with MS needs to grieve over whatever losses the MS may cause, and everyone has days of feeling down or discouraged, not everyone experiences five or more of the symptoms listed for days or weeks at a time. (BrE)

Another metaphorical expression, or rather an idiom, can be included in this group of orientational metaphors which are used to describe unhappiness. "To be down in the dumps" expresses a feeling of sadness or melancholy but, in the following example, it also describes a feeling of apathy and indifference towards the reality in which these patients live.

Everyone has low-energy days. And everyone knows what it's like to be down in the dumps and not feel like doing much of anything. (AmE)

An alternative to orientational metaphors is "to feel blue". This idiom, identified in an English leaflet, is drawn from the semantic field of colours. It is usually used in informal contexts and means "to feel sad and without hope"[43].

To conclude, I would like to mention the last three creative similes used to describe patients' sensations.

Here are just some of the words people use to describe pain:
squeezing or crushing – like a vice.

[43] http://www.ldoceonline.com/dictionary/blue (last visited on 10/01/2017).

like ants under my skin or 'creepy crawlies' […] (BrE)

[…] the person experiences a buzz-like sensation. (BrE)

In the first example, two similes are used to describe different types of pain related to MS. "Like a vice" is an alternative creative way of describing what is usually known as "squeezing" or "crushing" pain. The feeling of distress and compression is compared to the painful sensation which could be experienced if someone bites you or holds the aching part of your body tightly, as if s/he were using a clamp or a vise. The second simile is an unconventional variant of the expression "tingling pain": formication is compared to the feeling of having small insects, like ants, that crawl on or under the skin.

The semantic field of animals is also present in the last example, related to the feelings that patients experience when they do the test of vibratory sense to diagnose MS. Here, "buzz-like sensation" refers to the sensation caused by the vibration of the machinery used during the diagnosis process, which is similar to the annoying buzzing noise caused by mosquitos.

4.6 Conclusion

As can be seen from the qualitative analysis carried out in this Chapter, metaphors are commonly used in Medical Condition Leaflets, both by professionals and patients. Furthermore, the metaphors identified are heterogenous from different points of view: they are drawn from different semantic fields and they are used to achieve different goals. It is also interesting to notice that some metaphors are "fixed", that is, they are conventional metaphors which are usually easier to understand. On the other hand, some metaphors are the result of the creative use of language.

Further information about the metaphors analysed will be given in the following Chapter, which focuses on quantitative data.

CHAPTER 5: Quantitative analysis of the Corpus

This Chapter presents and discusses the results obtained from the analysis of the materials investigated with AntConc and UAM Corpus Tool. The data contains 617 instances of metaphors, which were the specific material I studied. To be precise, the "Statistics" function in UAM Corpus Tool has provided me with statistics about the phenomena I annotated the texts for, as described in Chapter 3. Given the large number of variables taken into consideration (see Figure 3.2), I decided to use histograms to represent the results and to compare and highlight similarities or differences.

Each histogram consists of the following elements:

- Title: it indicates the feature studied;
- Legend: it provides additional information to interpret the diagram;
- Horizontal axis (also called x axis): it represents the way in which data is sorted. Data is put into intervals, also called categories or bins. In the histograms included in this Chapter, these intervals are represented by diseases, semantic fields, categories of people (professionals or patients) and conventionality;
- Vertical axis (also called y axis): it includes the scale which shows the number of times, also called frequency, of the values within a given interval. In all the histograms included in this Chapter, the values of the vertical axis go from a minimum of 0 to a maximum of 100;
- Bars: they are the columns that give information about the distribution of data; their height represents the frequency of the values within an interval.

Before analysing the results, it is important to give information about the data retrieval process. The "Statistics" function of UAM Corpus Tool normalises quantitative data in two different ways: as either percentages of the total number of instances of a given variable or as percentages out of the total number of words in the texts. I decided use data normalised as percentages, calculated out of the number of metaphors identified in my corpus. In this way, the figures seem to me to be more easily comparable.

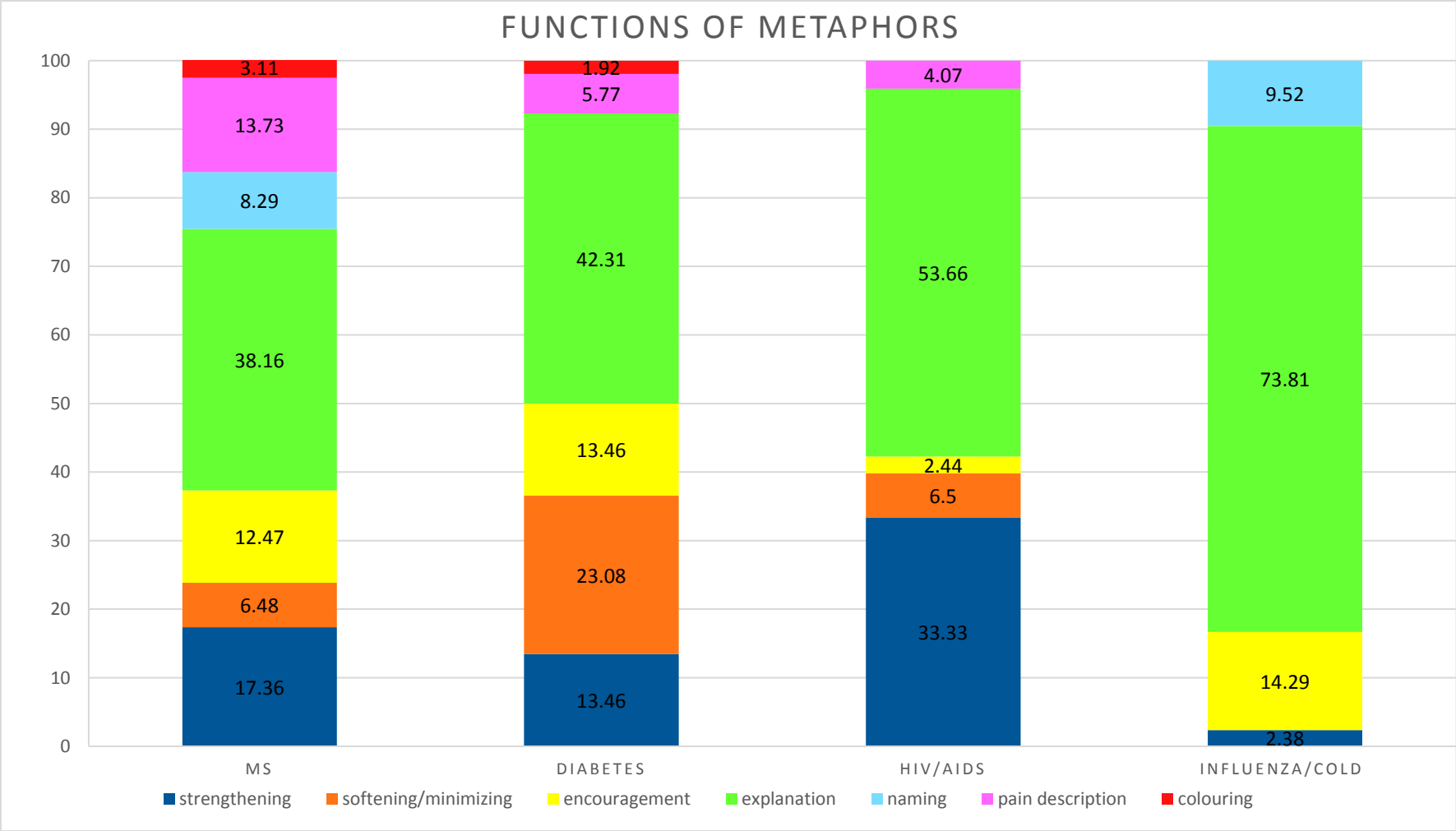
5.1 Analysis of the functions of metaphors

The first feature I took into consideration is the function of metaphors. While I was reading the materials included in my corpus, I realized that some functions of the metaphors were more recurrent than others. I therefore decided to look into this feature by considering each medical condition as a sub-corpus, which enabled me to explore similarities and differences between the diseases studied.

Figure 5.1 provides a graphic representation of the frequency of different functions in the four medical conditions (Multiple Sclerosis, diabetes, HIV/AIDS and influenza and cold). The four medical conditions are given on the horizontal axis, while the different functions are represented by the coloured bars with different heights. The functions are:

- Strengthening (colour: dark blue): metaphors with this function are those used to add strength to diseases, exaggerating their seriousness;
- Softening/minimizing (colour: orange): these metaphors are the opposite of strengthening metaphors, and they are used to downplay the seriousness of the diseases studied, making them less dangerous for patients;
- Encouragement (colour: yellow): encouraging metaphors focus on patients, and not on diseases (as occurs with strengthening and softening metaphors). They aim at providing emotional support to patients, inciting them not to give up;
- Explanation (green): explanatory metaphors are used to explain how diseases affect the body or how the body works;
- Naming (colour: blue): these metaphors are used to name body parts;
- Pain description (colour: pink): these metaphors are used to describe painful sensations experienced by patients;
- Colouring (colour: red): these metaphors are used to "colour" language, that is, to make it more vivid, interesting and captivating.

Figure 5.1: Functions of metaphors in Multiple Sclerosis, diabetes, HIV/AIDS and influenza and cold



As can be seen from the different colours and sizes of the bars, the functions analysed are not equally distributed across the four medical conditions. Looking at the bars, what is apparent is the predominant role of the explanatory function (colour: green) in all the diseases.

5.1.1 The explanatory function

Metaphors are used above all to explain how our body works and how diseases affect patients both from a physical and psychological point of view. The percentages related to this function vary from a minimum of 38.16% in MS leaflets to a maximum of 73.81% in influenza and cold materials. These high percentages support the hypothesis, suggested by some scholars such as Periyakoil (2008) and Verghese[44], that in medicine metaphors are used to make familiar what is unfamiliar. In other words, metaphors act as mediators between physicians and patients, by simplifying difficult medical concepts and making them more comprehensible. Four extracts will be presented to illustrate the explanatory function of some metaphors. The first extract is about Multiple Sclerosis. The ways in which the central nervous system works and MS affects patients are described by making reference to the semantic field of journey/movement:

> *Think of your central nervous system as a pathway by which messages travel between your brain, spinal cord and other parts of your body. For instance, when you walk, messages must travel from your brain to your leg muscles. If that pathway becomes damaged, their journey may become slower, distorted or even blocked. That's what causes MS symptoms.*

As regards the nervous system, nerves are compared to pathways. The messages sent by the brain to nerves via the spinal cord are compared to travellers that move all around the body. In the second part of the metaphor, the effects of Multiple Sclerosis are compared to a tortuous journey that can also be interrupted: pathways (the nerves) are damaged by the disease, and messages cannot arrive at their destination.

In the second extract, about diabetes, the way in which Diabetes Type 1 affects patients' life is explained by making reference to a roller-coaster ride. That is, the unpredictable blood sugar levels are compared to the ups and down of this fairground attraction.

[44] http://www.tedmed.com/talks/show?id=292979 (last visited on 15/01/2017).

Many parents describe trying to manage Type 1 diabetes as a bit like a roller-coaster ride – sometimes your child's blood sugar levels are too high, sometimes too low, and sometimes just right.

The third extract is about the HIV virus. In the first part, the way in which the immune system works is described through war metaphors: it fights off invaders by activating defence strategies. When the HIV virus enters the body, the antibodies warn other cells about the presence of the "invading virus", in order to annihilate it.

Your immune system has many different ways of fighting off foreign invaders. […] First your body recognizes a foreign antigen and delivers it to the lymph system […]The antibodies attach to the antigens and hold on tight. These antibodies then send a signal to other macrophages and other immune cells to come and engulf and destroy the antibody and whatever it has captured.

In the fourth example, about seasonal influenza, the way in which this virus affects people is explained with terms related to the semantic field of journey/movement, e.g. the verbs "to spread" and "to be transferred". Furthermore, the "droplets that are coughed and sneezed out by an infected person" can be considered the means of transport of this virus.

These viruses can be spread through droplets that are coughed and sneezed out by an infected person. The viruses can also be transferred via a person's fingers or surfaces, such as door handles, if there are infected droplets on them.

5.1.2 The strengthening function

Metaphors with a strengthening function (colour: dark blue) are those which are used to emphasize the seriousness of a given disease. This function can be found in all the diseases under investigation. However, what stands out is its higher frequency in HIV and AIDS materials, as in these cases 33.33% of the metaphors highlight the seriousness of the HIV virus. In MS and diabetes materials, the percentages of occurrence are more or less halved (17.36% and 13.46% respectively), and in the influenza and cold materials the percentage of strengthening metaphors is very low (2.38%). The following four extracts are examples of strengthening metaphors taken from the four medical condition studied:

[…] We now have new evidence that when symptoms get better, the damage that MS causes often doesn't stop. Even when you're not having a relapse, MS may carry on attacking your body, leading to nerve damage that can't be put right.

Last year at age 60, I was diagnosed with Type 2 diabetes. Initially I reacted to the news as a death sentence […]

The experience of these fluctuating symptoms is a cause of real distress for some people living with HIV and creates significant barriers to work, daily living and social participation.

Flu symptoms can hit quite suddenly and severely.

In the first example about Multiple Sclerosis, the seriousness of this chronic disease is emphasized. Indeed, even when MS seems to be under control and patients do not experience annoying or painful symptoms, the disease is in fact causing permanent damage to the body. This way of affecting the body silently and secretly makes this chronic disease even more fearsome.

In the second example about diabetes, the strengthening function is represented by the reference to the semantic field of death, as comparing diabetes to a death sentence is a way of empowering the disease, destroying patients' hopes to survive this chronic condition.

In the third extract, the seriousness of the HIV virus is stressed. Not only does this virus cause physical pain and psychological stress, but it also prevents people from having a normal life in every aspect.

To conclude, the fourth example describes the outcome of seasonal influenza with terms which tend to describe a common and not dangerous disease as something alarming, e.g. with the verb "to hit" and the adverbs "suddenly" and "severely".

The higher frequency of strengthening metaphors in HIV and AIDS materials reflects the way in which the HIV infection is represented. It is described as an aggressive and destructive disease, which overwhelms patients. This result could depend, in part, on the way in which the HIV virus and the AIDS syndrome are perceived by society. People get the HIV virus mainly from behaviours which are regarded as immoral, and thus HIV patients are often harassed and ostracized. It could be assumed that this negative attitude toward HIV patients establishes a vicious circle, in which the disease and the stigma related to it can cause further sufferings, and do not help patients at all.

It is important to point out that this aggressive attitude towards AIDS seems to be more frequent in the American than in the British leaflets. To check this, I have added another filter to the Statistics function, with a view to checking whether strengthening

metaphors were equally distributed in the British and in the American materials. As Table 5.1 shows, the result is that the frequency of the strengthening function in the American data (26.82%) is higher than the frequency of the same function in the British data (14.88%), which confirms my initial hypothesis

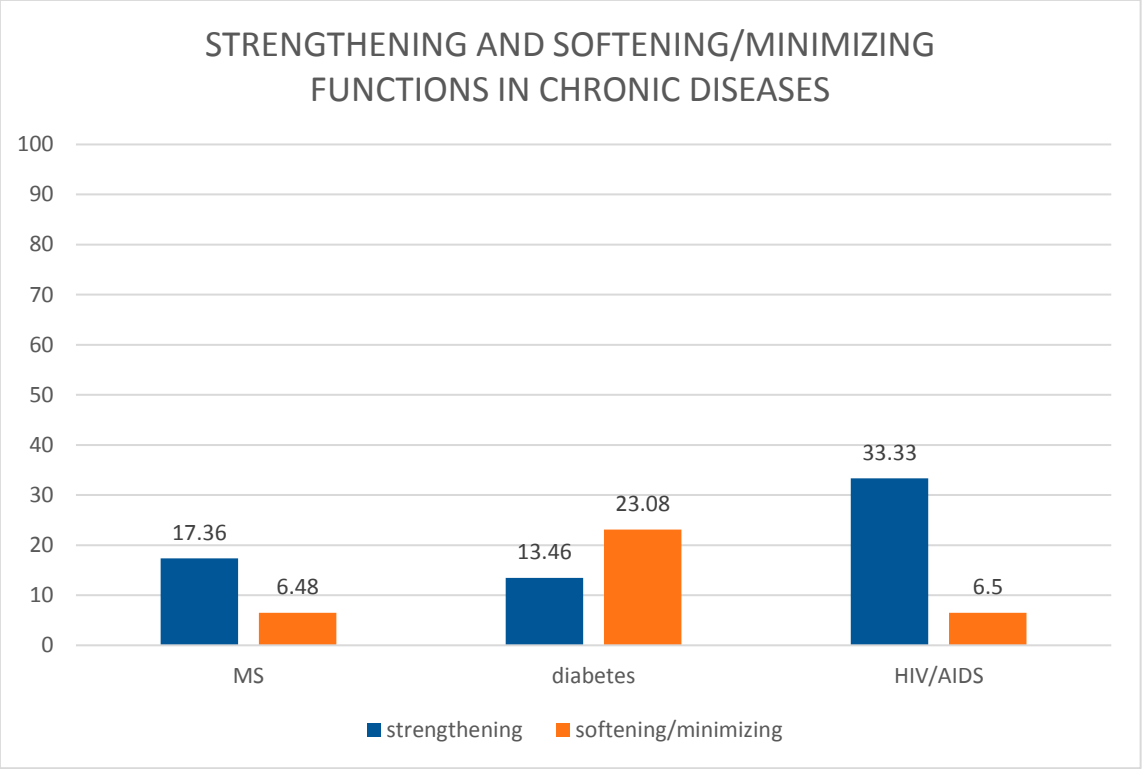
Table 5.1: Strengthening metaphors related to HIV in the British and in the American materials

	Strengthening metaphors about HIV
British materials	14.88%
American materials	26.82%

5.1.3 The softening/minimizing function

As regards metaphors that are used to soften or minimize diseases (colour: orange), interesting differences can be noticed in the four medical conditions analysed. This function is completely absent from the materials about influenza and common cold, which is very likely to be due to the fact that there is no need to soften medical conditions that are not commonly regarded as life threatening and that are usually short-term health problems. This function is represented by similar percentages in the MS and HIV/AIDS data (respectively 6.48% and 6.5%), while in the diabetes materials the softening function reaches 23.08%. This is surprising because, even though MS, HIV and diabetes are all chronic diseases, only diabetes is downplayed quite frequently. Focusing on the frequency of the strengthening and softening functions in chronic conditions, we can argue that there are important differences between MS and HIV and diabetes. For the sake of clarity, the occurrences of strengthening and softening/minimizing metaphors in chronic diseases are compared in Figure 5.2.

Figure 5.2: Comparison between strengthening and softening/minimizing functions in chronic diseases



As can be seen from Figure 5.2, in the MS and HIV data the percentages of use of the softening function are low and do not counterbalance the effect of strengthening metaphors. That is, metaphors that empower MS and HIV/AIDS are more common than those that downplay them. On the other hand, in the diabetes materials the softening function is more frequent than the strengthening one. It can be said that diabetes is dealt with adopting a "patient-oriented" approach. Indeed, the materials offer a positive view of this incurable condition to patients, soften its consequences and contribute to reducing anxiety and worries in people that have to cope with it.

The following examples show how metaphors are used to underplay diabetes:

Living with Type 1 diabetes is tough but with proper care can be a footnote in your life's story.

Nine years later, diabetes has come to be a part of me just like my hair, nose or anything else. It's just there. I am not limited by it.

Having Type 2 diabetes isn't a barrier to you working and achieving your potential.

In these examples, diabetes is described as a disease with only minor consequences to the patients' lives. In the first extract, it is compared to a footnote of the patient's story,

while in the second and third extracts it is clearly said that diabetes does not limit patients. Diabetes is not perceived as a barrier or an obstacle, but rather as a part of the patients, with which they "cohabit".

5.1.4 The encouraging function

The percentages of use of encouraging metaphors are almost equal in MS, diabetes, and in influenza and cold (12.47%, 13.46% and 14.29%). On the other hand, they are less recurrent (2.44%) in the HIV materials. The presence of encouraging metaphors in the MS and diabetes data is not so surprising. Indeed, the attempt to encourage patients to fight and not give up is justified by the fact that, when coping with chronic conditions, patients can easily feel hopeless and unmotivated.

An interesting comparison related to encouraging metaphors can be made between HIV and influenza and cold. The results concerning the use of encouraging metaphors in these different medical conditions run counter to our expectations. Indeed, in the texts about the HIV infection, encouraging metaphors are only 2.44%, while in easily curable conditions such as seasonal influenza and cold these metaphors reach 14.29%. This unexpected result about HIV is in fact in line with the general attitude prevailing in the leaflets about this virus, as they do not generally offer a positive and sympathetic view of the disease. Indeed, the HIV virus is described as a burden, an obstacle and an aggressive enemy (see Paragraph 4.3), all of which are not encouraging metaphors.

To understand the reason behind the high percentage of encouraging metaphors in influenza and cold materials, I looked into the features of the metaphors performing this function. These metaphors, which offer support to patients and encourage them to fight influenza or cold, are related to the pro-vaccine propaganda. That is, these leaflets tend to encourage patients to fight a relatively harmless disease and their real purpose is in fact to support flu-vaccine and underline that it is the only effective weapon to prevent influenza and reduce its annoying symptoms. An example of this phenomenon can be seen in the sticker included in Appendix 2:

> *Fight the flu*
>
> *Protect yourself, protect others—get a flu vaccine every year.*

Other examples in which professionals encourage patients to fight influenza by getting vaccinated are the following:

CDC Says: "Take 3 Actions to Fight the Flu" […]

CDC urges you to take the following actions to protect yourself and others from influenza (the flu):

Take time to get a flu vaccine. […] CDC recommends a yearly flu vaccine as the first and most important step in protecting against flu viruses.

To help slow the spread of influenza (flu), the first line of defense is getting vaccinated.

5.1.5 Metaphors used to name or describe body parts

In MS and in influenza and cold leaflets, some metaphors are used to name and/or describe body parts (colour: light blue). For example, in the MS materials, the expression *myelin coating*, which is a synonym for myelin sheath, is used to refer to the protective coating we have around our nerves. The term *coating* is drawn from the semantic field of clothes, and is used because this substance protects the nerves in the same way as a coat protects our body. Other metaphors are borrowed from the semantic field that can be labelled as "house", such as *bowel, bladder wall* and *pelvic floor muscles*. They are used to name body parts. In influenza and cold materials, the metaphorical expressions used to name anatomical parts are also *eardrum,* clearly related to the semantic field of music, *Adam's apple,* drawn from the semantic field of food, and *voice-box,* from the semantic field of common objects.

5.1.6 Metaphors used to describe pain

The metaphors used to describe pain and painful sensations (colour: pink) are very common in MS (13.73%), less frequent in diabetes and in the HIV infection (5.77% and 4.07%), and completely absent from the influenza and cold materials. I would like to focus on chronic diseases, making a clarification on these percentages as they could lead to wrong conclusions. Since these metaphors are more common in MS, it could be assumed that MS is more painful and that in this case the pain is more articulated than in diabetes and HIV. However, pain is also described literally in the materials and not only metaphorically, and plain descriptions have not been counted.

For my analysis, I took into consideration conventional metaphors related to the semantic field of CAUSE OF PHYSICAL PAIN (see Paragraph 4.5) and unconventional metaphors, such as the following:

Nerve pain can be a bummer, it creeps up sometimes when you least expect it - how can you sit in the cinema or theatre and enjoy a performance and at the same time stifle the scream when a red hot poker is stuck in your lower limbs?

Some people describe this sensation as like wearing a tight corset.

It hurts to walk. It feels like a huge ball pressing against the heel of my foot.

On the other hand, I did not take into consideration expressions such as *chest pain* or *joint pain*, because they are not used metaphorically, but simply locate pain in a given part of the body. Therefore, the only deduction that can be made is that in the materials analysed metaphorical expressions about pain are more frequent in MS than in the other medical conditions, but not that MS is more painful than diabetes and HIV.

5.1.7 Colouring metaphors

To conclude, Figure 5.1 also provides interesting information about the presence of "colouring" metaphors (colour: red), that is, metaphors that are used to make texts more vivid and engaging for readers. This function is not much exploited, though. 3.11% and 1.92% of occurrences can be found in the MS and in the diabetes data respectively, while it is completely absent in HIV and influenza and cold leaflets. These low percentages suggest that metaphors used in medicine are completely different from those used in literature, for instance, and to some extent in everyday language too. In medicine metaphors are hardly used to make language more "coloured" or texts more interesting for readers, while in literature, as seen in the Introduction, colouring metaphors are far more common. Clearly, in medical leaflets language is not used for aesthetic purposes, but for practical ones.

Even though the colouring function does not play an important role, I would like to give two examples of metaphors that are used to "colour" language and to create an interesting story for the readers. In an American leaflet, the history of the MS disease is described as a "detective story spanning more than a century". To make this story even more engaging, the typical elements of a detective story, i.e. mysteries, puzzles, suspects and culprits, are mentioned, as can be seen from the following examples:

The history of Multiple Sclerosis (MS) is a detective story spanning more than a century.

[…] The cause of MS is still its biggest mystery. How its other puzzles have been solved is a fascinating story. (AmE)

[…] At this time, scientists suspected that some form of toxin or poison caused MS.

[…] And myelin was further broken down into its components, isolating the basic protein suspected to be the target of the MS attack.

[…] A key culprit in MS is the white blood cell called a T cell.

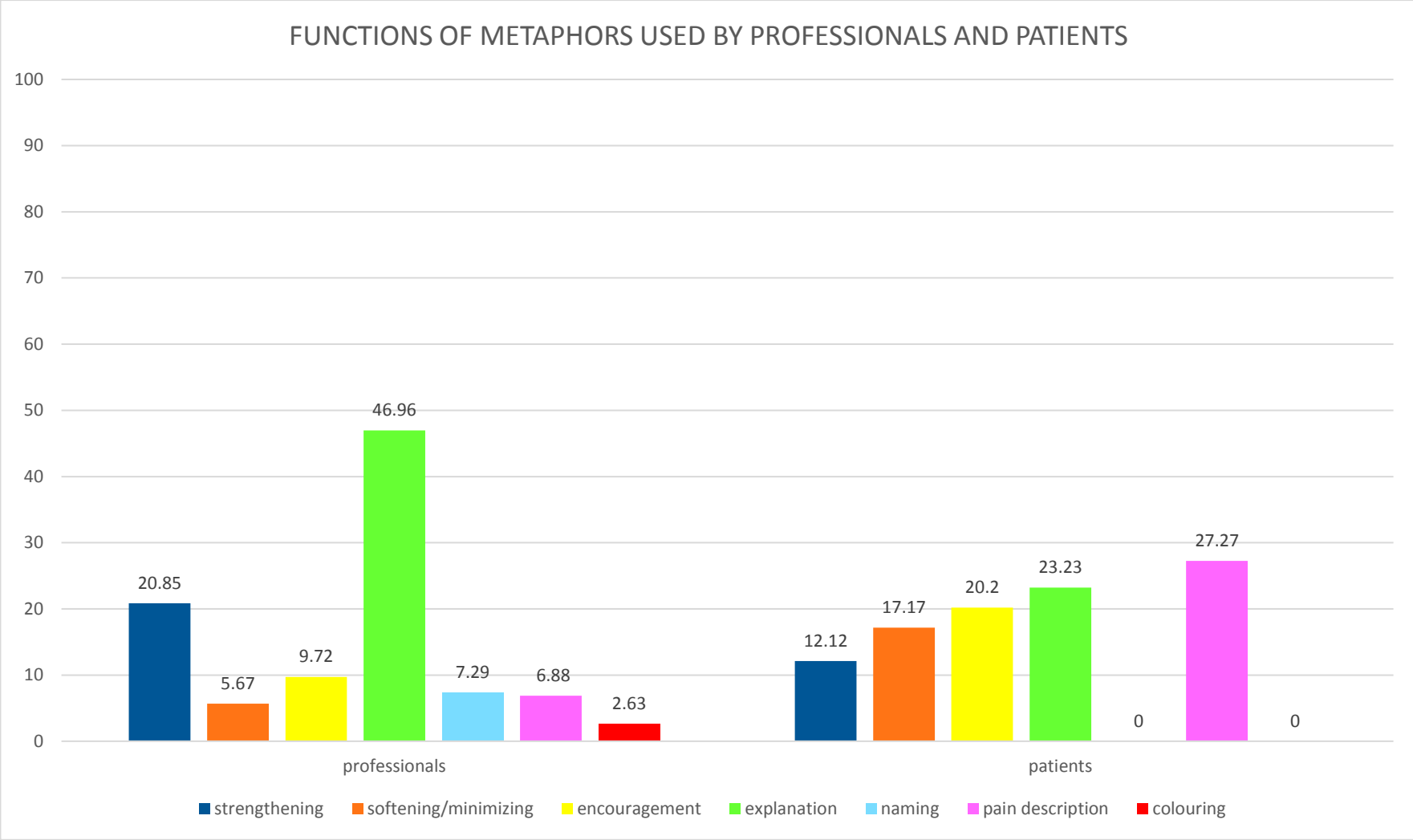
A simile, and not a metaphor, is also used to draw a comparison between diabetes and a baby, in order to make the text more memorable. Indeed, instead of simply defining diabetes as a demanding disease, it is compared to a child who needs attention:

"Like a baby, it wakes us up in the middle of the night, interrupts mealtimes, and forces us to carry special equipment around with us whenever we leave the house."

5.2 Analysis of the functions of metaphors in relation to professionals and patients

In this paragraph, I will investigate the semantic fields of metaphors and distinguish between those used by professionals and those by patients. This will enable me to study the different uses of metaphors made by professionals and patients, irrespective of the type of disease. As Figure 5.3 shows, these two groups of people use metaphors to reach different purposes.

Figure 5.3: Functions of metaphors used by professionals and patients



Looking at the left-hand side of the histogram, it can be seen that the most relevant function of metaphors used by professionals is the explanatory one (46.96%). This suggests that professionals are interested in simplifying their explanations. Indeed, as seen in Paragraph 5.1, metaphors are often used to explain to laypeople how the body works or how diseases affect it. In the following examples, some explanatory metaphors used by professionals are mentioned:

> *A carpenter can't work without proper tools, and some people with MS can't move about easily on their own without the proper tools.*

> *Like insulation on electrical wires, healthy myelin insures rapid transmission of nerve impulses.*

In the first example, professionals explain how MS affects patients focusing on movement disorders. In particular, tools such as walking sticks or crutches that can help MS patients with movement problems, are compared to the tools used by a carpenter. In the second example, healthy myelin, that is, myelin that works properly, is compared to "insulation on electrical wire", with a clear reference to electronics.

On the other hand, focusing on the right-hand side, the predominant function of the metaphors used by patients is pain description (27.27%). The explanation is that patients expect appropriate treatments from their doctors which can reduce pain and annoying physical or psychological sensations. Obviously, physicians administer treatments following specific medical guidelines, yet the way in which patients talk about the pain they feel can play an important role in the treatment of a given disease, because subjective sensations can only be understood through the descriptions provided by patients.

It is also interesting to see how strengthening and softening metaphors represent two opposite trends: strengthening metaphors are more frequently used by professionals (20.85%) than by patients (12.12%), while softening/minimizing ones are more recurrent in the metaphors used by patients (17.17%) than by professionals (5.67%). This shows that patients tend to downplay the seriousness of the diseases, possibly because they live with them and try to cope with them in an optimistic way. On the other hand, the attitude of the professionals seems to reinforce the seriousness of the disease, without taking into consideration the possible negative effects that this function can have on patients.

Another interesting difference can be noticed with regard to the yellow bars, which represent the encouraging function. It is apparent that the stories told by patients tend to offer support and relief (20.20%), while in the metaphors used by professionals this encouraging attitude is halved (9.72%). Patients know exactly what it means to live with a chronic disease, and thus try to establish an emotional bond with other people who have to cope with the same disease. On the other hand, physicians usually try to maintain a professional attitude and do not show any emotional involvement, that is they employ fewer encouraging metaphors.

Finally, metaphors used to name anatomical parts and to colour language are found only in metaphorical expressions used by the professionals (7.29% and 2.63%).

5.3 Analysis of semantic fields

In this paragraph, I will discuss quantitative results concerning the semantic fields of the metaphors. Given the high number of semantic fields taken into consideration, I analysed them separately, with the aim of providing a clearer representation of them and make comparisons between the four medical conditions. The 24 semantic fields are represented in Figures 5.4 to 5.6. The frequency of each semantic field, represented in the horizontal axis, is described through four bars related to the medical conditions analysed.

Figure 5.4: Semantic fields in Multiple Sclerosis, diabetes, HIV/AIDS and influenza and cold

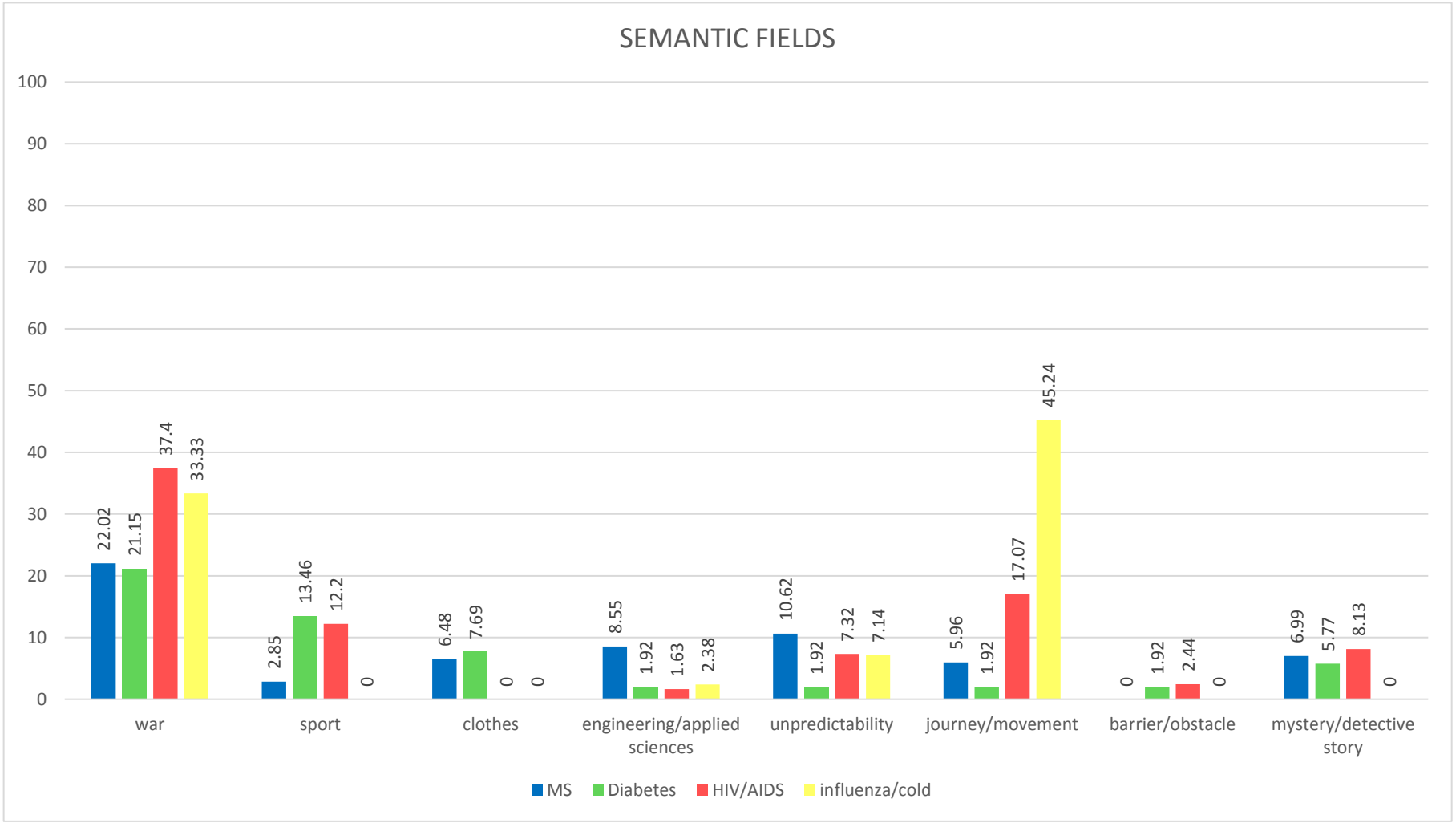
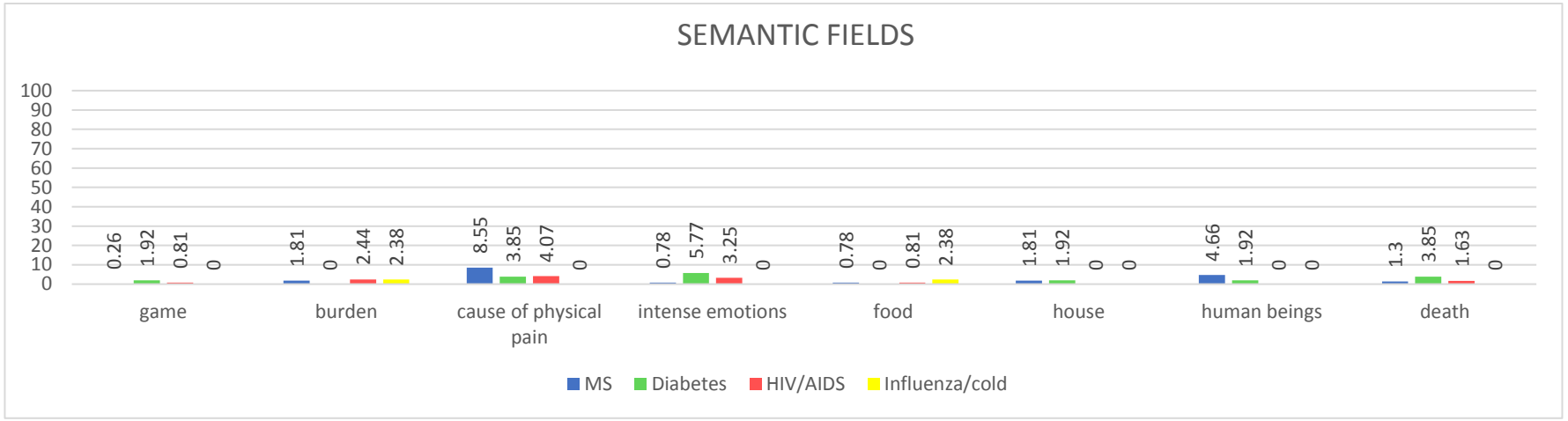
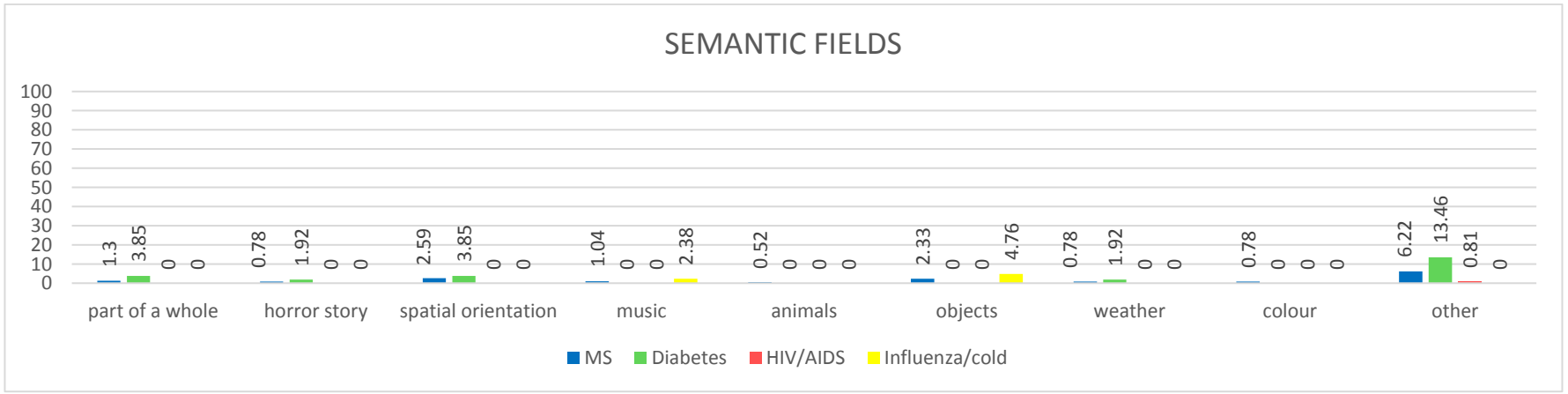


Figure 5.5 and Figure 5.6: Semantic fields in Multiple Sclerosis, diabetes, HIV/AIDS and influenza and cold





What stands out is the uneven distribution of the several semantic fields in the four diseases analysed. That is, some semantic fields are very common, while others are hardly ever at issue. Furthermore, chronic diseases present a more heterogeneous distribution of metaphors than short-term conditions like influenza and cold. MS appears to be the most heterogeneous disease, as all the 24 semantic fields taken into consideration can be found in the MS material, even though some of them are present in low percentages. As regards diabetes and HIV/AIDS, the number of semantic fields dealt with is respectively 19 and 14. On the other hand, only 8 semantic fields are present in influenza and cold materials, and almost 80% of the metaphors related to these short-term diseases are split between the semantic fields of war and journey/movement.

In the MS materials, the most relevant semantic field is war (22.02%). Metaphors that refer to war mainly refer to the daily battle of MS patients, who have to cope with a large number of painful sensations and physical and psychological barriers. Other semantic fields are also very common. For example, words belonging to the semantic field of unpredictability (10.62%) are used to describe the unpredictable symptoms and development of this disease. In the following examples, metaphors drawn from this semantic field can be seen:

> *Learning how to live with the unpredictable ups and downs of MS is a significant challenge.*
>
> *MS introduces uncertainty into everyday life. No one can predict how MS is going to behave from morning to afternoon, let alone from one month or year to the next.*
>
> *It's quite scary not to know what the future holds. I like to know what's going on in my life, but MS is so unpredictable. […] My partner has been amazing throughout this emotional rollercoaster.*

The same percentage of metaphors (8.55%) is also drawn from the semantic fields of engineering/applied sciences and that of the cause of physical pain. As regards the semantic field of engineering/applied science, metaphors are drawn from electrical engineering, electronics and hydraulics (see Paragraph 4.1.5). An example of a metaphor in the semantic field of cause of physical pain can be found in the following extracts:

> *Trigeminal neuralgia: an intense, sharp, stabbing facial pain.*
>
> *The pain that has been associated with MS includes burning sensations, headaches, eye pain, shooting pain in the limbs and sharp facial pain, among others.*

L'Hermitte's sign: a sudden, electric shock-like sensation, that spreads into the arms or legs […].

6.99% of the metaphors in the corpus are related to the semantic field of mystery/detective story, with reference to enigmas, culprits, and investigations (for the semantic field of mystery/detective story, see Paragraph 5.1). The semantic field of clothes (6.48%) is exemplified by the medical term *myelin coating*, which is the substance that wraps and protects nerve cells just like a coat (see also Paragraph 5.1). This semantic field is also represented by the verbs "to fit", "to tailor" and "to suit", which are used to talk about treatments. Indeed, the choice of the most appropriate treatments is often compared to the choice of garment: treatments have to be tailored to patients like a bespoke suit.

Finally, 4.66% of the metaphors make reference to the semantic field of human beings. MS is often compared to an uninvited guest who lives with patients night and day. In other examples, there are no explicit references to specific human beings, but the disease is associated with human characteristics. For instance, in a text MS is indirectly compared to a thief, because "it robs sleep":

It robs sleep, saps energy, dampens mood, and curbs appetite.

In the following two passages, reference to the semantic field of human beings is made through the use of the adjective "greedy", as greediness is generally associated with human beings:

The "uninvited guest" can sometimes get quite greedy, demanding more than its share of these resources, with the result that the needs and priorities of other family members may go unsatisfied.

A disease like MS can be very greedy — eating up more than its share of a couple's valuable resources, including money, emotional energy, and time.

In the diabetes materials war metaphors are quite commonly used to describe this disease (21.15%), as the following examples show:

Together we can fight diabetes and move forward with a healthy normal life, and continue praying for a cure!

Camp is about creating a welcoming experience for kids with diabetes […]. It gives them the life-changing opportunity to be understood by those going through the same fight.

However, these metaphors are also associated with expressions related to the semantic field of sport (13.46%), which represents the disease as a rival rather than as an aggressive enemy, as illustrated by the following extracts.

Your diabetes team will help explain what diabetes is and how it's treated.

I closely monitor my blood glucose, visit the doctor every other week and do not give in to late-night ice cream cravings. It is definitely a challenge, but I know that my health—and my growing baby boy's health—is well worth it.

5.77% represents the semantic field of intense emotions. As can be seen from the bars representing this semantic field, diabetes shows the higher percentage if compared with the other diseases. The main emotion related to this field is that of being shocked, and it associated with the moment of the diagnosis, such as in the following examples:

When your child is diagnosed with Type 1 diabetes, you're likely to find yourself dealing with a lot of new things at once. The fact that your child has diabetes may have come as a complete shock […]

Being newly diagnosed with Type 2 diabetes – a serious lifelong condition – can come as a shock, especially if you didn't feel ill or have any symptoms.

The most important semantic field in the HIV/AIDS materials is that of war. HIV is the medical condition in which this semantic field is more common (37.40%). This result is coherent with the description of HIV, which is portrayed as very aggressive and as a potentially deadly virus. A large number of metaphors are also related to the semantic field of sport (12.20%) and journey/movement (17.07%). The semantic field of journey/movement is important in leaflets about HIV because of the nature of this infection. Indeed, it is caused by a virus which is contagious and can "travel" from a person to another. The following examples are about these semantic fields. The first two are related to sport, while the third and the fourth to journey/movement.

Living with HIV presents certain challenges, no matter what your age.

The existence of HIV stigma and its impact is widely recognised but concrete strategies for tackling it remain elusive.

HIV uses the machinery of the CD4 cells to multiply (make copies of itself) and spread throughout the body.

HIV is an infectious disease that does not respect local government boundaries and so national leadership to complement local knowledge and expertise is essential; as a national epidemic HIV needs to be addressed nationally.

Other significant percentages are those related to the semantic field of mystery /detective story (8.13%), unpredictability (7.32%) and cause of physical pain (4.07%). One example for each of them is given below:

Approximately a quarter of people living with HIV do not know they have the virus and there is clear evidence that the majority of new transmissions come from people who are themselves unaware of their HIV status.

Participants emphasised fluctuation both with regards to when symptoms are experienced, as well as variation in the severity of symptoms.

As a result of the neuropathy I experience permanent numbness as well as burning sensations, cramps in my feet lasting for hours, acute unpredictable stabbing pains in the soles of my feet and shooting pain up my legs.

Influenza and cold are mainly represented with reference to the semantic fields of war (33.33%) and journey/movement (45.24%). The high percentage of metaphors concerning journey/movement is, as in the case of HIV/AIDS, related to the fact that these diseases are caused by viruses that can be transmitted. Another interesting semantic field is that of unpredictability (7.14%), which refers to the fact that it is almost impossible to predict how seasonal influenza will develop and which strains of viruses will circulate. The following extracts are about the semantic fields of war, journey/movement and unpredictability respectively:

CDC recommends a three-step approach to fighting influenza (flu).

More than 200 viruses can cause the common cold, and infections can spread from person to person

The timing of flu is very unpredictable and can vary in different parts of the country and from season to season.

In Table 5.2, less common semantic fields are described with some examples taken from my corpus. These semantic fields are: game, barrier/obstacle, burden, part of a whole, horror story, spatial orientation, music, animals, objects, weather, colour, other.

Table 5.2: Less recurrent semantic fields with examples taken from my corpus

SEMANTIC FIELDS	EXAMPLES TAKEN FROM MY CORPUS
Game	Diabetes is a game-changer in life – no question. a mixture of snakes and ladders […]; Cluedo […]; Scrabble […]; and chess […]. Work, relationships, holidays ... everything becomes a lottery as to whether it can be completed.
Barrier/obstacle	The study also looked at how HIV had limited the respondents' working life. I quite often felt I'd 'hit a brick wall' when untreated […].
Burden	HIV stigma is an unjust and unacceptable burden on the lives of people with HIV. Having at least one friend or family member who knows what you're going through can ease the burden.
Part of a whole	MS is a significant part of me, but it is far from the most interesting part. It's just a facet. Although MS is now a part of your life, it isn't all or even the most important part.

Horror story	But mostly, we look a bit like zombies trying to get on with our day! It's been a living nightmare – my bladder has ruled my life.
Spatial orientation	"Sick" is out and "active" is in for people who compensate for disabilities with assistive devices. Everyone knows what it's like to be down in the dumps and not feel like doing much of anything.
Music	It's like a symphony orchestra without a conductor — everyone is playing his or her own tune, not necessarily in sync with anyone else. It's been a privilege to bang the drum for people affected by MS.
Animals	buzz-like sensation […] like ants under my skin or 'creepy crawlies'
Objects	the urethra – the tube through which urine empties from the bladder. the voice box ('larynx')

Weather	Occasionally I have vertigo as well… like a tornado in your head, extreme, lasts a few seconds or minutes. […] genetic factors and risk factors combine in some individuals to create "the perfect storm," causing MS to happen.
Colour	Feeling blue 'Black and white' or 'all or nothing' thinking: you think in terms of extremes – only good or bad – with nothing in between.
Food	The thalamus is a walnut-sized area situated deep within the brain. Heat makes many people feel like overcooked pasta.
House	The wall of the bowel Pelvic floor
Death	It's like your whole life has come to a stop and everything you expected for your future has been buried. Initially I reacted to the news as a death sentence.

Other	Living with Type 1 diabetes is tough but with proper care can be a footnote in your life's story. Like a pebble thrown into the water, the disease creates a ripple effect on all who are involved.

5.4 Analysis of conventional and unconventional metaphors used by professionals and patients

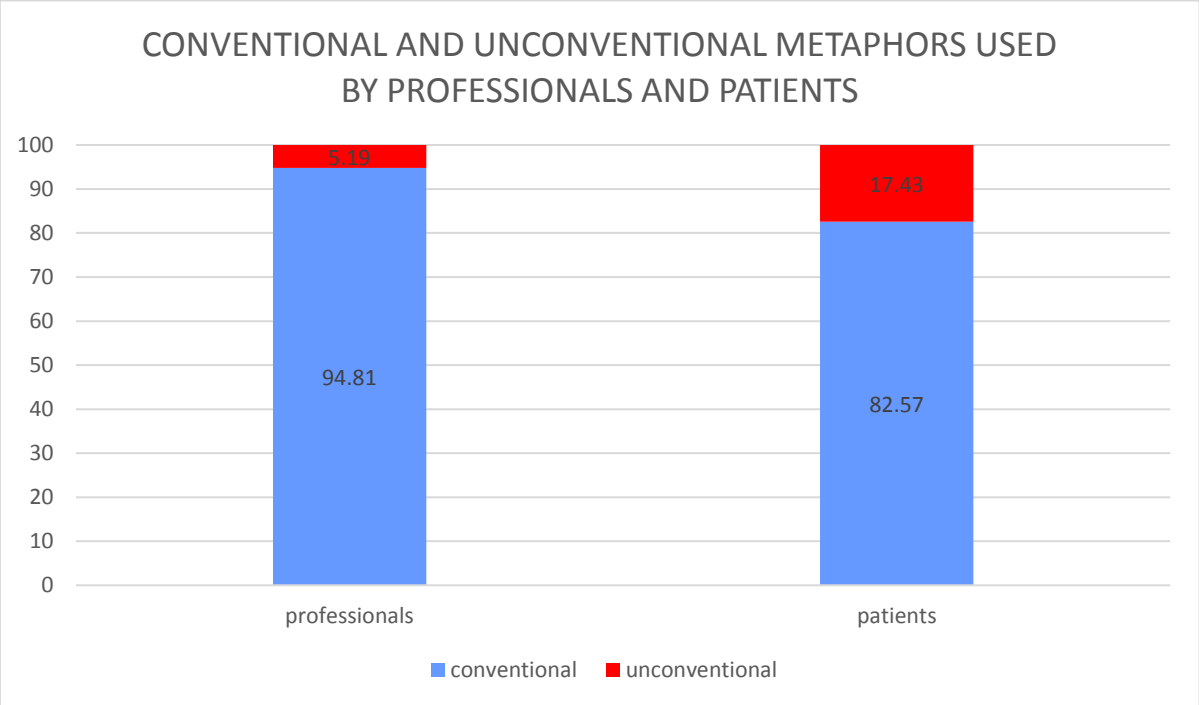
As seen in Chapter 3, the materials included in my corpus contain medical information texts written by doctors for medical organisations who address patients affected by specific diseases. Not only is this information written for patients, but also for their relatives, friends and caretakers. The addressees of these texts are, therefore, lay people who do not have a deep knowledge of medicine but who have to somehow cope with this science and its language. These materials often include quotations or short passages in which patients talk about their condition in first person. These parts are useful, because patients' stories support - and sometimes give examples of - what is said by the experts. However, despite the important role of these passages, they only represent small portions of the leaflets.

The possibility of retrieving standardized data about metaphors and distinguishing between those used by professionals and patients enabled me to analyse metaphors for their conventionality. To be precise, I have tried to verify if conventional and unconventional metaphors are equally distributed in these two groups of people. It was initially hypothesised that physicians, who have to maintain a professional attitude, mainly use "fixed" and codified expressions, relying very little on imagination. On the other hand, patients use language in a creative way, inventing new expressions to describe subjective feelings or sensations.

As said in Paragraph 3.3.1, I used the British National Corpus (BNC)[45] and the Corpus of Contemporary American English (COCA)[46] to decide whether a metaphor is conventional or unconventional. I also checked idiomatic expressions in the online versions of the Longman Dictionary of Contemporary English[47] and in the Macmillan Dictionary[48]

Figure 5.7 represents the distribution of conventional and unconventional metaphors in the professionals' and in the patients' materials.

Figure 5.7: Conventional and unconventional metaphors used by professionals and patients



A look at Figure 5.7 suggests that conventional metaphors (colour: blue) are used more frequently, both by the professionals and by the patients. However, the disparity between the use of conventional and unconventional metaphors is wider in the bar representing professionals. The unconventional metaphors used by professionals represent only 5.19% of all the metaphors, while the patients produced more of them, 17.43%. It can be argued that patients tend to use more unconventional expressions than professionals do, yet conventional metaphors are the most common type used by both.

[45] http://corpus.byu.edu/bnc/ (last visited on 23/01/2017).
[46] http://corpus.byu.edu/coca/ (last visited on 23/01/2017).
[47] http://www.ldoceonline.com/ (last visited on 16/01/2017).
[48] http://www.macmillandictionary.com/ (last visited on 16/01/2017).

This means that apart from using "fixed" expressions patients also use language in a creative way, that is inventing new expressions to talk about their feelings and symptoms.

The following extracts contain some conventional metaphors:

> *For many couples, MS becomes like a third wheel in their relationship […]*
>
> *This is your body's defence mechanism for fighting infections and illness.*
>
> *Being told that you have diabetes can be a real shock. And learning to live with it can be a challenge.*
>
> *If you're feeling down or people tell you they think you're depressed, see a mental health professional.*

By contrast, examples of creative uses of language are the following:

> *I am like a computer screensaver, you need to give my arm a little wiggle to wake me up again.*
>
> *Heat makes many people feel like overcooked pasta, and humidity can make the effects of heat worse.*
>
> *When I'm trying to explain my lack of energy to people, I sometimes use a 'mobile phone' analogy… I say that whilst everyone else is a mobile phone on a contract with unlimited minutes, I am a pay and go phone, with only £1 credit each day. Whilst they can chat all day everyday, I can either send a few small text messages, or make one long phone call, but then I have to stop until I hopefully get 'topped up' the next day.*

5.5 Analysis of war metaphors and their effects on patients

In this paragraph, I will focus on war metaphors, already introduced in Paragraph 2.2.1. As we have seen, they are one of the most common types of metaphors used in medicine. A large number of scholars, such as Sontag (1989), Tajer (2012) and Hauser and Schwarz (2015), have investigated these metaphors and claimed that they are harmful to patients. As Semino et al. (2015 and 2016) stress, however, it is not fair to generalize and consider all war metaphors harmful and dangerous (see Paragraph 2.2.1). As a consequence, Semino et al. (2015) argue that a distinction should be made between two types of war metaphors: empowering and disempowering metaphors. Adopting a patient-oriented approach, these authors claim that empowering metaphors are those metaphors that represent patients in a dominant position. On the other hand,

disempowering metaphors portray patients as vulnerable human beings, overwhelmed by the disease.

Two examples taken from Semino et al. (2015) should help make the difference between empowering and disempowering metaphors clearer. When a patient says that cancer is "attacking from inside and invading the body", war related terms are used to empower the disease and represent the patient as a vulnerable person in a passive position. On the other hand, if patients are described as fighters who are "winning a battle", they are portrayed as if they were in a dominant position and the disease as an inferior entity that can be kept under control.

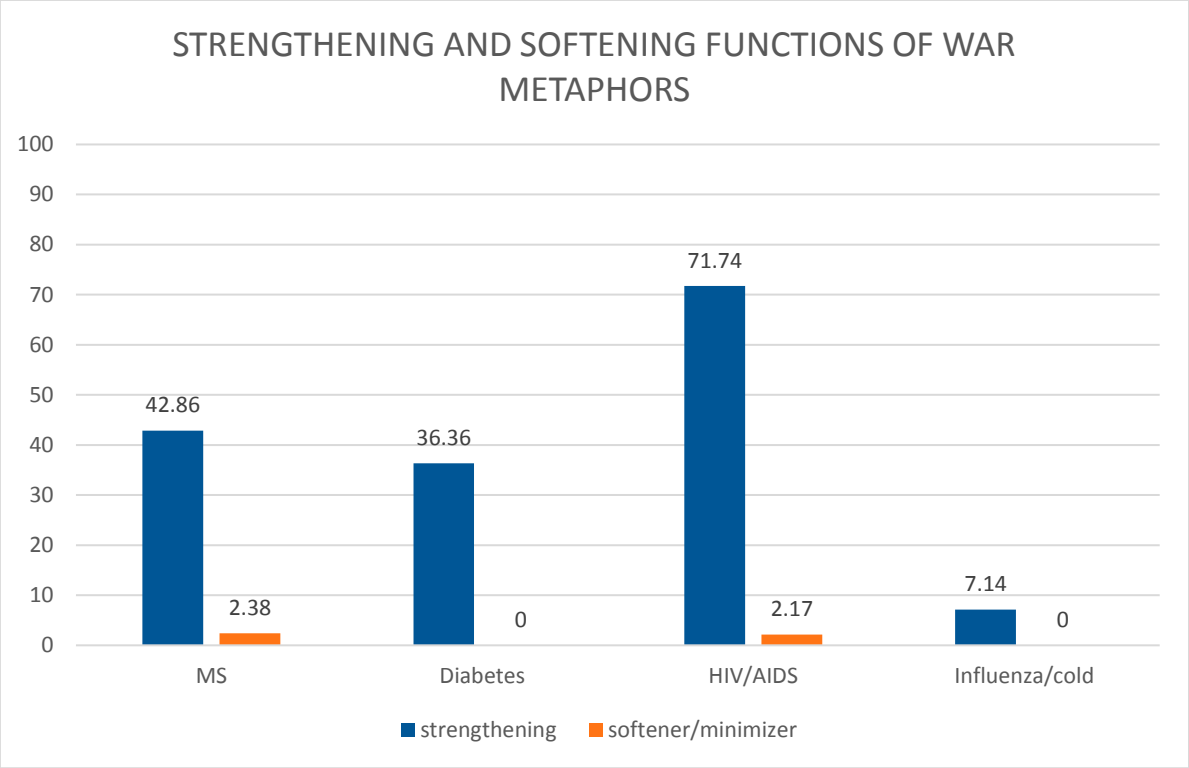
In order to delve more into the functions of metaphors, the war metaphors in my corpus were divided into those performing a strengthening function and those with a softening function. The distinction I draw is similar to Semino's description of metaphors. However, while Semino focuses on the patient, my strengthening and softening/minimizing metaphors are distinguished according to the diseases analysed, and so my categorisation is rather disease-oriented. My strengthening metaphors can be compared to Semino's disempowering metaphors, whereas my softening/minimizing metaphors broadly correspond to Semino's empowering metaphors. Indeed, it can be claimed that when a metaphor is used to reinforce the seriousness of a disease, at the same time it disempowers the patients, making their position weaker or ancillary. By contrast, my softening/minimizing metaphors, which downplay the disease, empower the patients, thus representing them in a dominant position. This parallelism can be seen in Table 5.3:

Table 5.3: Strengthening/softening and empowering/disempowering metaphors

My analysis Focus: disease	Semino's analysis Focus: patient	Examples taken from my corpus
Strengthening metaphors: - Disease in a dominant position - Patient in an inferior and vulnerable position	Disempowering metaphors: - Disease in a dominant position - Patient in an inferior and vulnerable position	HIV attacks the body's immune system, specifically the CD4 cells (T cells), which help the immune system fight off infections. […] Over time, HIV can destroy so many of these cells that the body can't fight off infections and disease.
Softening/minimizing metaphors: - Disease in an inferior position - Patient in a dominant position	Empowering metaphors: - Disease in an inferior position - Patient in a dominant position	HIV is no longer a death sentence and most people diagnosed today can expect to have long and healthy lives.

Figure 5.8 provides a representation of the distribution of war metaphors subdivided according to their strengthening and softening function.

Figure 5.8: Strengthening and softening functions of war metaphors



A disparity can be noticed in Figure 5.8 between war metaphors that are used to strengthen and those used to soften diseases across all disease types. As Semino et al. stress, war metaphors can have both positive and negative effects on patients, as the bars in different colours show. As can be seen, strengthening war metaphors are far more common than softening ones. Therefore, it can be argued that in the materials I have analysed patients are nearly always represented as defenceless human beings at the mercy of destructive diseases. This can be observed in the following examples:

> *In MS, the body's immune system turns against itself and, instead of fighting off infection, starts attacking the myelin coating surrounding the nerve fibres in the brain and spinal cord. […] The brain has some natural ability to repair myelin, but with repeated attacks, myelin can no longer regrow. As it gets more damaged – a process known as demyelination – the nerve fibres (axons) are exposed. Over time, they begin to die off.*
>
> *Exhaustion and fatigue are a constant daily battle.*
>
> *Having diabetes forced me to make lifestyle changes – what I eat, how active I am, managing stress. However, the threat of the extreme downfalls weighs on my mind. Amputation, slow healing wounds, blindness – these are all things that can come without managing the disease.*

There is increased consensus about the appropriate terminology to use when reporting on HIV: […]

- AIDS 'timebomb'

- A person is HIV

- A(n) (HIV or AIDS)

- victim/sufferer

In the first example, the superiority of MS is stressed. MS is described as an aggressive disease that makes the immune system attack itself. Serious consequences, such as demyelination and death of nerve fibres, are caused by the disease, and patients can only accept these irreversible changes.

In the second extract, two symptoms related to chronic diseases, i.e. exhaustion and fatigue, are defined "a constant daily battle". This expression disempowers patients, who are always under attack and constantly have to cope with distressing symptoms.

In the third example, the superior position of diabetes is described by a patient, who is completely controlled by this disease, Because of this he had change many things in his life. Furthermore, as in the second example, the patient is always under attack, and he feels threatened by the disease.

Finally, the last example is about some labels that are used to talk about HIV patients. Comparing a patient affected by the HIV virus to a time bomb or a victim stresses his/her extremely vulnerable position, which becomes even weaker when the label "A person is HIV" is used. Using this label equals to identifying the patient with his/her disease, which could cause frustration and make the patient feel completely overwhelmed by a disease that has taken possession of the his/her body and mind.

Conclusions

The present study has investigated the use of metaphors in Medical Condition Leaflets addressed to patients and other people – patients' relatives, partners, friends or caretakers – who are not supposed to have a thorough knowledge of medicine. After identifying the metaphors in my corpus, I have tried to contextualise them, focusing on the potential effects they can have on patients. The total number of metaphors I have found in my 600,000-word-long corpus is 617.

This study has explored some research questions. First of all, I wanted to see if metaphors are pervasive in a specific type of scientific language, which is the language of medicine. Secondly, I was interested in analysing their function and see whether they are used as linguistic embellishments, as occurs in literature and, to some extent, in everyday language. In Chapters 4 and 5, I have demonstrated that metaphors are pervasive in Medical Condition Leaflets, that is a hybrid text type which shares some features with specialized texts but is targeted to lay people. An interesting finding that emerged is that metaphors are more common in the materials about chronic diseases than in those about common and short-term diseases, such as seasonal influenza.

I have also found out that metaphors used in medicine are, in contrast to what generally occurs in literature and everyday language, rarely used as embellishments. Indeed, the "colouring" function is not much exploited in medicine, while more practical functions seem to be at issue. The main function of the materials about all the diseases studied is the explanatory one. This means that metaphors are used to bridge the gap between experts and lay people, thus allowing the latter group to grasp complicated medical concepts. However, other functions have been identified. In particular, I have encountered metaphors that are used to strengthen the seriousness of a given disease and those which are used to downplay it. As can be seen from the quantitative results discussed in Chapter 5, professionals often use metaphors to emphasize the seriousness of chronic diseases. This prevailing attitude does not offer an encouraging view to patients, who are portrayed as powerless human beings at the mercy of aggressive diseases.

From my analysis it turned out that one of the most recurrent semantic fields from which metaphors are drawn is that of war. I have therefore decided to pay particular attention to war metaphors, which are sometimes also called military metaphors. Besides

identifying the metaphors belonging to the conceptual metaphors MEDICINE IS WAR and DISEASE IS AN ENEMY, I have studied the effects that these metaphors can have on patients, so as to verify whether they were useful or potentially harmful to patients. Physicians and scholars, indeed, have largely discussed the role of these metaphors, focusing on their effects on patients. Even though war metaphors are often used in oncology, I have found that they are not peculiar to texts about cancer. As my qualitative and quantitative analyses have shown, this semantic field is widely used in all the diseases considered. Not only are war metaphors used in leaflets about chronic diseases like Multiple Sclerosis, diabetes and HIV infection, but also in materials describing curable diseases, such as seasonal influenza and common cold. I have also focused on the function of war metaphors, to see if they were appropriate or could have negative effects on patients. Generally speaking, war metaphors aim at empowering the diseases studied, placing patients in a vulnerable and subordinate position.

The semantic field of war is just one of the 24 semantic fields that I have identified in the 617 metaphors analysed in my research. The large number of semantic fields explored is another difference between my bachelor's dissertation and the present work. In my previous study, I had looked for similes exploring only one semantic field: animals. By contrast, in the present work I have ended up focusing on a variety of semantic fields. Obviously, I did not decide *a priori* which semantic fields I was interested in. As I was analysing the texts with UAM Corpus Tool, I created a list of the semantic fields from which metaphors were drawn, and the list was regularly updated when new semantic fields were identified.

Furthermore, I have focused on the use made of metaphors by two different categories of people: professionals and patients. Even though both professionals and patients prefer conventional metaphors to unconventional ones, a higher number of unconventional metaphors used by patients have been observed. This finding suggests that lay people tend to use creative and innovative metaphorical expressions, while professionals prefer codified and fixed expressions.

As regards my research methodology, in this thesis I have achieved a goal I set in the conclusion of my bachelor's dissertation. Talking about the weaknesses of the method adopted to carry out my research, I wrote: "[…] However, this method has some limitations: for example, it did not enable me to analyse metaphors, because software

such as KWIC Concordance cannot automatically identify them in a text. Therefore, I think it would be interesting to analyse metaphors by using more sophisticated tools […]". This is exactly what I have done in the present dissertation: besides concordancing software, I have used another tool to collect and process the data: UAM Corpus Tool. Even though manual tagging has required time and effort on my part, it has allowed me to identify, categorise and quantify metaphors consistently and reliably.

The data obtained from the qualitative and quantitative analyses of my corpus provide interesting information on the way in which professionals address lay people. The results obtained show that metaphors are, without a shadow of a doubt, powerful linguistic tools that can facilitate communication between experts and non-experts. The high number of explanatory metaphors suggest that physicians, nurses and other specialists use metaphors to get closer to patients. Metaphors can, therefore, be considered as mediating strategies used between experts and non-experts. Their use simplifies technical and complex medical concepts by making reference to everyday experiences, which are familiar to patients. However, if not used appropriately, metaphors can have negative effects on the patients, causing further distress. The large number of metaphors that are used to emphasize the seriousness of the diseases studied clearly shows that, at least in the leaflets analysed, specialists do not always adopt a patient-oriented approach. This attitude seems to go against one of the most important principles of medicine, "First, do no harm", which means that physicians should address patients without causing additional sufferings to them. For example, this principle has to be taken into consideration by doctors when they choose the most appropriate treatment for a given disease. When doctors they do so, they should weigh the benefits against the side effects, and then choose the most appropriate treatment for a given individual, that is, the treatment whose benefits are higher than side effects.

I firmly believe that in order not to harm patients, physicians should pay attention to the way in which they use metaphors. Words can indeed hurt more than actions do, above all if they are addressed to people who are trying to cope with a life-threatening and demanding disease.

I think that the results obtained from this analysis could be interesting to the medical community and could be useful to those organisations that aim at raising awareness of specific diseases and their treatment. Indeed, I believe that the analysis presented in this

dissertation should be considered by organisations that are in charge of publishing medical information for lay people. In my opinion, they should take into consideration the consequences of the use of metaphorical expressions before publishing materials for patients. Furthermore, doctors, practitioners and patients should be interviewed, in the attempt to gain further information about the metaphors analysed in this work. In this way, negative consequences caused by inappropriate uses of metaphors could be prevented, with more benefits for patients.

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Sitography

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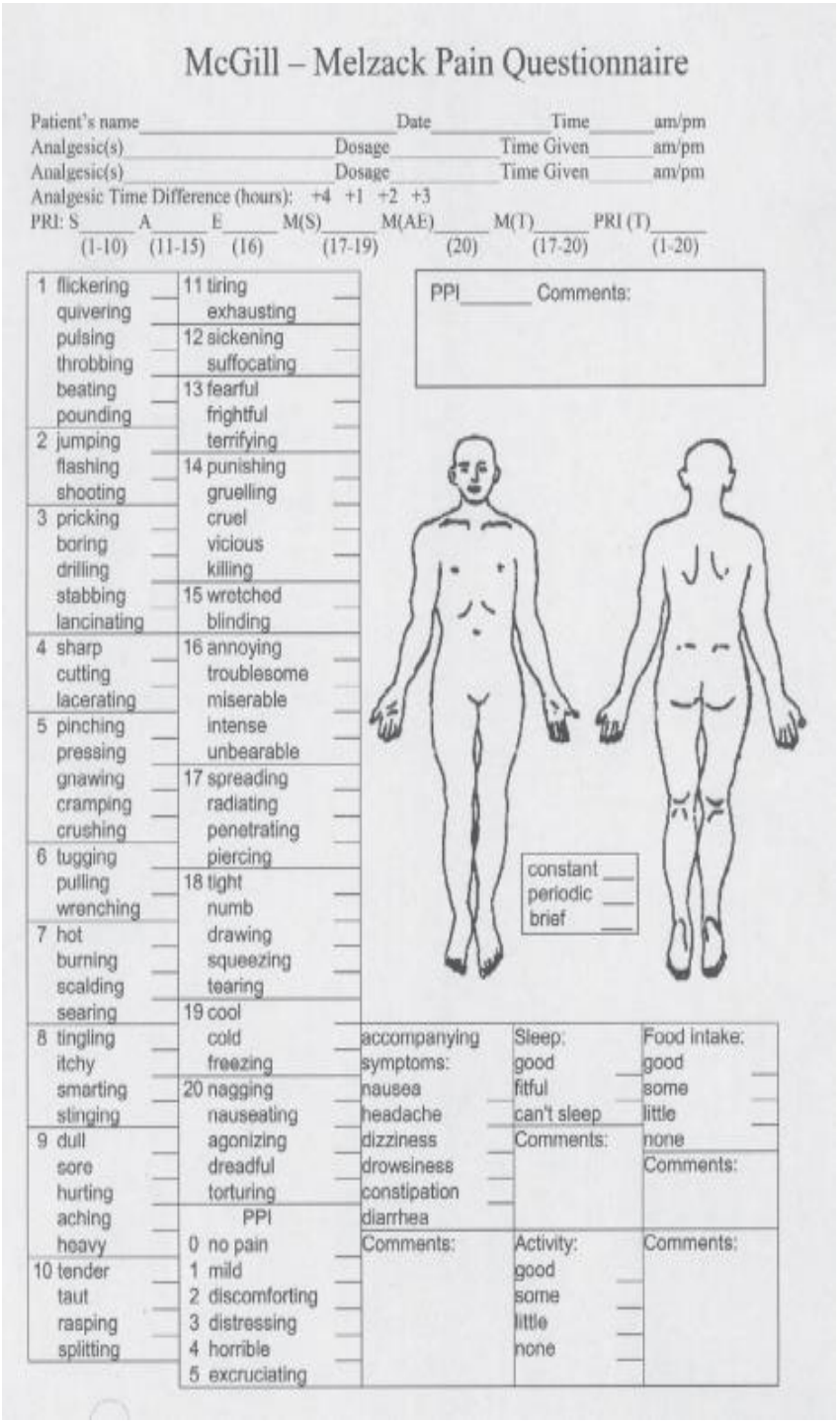
Appendices

Appendix 1: The Mc Gill Pain Questionnaire (MPQ)



McGill – Melzack Pain Questionnaire

Patient's name _____ Date _____ Time _____ am/pm
Analgesic(s) _____ Dosage _____ Time Given _____ am/pm
Analgesic(s) _____ Dosage _____ Time Given _____ am/pm
Analgesic Time Difference (hours): +4 +1 +2 +3
PRI: S _____ A _____ E _____ M(S) _____ M(AE) _____ M(T) _____ PRI (T) _____
(1-10) (11-15) (16) (17-19) (20) (17-20) (1-20)

1 flickering	11 tiring	
quivering	exhausting	
pulsing	12 sickening	
throbbing	suffocating	
beating	13 fearful	
pounding	frightful	
2 jumping	terrifying	
flashing	14 punishing	
shooting	gruelling	
3 pricking	cruel	
boring	vicious	
drilling	killing	
stabbing	15 wretched	
lancinating	blinding	
4 sharp	16 annoying	
cutting	troublesome	
lacerating	miserable	
5 pinching	intense	
pressing	unbearable	
gnawing	17 spreading	
cramping	radiating	
crushing	penetrating	
6 tugging	piercing	
pulling	18 tight	
wrenching	numb	
7 hot	drawing	
burning	squeezing	
scalding	tearing	
searing	19 cool	
8 tingling	cold	
itchy	freezing	
smarting	20 nagging	
stinging	nauseating	
9 dull	agonizing	
sore	dreadful	
hurting	torturing	
aching	PPI	
heavy	0 no pain	
10 tender	1 mild	
taut	2 discomforting	
rasping	3 distressing	
splitting	4 horrible	
	5 excruciating	

PPI _____ Comments:

constant
periodic
brief

accompanying symptoms:	Sleep:	Food intake:
nausea	good	good
headache	fitful	some
dizziness	can't sleep	little
drowsiness	Comments:	none
constipation		Comments:
diarrhea		
Comments:	Activity:	Comments:
	good	
	some	
	little	
	none	

Appendix 2: Sticker about seasonal influenza, taken from the Centers for Disease Control and Prevention (CDC) website

Ringraziamenti

Vorrei cogliere l'occasione per ringraziare:

La mia famiglia, che mi ha sempre sostenuta nelle mie scelte e con cui ho condiviso i traguardi raggiunti.

Fabio, che da ormai nove anni mi sta accanto. Grazie per avermi sempre supportata (e sopportata) e per capirmi solo guardandomi negli occhi.

I miei amici, che mi hanno sempre incoraggiata e mi hanno offerto il loro supporto morale e tecnologico.

I professori, che con la loro passione hanno stimolato il mio interesse e mi hanno fatto scoprire nuovi mondi da esplorare.
Un ringraziamento speciale va al mio relatore, il Professor Castello, che mi ha accompagnata in questo percorso di crescita ricco di soddisfazioni.

Infine, ma non ultimi per importanza, i miei compagni di università, con cui ho condiviso l'ansia da esame ma soprattutto moltissime risate e momenti indimenticabili.

Riassunto

Questa tesi magistrale rappresenta il naturale proseguimento della ricerca che ho svolto per la stesura della mia tesi triennale. Il filo conduttore è il linguaggio figurato, in cui le parole perdono il loro significato letterale e assumono un significato del tutto nuovo, ricco di sfumature connotative. In questa tesi ho raggiunto degli obiettivi che mi ero prefissata nella conclusione della mia tesi triennale, soprattutto per quanto riguarda gli strumenti utilizzati per svolgere la mia analisi. Prima di presentare il lavoro svolto in questa tesi, ritengo utile riassumere brevemente il contenuto del mio precedente elaborato.

Nella tesi triennale ho analizzato le similitudini relative al campo semantico degli animali. Il punto di partenza della mia analisi è stato il romanzo *Kim*, scritto da Rudyard Kipling nel 1901. Mentre stavo leggendo questo libro per il mio esame di Letteratura Inglese, mi sono resa conto che Kipling faceva spesso riferimento al campo semantico degli animali per descrivere i personaggi del suo romanzo, sia quelli principali che quelli secondari. Ho deciso quindi di studiare sistematicamente queste figure retoriche utilizzando un software, AntConc, che mi ha permesso di individuare le similitudini presenti nel romanzo sfruttando la funzione KWIC (KeyWord In Context). Nello specifico, queste similitudini sono state individuate utilizzando le preposizioni "like" e "as" come parole chiave. Inserendo queste parole nella barra apposita, questo software fornisce una lista di risultati che contengono le parole ricercate. Una volta individuate le similitudini basate su nomi di animali, ho studiato la loro funzione. Da questa analisi è emerso che le similitudini presenti in *Kim* sono utilizzate per "abbellire" il linguaggio e rendere i personaggi più interessanti, associandoli a animali comuni, come il gatto e il cane, e più insoliti, come la cicogna e la donnola.

In un secondo momento, la mia analisi si è estesa alla lingua quotidiana, poiché mi incuriosiva scoprire se le similitudini usate da Kipling erano (e sono tutt'ora) usate nel linguaggio di tutti i giorni. Grazie all'utilizzo di due corpora, il British National Corpus (BNC) e il Corpus Of Contemporary American English (COCA), ho potuto verificare che, anche nel linguaggio quotidiano, le similitudini identificate in *Kim* sono utilizzate per rendere il linguaggio più vivace e interessante.

Questa tesi magistrale può essere considerata un approfondimento dettagliato della mia tesi triennale. Tuttavia, possono essere individuate numerose differenze. La differenza principale è legata al tipo di linguaggio studiato. In questa tesi mi sono confrontata con un linguaggio scientifico, quello della medicina. L'interesse verso il linguaggio medico è nato durante un corso che ho frequentato durante la mia Laurea Magistrale, Metodi Linguistici di Analisi dei Testi, durante il quale abbiamo analizzato le caratteristiche del linguaggio della medicina in varie tipologie testuali. Per approfondire l'utilizzo del linguaggio figurato in medicina, ho creato un mio corpus, che contiene più di mezzo milione di parole. I testi inclusi nel corpus sono opuscoli informativi pubblicati sui siti di organizzazioni inglesi e americane il cui scopo è sensibilizzare le persone su determinate malattie. Questi testi medici sono rivolti principalmente a pazienti o altre persone che non conoscono la medicina e il suo linguaggio in modo approfondito, e descrivono determinate patologie, prendendo in considerazione le loro cause, i loro sintomi, i possibili trattamenti e le eventuali complicazioni. Tuttavia, a parte informazioni di carattere puramente medico, in questi opuscoli si possono trovare anche delle testimonianze dei pazienti, in cui questi ultimi raccontano in prima persona come affrontano la loro malattia.

Per ottenere un corpus il più possibile eterogeneo, ho deciso di prendere in considerazione diverse malattie:

- tre malattie croniche, che non possono essere curate definitivamente ma solamente tenute sotto controllo: la Sclerosi Multipla, il Diabete, l'infezione da HIV e il suo ultimo stadio, l'AIDS;
- malattie comuni, generalmente non pericolose, per le quali esistono cure efficaci: l'influenza stagionale, il raffreddore e le infezioni che colpiscono il tratto respiratorio.

Negli opuscoli analizzati sono presenti alcune caratteristiche tipiche dei linguaggi specialistici, come l'utilizzo di termini tecnici, della forma passiva del verbo e della premodificazione. Dal punto di vista lessicale, il genere testuale che ho considerato presenta però delle eccezioni. Infatti, essendo gli opuscoli rivolti ad un pubblico che non ha una conoscenza approfondita del linguaggio della medicina, i termini o concetti medici sono spesso resi più accessibili ai lettori profani grazie all'utilizzo di sinonimi di uso comune e metafore.

Un'altra differenza importante riguarda la figura retorica studiata. Se la mia tesi triennale si focalizzava sulle similitudini, in questa tesi mi sono concentrata sulle metafore, anche se ho comunque preso in considerazione le similitudini "rintracciate" nel mio corpus. In più, ho deciso di svolgere un'analisi più dettagliata, senza pormi confini rappresentati dallo studio di uno specifico campo semantico. Infatti, prima di iniziare l'analisi, non ho deciso a priori quali campi semantici studiare. I vari campi semantici sono stati inseriti in una lista, che veniva aggiornata man mano che nuovi campi semantici venivano identificati nel mio corpus. In totale, ho individuato 24 campi semantici da cui sono state tratte le metafore studiate.

Prima di iniziare la mia ricerca, mi sono prefissata alcuni obiettivi da raggiungere. Il primo obiettivo era scoprire se il linguaggio figurato è presente anche nel genere testuale degli opuscoli informativi rivolti a persone non esperte di medicina, come i pazienti, i loro partner e familiari e i "caregiver", ossia coloro che assistono le persone malate. Un altro obiettivo che mi ero prefissata era studiare le metafore eventualmente rintracciate per capire se queste sono utilizzate per rendere il linguaggio più "colorato", come succede in letteratura e nel linguaggio di tutti i giorni.

Per quanto riguarda gli strumenti utilizzati, ho esaudito un desiderio espresso nella mia tesi triennale. Infatti, nella conclusione, affermavo di voler approfondire la ricerca svolta utilizzando software più sofisticati che mi permettessero di concentrarmi sulle metafore e diversi campi semantici. Ho utilizzato due software: AntConc, già utilizzato per la mia tesi triennale, e UAM Corpus Tool, un software del tutto nuovo per me. AntConc mi è servito per svolgere un'analisi preliminare e capire quali campi semantici erano presenti nei testi del mio corpus. Lo strumento che si è rivelato però fondamentale per la mia ricerca è stato UAM Corpus Tool, che permette di annotare i testi inclusi nel proprio corpus. In particolar modo, ogni metafora o similitudine individuata è stata "etichettata" sulla base della sua funzione, del campo semantico da cui è tratta, della malattia a cui si riferisce e della convenzionalità. Ho inoltre associato ad ogni metafora le etichette "BrE" e "AmE" per distinguere tra le metafore utilizzate negli opuscoli inglesi e quelle presenti negli opuscoli americani. Successivamente, utilizzando le funzioni "Search" e "Statistics" di UAM Corpus Tool, ho raccolto i dati necessari per svolgere un'analisi accurata, sia dal punto di vista qualitativo che quantitativo.

Durante la mia analisi, ho scoperto che le metafore presenti negli opuscoli del mio corpus sono raramente utilizzate come abbellimenti linguistici. Questo dipende dal fatto che il linguaggio medico, a differenza di quello letterario e, in una certa misura, di quello quotidiano, deve rispondere a delle esigenze pratiche ben precise. La funzione esplicativa è la più diffusa in tutte le malattie studiate; questo dipende dal fatto che le metafore vengono utilizzate come "ponte" tra gli specialisti e i profani, in quanto permettono di associare complessi concetti medici a esperienze quotidiane, che sono familiari anche a chi non se ne intende di medicina. Altre metafore sono utilizzate per enfatizzare o minimizzare la gravità di una determinata malattia, producendo effetti opposti nei pazienti. In altre parole, quando una metafora sottolinea la gravità di una malattia, "indebolisce" il paziente, rappresentandolo come una persona vulnerabile e indifesa; al contrario, quando la gravità di una malattia viene minimizzata, il paziente viene rappresentato in una posizione di superiorità. Ho inoltre identificato metafore che vengono utilizzate per incoraggiare i pazienti, per descrivere le diverse tipologie di dolore e per denominare parti del corpo.

In più, ho suddiviso le metafore in due categorie, convenzionali e non convenzionali. Dalla mia analisi quantitativa, è emerso che le metafore convenzionali, cioè quelle "tradizionali" e prive di originalità, sono le più diffuse. Ho però riscontrato una differenza interessante: gli esperti tendono ad utilizzare più metafore convenzionali di quanto non facciano i profani. Infatti, nelle testimonianze inserite negli opuscoli, ho trovato numerose metafore non convenzionali. Questo dato suggerisce che i pazienti tendono ad utilizzare il linguaggio in modo più creativo, soprattutto quando devono descrivere i loro sintomi. Si può supporre che questo fenomeno dipenda dal fatto che i pazienti non hanno a disposizione le conoscenze mediche sufficienti per comunicare con i medici, e per questo motivo riscontrano alcune difficoltà comunicative nel momento in cui devono descrivere sensazioni soggettive. Probabilmente per questo motivo, i pazienti ricorrono alla fantasia e inventano delle espressioni del tutto nuove. Al contrario, i dottori e il personale appartenente alla comunità medica preferiscono evitare metafore fantasiose e utilizzare espressioni tradizionali (e quindi più immediate da comprendere) per mantenere un comportamento professionale.

Per quanto riguarda i campi semantici presi in considerazione, il più frequente è quello della guerra. Molti studiosi e medici sottolineano che campo semantico è

ampiamente utilizzato in oncologia, poiché spesso si sente parlare della "lotta contro il cancro". Tuttavia, come emerge dalla mia analisi, il cancro non è l'unico nemico contro cui i pazienti devono lottare: metafore tratte dal campo semantico della guerra sono presenti sia nelle malattie croniche studiate, sia negli opuscoli riguardo l'influenza stagionale e il raffreddore. Visto l'importante ruolo che le metafore militari rivestono nel discorso medico, ho deciso di studiarle più approfonditamente, concentrandomi sugli effetti che queste possono avere sui pazienti. Dalla mia analisi qualitativa e quantitativa è emerso che la maggior parte delle metafore militari sono utilizzate a discapito dei pazienti, che vengono rappresentati come persone deboli e sopraffatte dalle malattie che li affliggono.

Penso che i dati raccolti in questa tesi possano rivelarsi utili per le organizzazioni il cui scopo è sensibilizzare e informare le persone su malattie croniche che non possono essere curate ma solamente tenute sotto controllo. Infatti, come dimostra questo lavoro di tesi, molte metafore, in primis quelle relative al campo semantico della guerra, possono avere effetti negativi sui pazienti, che potrebbero sentirsi scoraggiati e incompresi. Considerando uno dei principi fondamentali della medicina, "In primo luogo, non nuocere", è chiaro che le persone che si rivolgono ai pazienti devono operare cercando di non causare ulteriori danni in persone che si trovano a convivere con malattie non curabili. Personalmente, credo che questo principio riguardi sia danni fisici, che per esempio possono essere causati da errori durante un'operazioni chirurgica, che danni morali, causati da un utilizzo inappropriato delle parole. Per cui, le organizzazioni che si occupano di scrivere opuscoli indirizzati ai profani dovrebbero, a mio parere, studiare attentamente il linguaggio utilizzato, per prevenire effetti negativi e apportare più benefici ai pazienti. Per ulteriori conferme sulla loro utilità e i loro possibili effetti, le metafore studiate in questa tesi potrebbero essere incluse in alcuni questionari da somministrare sia a medici che a pazienti.