91. Comprehensibility in translation of medical texts

Sevtap GÜNAY KÖPRÜLLU


Abstract

Medicine is a field that is being closely followed as a scientific field worldwide and in which there are continuous developments. Because it is a science that covers the necessary applications to prevent and treat diseases, as well as to protect and improve health. This field of science, whose history is as old as the history of humanity, has its own terminology, which comes from Greek and Latin. Therefore, the (difficult) comprehensibility of the medical language is one of the issues emphasized. Medical professionals know this terminology well and understand it easily. Lay people, however, may have difficulty understanding medical language. The (difficulty) level of language used in medical texts varies according to the target audience. If the target audience of the text is professionals, a language dominated by sophisticated medical terminology of Greek and Latin origin is used. The reason for this is that medical terminology facilitates communication, as it is a shared language worldwide. However, if the target audience of the text is lay people, people tend to use easier-to-understand language and more common medical terms and known to the public. This is because the text should be accurate and easy to understand. This should also be the aim of translations of medical texts. This present study analyzed the Turkish translations of German texts published on the website of an official institution and produced to inform the public about infectious diseases. Informative texts about 32 different diseases on the website were analyzed, and eight texts were selected as comprehensibility in translation. The study focused on medical terms and expressions that are unclear, misunderstood, or cause ambiguity in translation texts and investigated the causes of the clarity problem. As a result of the study, it was observed that the literal translation approach in the translation of medical texts in which equivalents in their own language replace medical terminology (i.e. national medical terms) since the target audience since the target audience is lay people, leads to the emergence of 'comprehensibility' problems.

Keywords: Medical language, medical text, medical translation, comprehensibility in translation, literal translation

Tıp metinleri çevirisinde anlaşılılık

Öz

Tıp alanı, bir bilim alanı olarak dünya genelinde yakından takip edilen ve sürekli gelişmelerin olduğu bir alanıdır. Zira hastalıkların önlenmesi, tedavi edilmesi ve sağlığın korunması, iyileştirilmiş için gerekli olan uygulamaları kapsayan bir bilim dalıdır. Tarihi, insanlık tarihi kadar eski olan bu bilim alanının, Grekçe ve Latince kökenli kendine has bir terminoloji bulunmaktadır. Dolayısıyla tıp dilinin (zor) anlaşılılığı, üzerinde durulan konulardan biridir. Meslekten olanlar bu terminolojiye hakindir ve kolaylıkla anlamaktadır. Ancak meslekten olmayan kişiler, tıp dilini anlamakta

1 Doç. Dr., Nevşehir Haç Belkâz Veli Üniversitesi, Eğitim Fakültesi, Yabancı Diller Eğitimi Bölümü (Nevşehir, Türkiye), sevtapkokulu@nevsehir.edu.tr, ORCID ID: 0000-0002-8841-355X [ Araştırma makalesi, Makale kaydı tarihi: 20.06.2023-kabul tarihi: 20.08.2023; DOI: 10.29000/rumelide.1342150]
1. Introduction

Medicine, which includes technical and scientific studies to cure, alleviate or prevent disease (TDK)⁹, is a field of specialty. Primarily focusing on the protection of health as well as curing people when they get ill, it is a field in constant development. Studies and developments in the field of medicine are closely followed around the world. The recent global pandemic has shown that health-related developments are closely followed by all parts of society. We were confronted with an unfamiliar pandemic as well as terms and concepts associated with it, and we needed to be informed. We saw the importance of translation in sharing information about health developments.

All over the world, it is important to inform the public about matters of health. To this end, countries’ health institutions strive to inform and raise public awareness through various media such as websites, printed publications, and informational videos. Since the general public is the target audience, the medical language is not a difficult language with a predominance of foreign medical terminology, but an easy-to-understand language. In this respect, the easy-to-understand characteristic of the source text should be preserved in translation.

Texts produced to achieve specific communicative goals in non-didactic contexts can be called ‘functional texts’ (Pander Maat/Steenhoud 1992: 2, cited in Nisbeth Jensen, 2015, p. 163). Such texts serve a functional purpose; the receiver receives information and acts on the information provided in the texts when necessary. The recipient needs to understand the text to translate the information into action, which is why texts need to be comprehensible in the best possible way (Nisbeth Jensen, 2015, p. 163). Maksymski (2015, pp. 26-27) also emphasizes the importance of comprehensibility, stating that the main function of translation can be seen as, first and foremost, creating comprehensibility and enabling communication that transcends language barriers.

dictionary of the Turkish Language Institution (TDK) https://sozluk.gov.tr/ (28.01.2023)
Whether written by experts for experts or for the general public, medical texts are content-oriented texts aiming to inform the recipient. For this reason, the content of the text should be communicated as truthfully and accurately as possible to the target language, and the content should be clear and easy to understand. This requirement is an indication of the importance of the nature, function and target audience of the source text. Comprehensibility is very important in translation.

Hansen-Schirra and Gutermuth (2015, p. 61), state that there are not enough studies on comprehensibility in translation and that it is quite difficult to identify comprehensibility as it systematically manifests itself in various ways.

This present study analyzed the translations of German texts produced to inform the population about infectious diseases. It investigated the reasons behind the issue of comprehensibility by focusing on expressions incomprehensible, misunderstood or that cause ambiguity in the translated texts.

2. Medical Language

Medical language is a phenomenon a certain portion of a population can understand easily, while it remains an inscrutable enigma to others. Medical language has its own terminology based on Greek and Latin. Professionals and specialists are familiar with this terminology and use it in communicating with each other. Lay people, on the other hand, may have difficulty understanding medical terms of Latin and Greek origin. For example, it is obvious that the medical expression “the patient was exitus because of hepatic insufficiency” is not easily understood by everyone. For this reason, physicians prefer vernacular terms instead of medical terms of foreign origin in communication with patients (or lay people). These are easier for the public to understand. For example, what is called “hepatic insufficiency” in medical terminology (in Latin) is “karaciğer yetmezliği” in Turkish, “Leberversagen” in German, and “liver failure” in English. Therefore, the medical expression “exitus due to hepatic insufficiency” will need to be expressed to the patient’s relatives as “death from liver failure”.

Medical terminology based on Greek and Latin is used worldwide through borrowing. These internationally used medical terms are adapted to the morphological structure and phonetic discourse of the languages of the nations. For example, the term “Hypertension” is translated borrowed into Turkish as “hipertansiyon” and into German as “Hypertonie”.

On the other hand, international medical terms can be used as ‘partial borrowing’ in the nations’ own languages. For example, the term “hypertension” is generally used as “yüksek tansiyon” [high tension] in Turkish. Even the general public is rather familiar with it. However, the terminological equivalent of the term in Turkish is “yüksek kan basıncı” [high blood pressure]. In English, the medical term “renal insufficiency” can either be “kidney failure”, a verbatim mirroring of its literal meaning, or “renal failure”, a partial borrowing of the medical term. The same is the case in German: The term “renale Insuffizienz” can be “Nierenversagen” as a purely German term or “Niereninsuffizienz” due to partial borrowing (Günay Köprüli, 2017, p. 254).

A medical term used in medical texts does not always have a terminological equivalent in the target language. For example, the term hemothorax should be translated in a descriptive fashion because this medical term has no corresponding terminological equivalent in Turkish. Therefore, the term hemothorax should be explained to laypersons as the “accumulation of blood in the lungs and chest wall”.

---

Whether written by experts for experts or for the general public, medical texts are content-oriented texts aiming to inform the recipient. For this reason, the content of the text should be communicated as truthfully and accurately as possible to the target language, and the content should be clear and easy to understand. This requirement is an indication of the importance of the nature, function and target audience of the source text. Comprehensibility is very important in translation.

Hansen-Schirra and Gutermuth (2015, p. 61), state that there are not enough studies on comprehensibility in translation and that it is quite difficult to identify comprehensibility as it systematically manifests itself in various ways.

This present study analyzed the translations of German texts produced to inform the population about infectious diseases. It investigated the reasons behind the issue of comprehensibility by focusing on expressions incomprehensible, misunderstood or that cause ambiguity in the translated texts.

2. Medical Language

Medical language is a phenomenon a certain portion of a population can understand easily, while it remains an inscrutable enigma to others. Medical language has its own terminology based on Greek and Latin. Professionals and specialists are familiar with this terminology and use it in communicating with each other. Lay people, on the other hand, may have difficulty understanding medical terms of Latin and Greek origin. For example, it is obvious that the medical expression “the patient was exitus because of hepatic insufficiency” is not easily understood by everyone. For this reason, physicians prefer vernacular terms instead of medical terms of foreign origin in communication with patients (or lay people). These are easier for the public to understand. For example, what is called “hepatic insufficiency” in medical terminology (in Latin) is “karaciğer yetmezliği” in Turkish, “Leberversagen” in German, and “liver failure” in English. Therefore, the medical expression “exitus due to hepatic insufficiency” will need to be expressed to the patient’s relatives as “death from liver failure”.

Medical terminology based on Greek and Latin is used worldwide through borrowing. These internationally used medical terms are adapted to the morphological structure and phonetic discourse of the languages of the nations. For example, the term “Hypertension” is translated borrowed into Turkish as “hipertansiyon” and into German as “Hypertonie”.

On the other hand, international medical terms can be used as ‘partial borrowing’ in the nations’ own languages. For example, the term “hypertension” is generally used as “yüksek tansiyon” [high tension] in Turkish. Even the general public is rather familiar with it. However, the terminological equivalent of the term in Turkish is “yüksek kan basıncı” [high blood pressure]. In English, the medical term “renal insufficiency” can either be “kidney failure”, a verbatim mirroring of its literal meaning, or “renal failure”, a partial borrowing of the medical term. The same is the case in German: The term “renale Insuffizienz” can be “Nierenversagen” as a purely German term or “Niereninsuffizienz” due to partial borrowing (Günay Köprüli, 2017, p. 254).

A medical term used in medical texts does not always have a terminological equivalent in the target language. For example, the term hemothorax should be translated in a descriptive fashion because this medical term has no corresponding terminological equivalent in Turkish. Therefore, the term hemothorax should be explained to laypersons as the “accumulation of blood in the lungs and chest wall”.

---
In a medical text, the use of the terms e.g. “consumption”, “high blood sugar”, and “heart attack” instead of “tuberculosis”, “hyperglycemia”, and “myocardial infarction” is related to the target audience of the text. If the text is written for medical professionals, a specialist language is used steeped in terminology of Latin and Greek origin, i.e. specialized terminology, while in a text intended for the general public, terms adapted to the target audience’s level of understanding are preferred. This is because the text should be understandable.

According to Hudson (1978), medical language is a technical language and can be divided into three sub-branches: high, medium and low technical language. High technical language is used in textbooks taught to medical students, medium technical language is used in congresses or prospectuses, and low technical language is used in health-related articles in newspapers or magazines (cited in Erten, 2016, p. 104).

In line with Hudson’s classification, Newmark (1988, p. 153) classifies technical language based on medical terminology as academic, professional, and popular. With the first, Latin and Greek terms are predominant; with the second, terms used by professionals; and in the third, the usual terms used by laypeople.

Medical terminology, generally based on the Latin and Greek languages, is used in medical books, congresses and lectures because it does not cause false connotations and gives the exact meaning. On the other hand, in today’s international use of medical terms, terminology of Latin and Greek origin as well as English has become quite popularized.

3. Medical Translation

Medical translation is one of the most important types of translation, dating back to antiquity. Although there is no specific theory for medical translation, contemporary goal-oriented theories emphasize that purpose-, function- and product-oriented translation methods should be used when creating translation texts (Erten, 2016, pp. 13-16).

How to proceed in the translation process depends on knowledge of the type, function, and target audience of the text to be translated. To do so, Reiß’s classification of types of texts is a good point of reference. Reiß aims to reflect the function of the source text in the target text by classifying texts according to their types and functions:

1. Informative texts: Content-focused oriented. They aim to inform the recipient. They require invariance in the transfer of their content. For example, news texts, course books, articles, reports, and technical texts.

2. Expressive texts: Form-focused. They aim to create an effect on the recipient. These texts, where the emphasis is on expression, require creative translation to preserve their aesthetic quality. For example, poems, stories, plays, novels.

3. Operative texts: Appeal-focused. They aim to persuade in order to trigger certain behaviors. They require adaptive translation to convey the content, organized in a persuasive way. For example propaganda, advertising, demagogy, commentary.

4. Multi-medial texts: Radio talks, song lyrics, advertising texts. For these types of texts, the translation depends on the characteristics of the source text. For example, scientific speeches should be short, effective and comprehensible, while advertising texts should be striking, intense, clear and pictorial (cited in Stolze, 1997, pp. 121-127).

Medical texts can have a multiplicity of purposes, e.g. health reports, analysis results, scientific articles and textbooks. The aim is to inform the target audience in congresses, lectures, scientific articles,
medical reports using international medical terminology or in brochures, news texts, newspaper publications prepared to inform the public using national medical terms ('popular term' by Newmark's (1988) classification). Medical texts are therefore informative texts. The aim of translating medical texts is therefore to transfer the given information completely and accurately into the target language. In doing so, it is important that the information is clearly understandable in the target language. According to Reiß's classification of text types, informative texts require a translation that is true to the meaning in order to maintain the consistency of the content.

Newmark divides translation into two categories: “semantic” and “communicative”. Semantic translation is source text oriented and focuses on the meaning of the source text and therefore aims to find an equivalent semantic content for the words in the source text. The communicative translation is concerned with the cultural adaptation of the source text to the target society. According to Newmark, semantic translation is suitable for expressive texts, while communicative translation is suitable for informative and vocative texts (cited in Yalçın 2015, p. 33).

“Communicative translation” endeavors to produce an effect on its readers as close as possible to that achieved on readers of the original text. "Semantic translation” endeavors to present the full contextual meaning of the original language, as far as the semantic and syntactic structures of the target language permit (Newmark 1988, cited in Prunč, 2002, p. 88). To illustrate Newmark’s two types of translation, we can look at the English translations of the following phrase used as a warning in German: Bissiger Hund! → Dog that bites! (semantic translation), / Beware of the dog! (communicative translation) (see Prunč, 2002, pp. 88-89)

According to Newmark (1979, p. 1405), the aim of the medical translator should be to create a target text that can provide the same cognitive impression that the source text creates on the reader. The primary aim of the translator is to remain faithful to the content of the source text, while the secondary aim is to create a natural and fluent text for the target audience.

As can be understood from the approaches to translation, there are two sides to (should) be faithful in the translation of medical texts. In addition to the need for the translation to be comprehensible, the language and content of the source text should also be taken into consideration. In this case, it is necessary to mention two types of translation approaches that have come to the fore in the history of translation.

In general terms, it is possible to categorize the various translation approaches that have emerged in the historical process of translation into “source-oriented” approaches, which aim to translate as faithfully as possible, and “target-oriented” approaches, which, contrary to this approach, demand freedom in translation. According to Gündüzalp (2008), when we remain faithful to the source text, we translate words, and when we remain faithful to the target language, we translate meaning (cited in Yalçın, 2015, p. 77). These two translation approaches, which can be described as “word-for-word translation” and “meaning-based translation”, are used to describe how the source text is handled in translation and how it is transferred to the target culture. Word-for-word translation is closer to the source text and culture, while meaning based translation is closer to the target culture (Tahir Gürcağlar, 2016, pp. 39-40).

Tahir Gürcağlar states that it is not possible to understand exactly what creative and faithful translation entails in conceptual terms. While fidelity in translation is defined as being faithful to the integrity of the source text and translating it completely, it is also defined as adhering to the author’s style, the
content or the formal characteristics of the source text. In addition to all these, there are also those who consider fidelity as being faithful to the effect of the source text on the readers or translating faithfully to the rules of the target language (see Tahir Görçeğer, 2016, pp. 40-41).

Jean-Paul Vinay and Jean Darbelnet (1995, pp. 30-42) propose translation strategies related to these two basic translation approaches. Vinay and Darbelnet divide translation strategies into “direct” (traduction directe) and “oblique” (traduction oblique) and under these two categories they propose seven translation strategies which they call “procedures”. Direct translation corresponds to literal translation. Borrowing, calque and literal translation strategies serve in the direct translation method, while transposition, modulation, equivalence and adaptation serve the oblique translation method.

As mentioned before, translations of medical texts should be comprehensible, and the information in the source text should be fully and accurately conveyed to the target language.

4. Comprehensibility in Translation

Maksymski (2015, p. 15) states that it can be assumed that the main goal of translation is to achieve functionally adequate communication by overcoming language barriers and thereby increasing (or creating?) comprehensibility.

Maksymski (2015, pp. 11-12) evaluates comprehensibility, which is related to “how easy a text can be comprehended” (Wolf, 2015, p. 34), from two perspectives: One is comprehensibility concerning the source text and the translator, and the other is comprehensibility concerning the target text and the readership. The degree of translatability of some terms in the source language may cause comprehensibility problems for the translator, as well as mistranslation if the translator fails to understand or misinterprets the meaning of the source text. On the other hand, comprehensibility plays a very important role for the target text and its audience. Unintelligible or unclear expressions in the target text may confuse the recipients and cause the translation to fail. Nisbeth Jensen (2015, p. 164), who advocates a functionalist approach to comprehensibility, argues that comprehensibility depends on the recipient of the target text.

Some studies have focused on what could be perceived as elements of comprehensibility, such as Baker’s (1996) notions of explicitation and simplification (Nisbeth Jensen, 2015, p. 165). “Explicitation means that translators tend to explain the implicit contents of the source text in their translations”; “Simplification means that translators tend to simplify texts (consciously or unconsciously) in order to increase the readability of their translations” (Hansen-Schirra and Gutermuth, 2015, pp. 54-55).

In order to ensure comprehensibility, the translator needs to choose the least complex and most comprehensible words or phrases. This is especially true for the translation of functional texts where the source texts are produced by experts (Nisbeth Jensen, 2015, p. 167). One of the main criteria for translating functional texts communicated to the masses is to provide the target language receiver, who is an ordinary person, with a text that is easy to understand (Nisbeth Jensen, 2015, p. 186).

As a result of the literature review, Nisbeth Jensen (2015, p. 175) mentions specialized terminology, compounds, officialise, nominalisation, passive voice, and synonymy as factors that make it difficult or easy to understand a text at the word and sentence levels. The researcher states that there are, of course, other factors besides these within the framework of comprehensibility and that these six factors she discusses in her study are the most frequently mentioned in the relevant literature (2015, p. 186).
Nisbeth Jensen (2015, pp. 184-185), who conducted research on comprehensibility in translation between English and Danish in medical texts, analyzed four elements such as officialese, nominalisation, passive voice, and synonymy, and found that while there were no comprehensibility problems in the source text, comprehensibility problems emerged in the translated texts. In the analysis of compound words and medical terms, she states that the problem of comprehensibility arises from the literal translation of the source text. Therefore, she states that translators should consciously avoid literal translation to ensure optimal comprehensibility in the interlingual translation of compound words and medical terms.

5. Methodology

Document analysis, one of the qualitative research types, was used in the study. In order to inform the public about pathogens, 32 brochures published on the official website on health in Germany were analyzed, and eight brochures, in which different exemplifications could be made within the scope of ‘comprehensibility in translation’, were included in the study. Since the target audience of the medical texts analyzed in the study is the general public, they are dominated not by Latin and Greek medical terminology but by national medical terms, which are their equivalent equivalents, and contain clear and easy-to-understand expressions. Therefore, the medical language in the source texts is easy to understand. From this point of view, this study focuses on the comprehensibility of the translated text. The reasons that make comprehensibility difficult in translation were tried to be identified.

The research focuses on comprehensibility in the target language rather than focusing on translation strategies used in translating medical texts. Turkish translations of German medical texts were the starting point. Examples of unintelligible, misunderstood or ambiguous translations in Turkish texts were used as the basis. The source and target texts were considered together and the factors that make comprehensibility difficult in the target language were researched. Not only medical terms but also expressions were analyzed while investigating the reasons for making comprehensibility difficult. In a few cases, English translations of the source text were also included, as it was necessary to compare them with English translations. The aim is to contribute to the field within the scope of ‘comprehensibility in translation’ by exemplifying the factors that make it difficult or prevent comprehensibility in the target language.

In this study, terms such as “varicella”, “hyperglycemia”, “myocardial infarction”, which are used in worldwide, are referred to as “international medical terms”, while terms such as “chickenpox”, “high blood sugar”, “heart attack”, which have equivalents in each nation’s own language, are referred to as “national medical terms”.

6. Examples and Analysis

The medical language used in medical texts prepared to inform the public is at a level that the target group can easily understand. In such texts, instead of using international medical terminologies, equivalents are used in the countries’ own languages. National medical terms bear traces of the linguistic and cultural characteristics of countries. For example, the disease called “parotitis epidemica” in international terminology is called “kabakulak” in Turkish, “Mumps” or “Ziegenpeter” in German, and “mumps” in English. Different factors can influence the naming of diseases: Depending on the route of

---

3 Medical texts published at https://www.infektionsschutz.de/erregersteckbriefe/ were examined. These texts are brochures prepared by the Center for Health Education to inform the public about pathogens. English translations of the German examples are also taken from this page.
transmission, the symptoms and the appearance of the disease. For example, in Turkish, “kabakulak”\(^4\) is called this way because of the shape of the ear due to the inflammation and swelling of the glands under the ear, i.e. the appearance of the disease. There may be cases where the translations of expressions referring to these features of the formation of the terms do not provide comprehensibility. There may be cases where the translations of expressions referring to these features of the formation of the terms do not provide comprehensibility.

Example 1: Windpocken – Suçategori – Chickenpox

<table>
<thead>
<tr>
<th>German</th>
<th>Der Name ist bezeichnend: Windpocken können selbst über einen großen Abstand durch den „Wind“ übertragen werden.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkish</td>
<td>İsimi ip ucu veriyor: Suçategori &quot;rüzgar&quot; yoluya büyük bir mesafeden bile bulaşabilir.</td>
</tr>
<tr>
<td>English</td>
<td>Chickenpox is known as “Windpocken” (wind pox) in German and the clue is in the name: the pathogens can be carried long distances &quot;by the wind&quot;; in other words, it is an airborne disease.</td>
</tr>
</tbody>
</table>

The translation text reads, “îsimi ip ucu veriyor: Suçategori “rüzgar” yoluya büyük bir mesafeden bile bulaşabilir” [the name gives a clue: Chickenpox can be transmitted by ‘wind’ even over a great distance] this is not comprehensible. So why is the expression incomprehensible, even though there is no translation error? The name “suçategori” does not give a clue that the disease is transmitted by wind. The infectious disease known as “varicella” in medical terminology is called “Windpocken” in German, “suçategori” in Turkish and “chickenpox” in English. In all three languages, the disease name is a compound word term. The reason why the disease is called “Windpocken” in German is that the virus that causes the disease is transmitted through the air, especially during the winter and fall seasons when there is a lot of wind. In Turkish, it is called “suçategori” because of the appearance of the disease, characterized by water-filled blisters on the patient’s body. The name of the disease called “Windpocken” in the source text contains information about the transmission routes of the disease. However, since it is called “suçategori” in Turkish, it does not give a clue that it is transmitted through the wind. So, the name gives not a clue in Turkish. Therefore, faithful translation of the source causes incomprehension in the target language. The sentence “Der Name ist bezeichnend”, which causes incomprehension, can be omitted in translation. This is possible because this does not lead to a loss of meaning due to missing content.

The translation attitude is closer to the source text and culture because, as Tahir Gürçülar (2016, p. 40) points out, word-for-word translation is closer to the source text and culture, while translation based on meaning is closer to the target culture.

When it is examined whether this problem experienced in the translation from German into Turkish is also present in the English translation, it is seen that a different approach is followed in the English translation, and additional information and an explanation are added to the translation regarding the German term: “Chickenpox is known as “Windpocken” (wind pox) in German”. Thus, the English text can be easily understood.

---

\(^4\) literally “coarse ear”
Example 2: Ringelröteln – Beşinci Hastalık – Ringel Rubella

German  
Mit Röteln haben Ringelröteln außer dem Namen nichts gemeinsam.

Turkish  
Bu hastalığın kizarlık hastalığı ile Alman dilindeki isim benzerliğini bir hica hiçbir ortak noktası yoktur.  

English  
Ringel rubella only share their name with rubella.

This example is similar to the first example. In German, the terms “Röteln” and “Ringelröteln” are similar. This similarity is also found in English: “Rubella” and “Ringel rubella”. However, the same similarity does not exist for their Turkish equivalents: “kizarlık” and “beşinci hastalik”. In the Turkish translation, the translation approach is faithful to the source text. This approach makes the sentence incomprehensible in the target language. In this example, it can be seen that the expression “Alman dilindeki” (in German) was added to the translation text although it was not in the source text. However, despite this, the translation of expression cannot be fully understood.

In a situation like the first and second examples, omitting this information in the source text and not translating it is a solution to eliminate incomprehensibility. However, since the target group of the translation is Turkish speakers in the source language country, it would be a better approach not to omit but to provide explanations to ensure comprehensibility. As Reiß (1983) points out, in the translation of informational texts, it is important to be concretely comprehensible in the target language. In order to achieve this comprehensibility, the translator may provide explanations or paraphrases, since contextual declarations are more important than formal language structures (as cited in Göktürk, 2016, p. 27).

Example 3: Die Frühsommer-Meningoenzephalitis (FSME) – Erken yaz menin-goncefaliat (FSME) – Tick-borne encephalitis (TBE).

German  
Die Frühsommer-Meningoenzephalitis (FSME) ist eine Entzündung des Gehirns und der Hirnhäute, die durch Viren hervorgerufen wird.

Turkish  
Erken yaz meningoensefalit (FSME) beyn ve beyn zararında virüsün yol açtığı bir ilılıplanmadır.

English  
Tick-borne encephalitis (TBE) is an inflammation of the brain and brain membranes that is caused by a virus.

The disease name “Frühsommer-Meningoenzephalitis” in the source text is called “kene kökenli ensefaliat” or “kene kaynaklı ensefaliat” in Turkish and is internationally known as “Tick-borne encephalitis (TBE)” in English. In German, the disease is named after the season in which it occurs and the effect it has on the body. In Turkish, the disease is named according to the causative agent and its effect on the body. In this example, it can be seen that the translation is not based on the usage of the disease in the target language (kene kökenli ensefaliat), but on a literal translation of the name in the source language (erken yazmeningoensefalit). The strategies of literal translation and borrowing mentioned by Vinay and Darbelnet within the scope of ‘direct translation’ were used. The acronym “FSME” was transferred to the target text through borrowing. Furthermore, Nisbeth Jensen (2015, p.

---

5 This disease has nothing in common with measles other than a similar name in German
6 Early summer meningoencephalitis (FSME) is an inflammation of the brain and brain membranes caused by viruses.
8 early summer meningoencephalitis
185) states that translators should consciously avoid literal translation to ensure optimal comprehensibility in translating compounds and medical terms.

The translation in this example should be considered from a different perspective than the previous examples. Considering that the target group is Turkish people living in Germany, direct quotation from the source text may be necessary to facilitate comprehensibility in translation. For example, while “FSME” is a widely known disease in Germany (there is even a vaccine with the same name), it is not as widely known in Turkey as it is in Germany. In addition, the acronym used in Turkey is “TBE”, which stands for the English initials of the disease. And it is highly unlikely that the general public knows the English version of the disease. Therefore, in translations for foreigners living in the source language country, the use of an acronym that is familiar to the people living in the country will facilitate comprehensibility. Therefore, a Turkish translation such as “kene kaynaklı ensefalit (FSME)” would be a better approach to facilitate comprehensibility for the target group. In this way, the Turkish equivalent of the disease will be used correctly, and at the same time, the acronym “FSME”, which is widely known to people living in Germany, will be used for clarity.

In relation to this example, it would be appropriate to consider Günay Köprülı’s (2017, p. 254) example about “AIDS”. The disease “Acquired Immune Deficiency Syndrome – AIDS” is translated into Turkish as “Edinilmiş Bağışıklık Eksikliği Sendromu” through word-for-word translation. However, the acronym has not been changed. The acronym used in Turkish is “AIDS”, not “EBES”. This is because “AIDS” is known by this acronym by the majority of the society in Turkey. To use “EBES” for an acronym with such widespread use means to eliminate comprehensibility.

Languages from different language families have grammatical differences such as syntax and sentence structure. Therefore, literal translations or word-for-word translations that do not conform to the linguistic features and syntax of the target language may negatively affect comprehensibility.

**Example 4: Borreliose – Borelyoz – Borreliosis**

<table>
<thead>
<tr>
<th>German</th>
<th>Die Erreger der Borreliose, auch Borrelien genannt, können durch einen Zeckenstich auf den Menschen übertragen werden.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkish</td>
<td>Borrelia olarak da bilinen borelyoz hastalığının patojenleri, kene sokmasıyla insanlara bulaşıbılır.</td>
</tr>
<tr>
<td>English</td>
<td>The pathogens that cause borreliosis, which are also known as borrelia, can be passed on to humans through a tick bite.</td>
</tr>
</tbody>
</table>

The phrase “Erreger der Borreliose, auch Borrelien genannt” in the source text is translated into Turkish as “Borrelia olarak da bilinen borelyoz hastalığı” [pathogens of borreliosis disease, also known as Borrelia]. What is known as Borrelia, Borreliosis disease or pathogens? In Turkish, this disease is known as “Borelyoz hastalığı” or “Lymne hastalığı”; “Borrelia” is the name of the bacteria transmitted by ticks, not the name of the disease. However, the translation implies that Borreliosis is also called “Borrelia”. Understanding a term that is not a disease name (Borrelia) as a disease name in translation causes misunderstanding. This is due to the grammatical and syntactical differences between the source and target languages. In German, the subordinate clause “auch Borrelien genannt” between two commas

---

9 In most German websites, it is seen that it is translated into Turkish as “erken yuz meninoensefalit (FSME)”. See: https://gesund.bund.de/tr/erken-yaz-meningoensefalit-fsme, https://www.dr-sezer.de/index.php/tr/sor-haberler/128-fsme-as-s.html

10 Although the disease is called “kene kaynaklı ensefalit” in Turkish, the acronym “KKE” is not used.

11 The pathogens of borreliosis diseases, also known as Borrelia, can be transmitted to humans by tick bites.
is additional information for “Erreger”, and “Erreger” forms a phrase with “Borreliose”. In the Turkish translation, a misunderstanding arises due to the order of these phrases in the source text. When the two phrases “pathogens also known as Borrelia” and “pathogens of borreliosis disease” are combined, the elements that qualify the noun “pathogens” come before the noun. Editing the sentence to read “Borelyoz hastalığının Borrelia olarak da bilinen patojenleri” solves the problem of misunderstanding.

In addition, the word “Zeckenstich” in the source text is translated verbatim into the target language as “kene sokması” [tick sting]. This literal translation results in incorrect language use in the target language. Because in Turkish, a tick bites, not stings. Therefore, it should be used as “kene ısrması” [tick bite].

Example 5: Adenoviren – Adenovirüsler – Adenoviruses

German Adenoviren werden auch über gemeinsam benutzte Waschlappen oder Handtücher weitergegeben sowie über gemeinsam benutzte Augentropfen, Augensalben oder Tropfpipetten.

Turkish Adeno virüsler ortak kullanılan banyo lifleri veya havlular ve ortak kullanılan göz damlaları, göz merhemleri veya damla pipetleri ile de aktarılabilirler.

English Adenoviruses are also passed on by shared washing rags or flannels, shared eye drops, eye salves or dripping pipettes.

The word “Tropfpipetten” in the German text has been translated into Turkish with a literal translation as “damla pipetleri” [drip pipettes] by adhering to the syntax of the word in the source language. However, there is no such noun phrase in Turkish. The medical equipment (dropper pipettes) referred to in the source text is called “pipet damlalıık” in Turkish. Literal translation, which is not appropriate for the linguistic use of the target language, leads to a lack of understanding of what is meant in the target language. In fact, Nisbeth Jensen (2015, p. 184) states that when translating compound nouns, the spelling rules of the target language “must be taken into consideration as a literal translation of these compounds is likely to make the target text less comprehensible.”

New meanings can be attributed to colloquial words to create terms. Attention should be paid when translating such medical terms. Especially when phrases consisting of two or more words are translated word-for-word into the target language, the problem of comprehensibility in the target language may arise. With such a translation approach, a new term or concept that is not used in the target language is created.

Example 6: Die Frühsommer-Meningoenzephalitis (FSME) - Erken yaz meningoensefalit (FSME) - Tick-borne encephalitis (TBE)

German Als Folgeschäden können geringere Belastbarkeit und Gefühlsschwankungen noch mehrere Monate anhalten.

Turkish Dolaşy rahatsızlık olarak düşük dayanıklılık ve duygusal dalgalanmalar aylar boyunca sürebilir.

English Complications can include paralysis, headaches, a general lack of resilience and mood swings, and may persist for several months.

The phrases “dolaşy rahatsızlık” and “düşük dayanıklılık” used in the Turkish translation make the text difficult to understand. In German, “Folgeschäden” is a concept mostly used in the field of insurance; in
the medical field, it is used for other ailments that develop due to a disease or damage. This term does not have an equivalent term in Turkish. For this reason, the use of an explanatory remark in the translation “hasiliga bağlı gelişen rahatsızlıklar” [ailments developing due to disease] will facilitate comprehensibility. The phrase “dolaylı rahatsızlık” in the translation does not have the same meaning as the expression in the source text. Likewise, the phrase “geringere Belastbarkeit” in the source text has been translated word-for-word into Turkish as “düşük dayanıklılık” [lower resilience]. The translation, in trying to be faithful to the word usage of the source text, leads to an unidiomatic expression not used in the target language. The meaning of the expression in the source text can be provided in the target language using the phrase “dayanma gücünün düşmesi” or “dayanma gücünün azalması”.

As inferred from the examples, word-for-word translation created terms or expressions that do not exist in the target language. As Erten (2016, p. 85) states, if a term used in the source language has no equivalent in the target language, it is recommended to use a descriptive term.

**Example 7: Die Frühsommer-Meningoenzephalitis (FSME) - Erken yaz meningoenzefalit (FSME) - Tick-borne encephalitis (TBE)**

<table>
<thead>
<tr>
<th>German</th>
<th>Auffbau des Impfschutzes sind 3 Impfungen erforderlich. Eine Auffrischimpfung sollte nach 3 Jahren erfolgen, falls das Ansteckungsrisiko weiter besteht. Die nachfolgenden Auffrischungen sind dann alle 5 Jahre erforderlich.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkish</td>
<td>Aşık korumasını yapılandırılmak için 3 kere aşık olmak gerekkdir. Bulaşma riski devam ediyorsa 3 yıl sonra tazeleme aşısı yapılmaklaştı. Bunu takip eden tazeleme aşlarının her 5 yılda bir yapılması gerekmektedir.</td>
</tr>
<tr>
<td>English</td>
<td>Three injections are required to establish immunity. A booster should be given after 3 years if there is a persistent risk of infection. Subsequent boosters must then be given every 5 years.</td>
</tr>
</tbody>
</table>

The source text mentions vaccination for disease protection. The phrase “Zum Aufbau des Impfschutzes” is a literal translation of the source phrase “Aşı korumasını yapılandırılmak” [to structure vaccination protection]. This makes the translation completely incomprehensible in the target language. The sentence actually refers to the number of vaccinations required to build up immunity. For this reason, the expression in the source text should be conveyed in the target language via the phrase “başlıklik oluşturmak için”, which means to establish immunity. In German, this is an expression referring to ‘vaccination’, whereas in Turkish this is an expression referring to ‘the effect of the vaccine’. There is a difference in perspective in the source and target language, but the meaning is the same. On the other hand, the term “Auffrischimpfung” is translated literally into Turkish as “tazeleme aşısı” [refresh vaccine]. However, “tazeleme aşısı” is unidiomatic in Turkish, and should be replaced with “hatırlatma dozu” or “hatırlatma aşısı” (booster). This kind of word-for-word translation makes the text difficult to understand.

Medical language is not only a language of terminologies. Terminology is used in naming many different health-related phenomena such as disease names, organ names, viruses, and physiological structure. In the formation of a medical text, terms are used together with standard language. Terms can be formed by attributing new meanings to words found in daily spoken language. This should also be taken into account in translation; otherwise, the expression in the target language may not be understood or may be misunderstood.

---

13 see https://erste-hilfe-medizinrecht.de/woerterbuch-medizinische-folgeschaeden/ (05.02.2023)
Example 8: Adenoviren – Adeno virüsler – Adenoviruses

In the source text, the expression “mit Adenoviren besiedelte Auge”, which describes the eye, is translated into Turkish as “virüslerle kolonize olan göz” [eye colonized with viruses]. This is not how the eye is described in Turkish. It is difficult to understand how the translation “colonized” came about. The German word “besiedelt” is not a medical term. When used in medicine, it means that the eye is infected, i.e. infected with a virus. And the condition is referred to “Adenovirus Conjunctivitis”. As we have already mentioned, medical language is not just about terms. They are used together with words in the standard language to form expressions. However, when words in the standard language are used in the medical field, they may deviate from their meanings in colloquial language. As Erten points out, words that are the same in everyday spoken language and medical language may not be synonyms. In a medical text, these words take on a different meaning than their meaning in daily/colloquial language. For example, “history” means [tarih, geçmiş [story, the past] in daily/colloquial language and dictionaries, but when used as a medical term, it is synonymous with the term “anamnesis”. For this reason, in translations of such words, the meanings they carry in the context in which they are used should be conveyed, not their dictionary meanings (2016, pp. 58-59). This is the case in this example. The phrase “Kolonize olan göz” is completely incomprehensible in the target language. For this reason, it is necessary to make a meaning-based translation to ensure comprehensibility; in this case, the translation would be “adenovirüs buluştur göz” [adenovirus contaminated eye] which would be comprehensible.

Sample 9: Borreliose – Borelyoz – Borreliosis

In the source text, the expression “befallene Zecke” is translated into Turkish as “tutulmuş kene”. In German “befallen” is a common word that is not specific to the field of medicine and means suddenly, abruptly seize, grasp, overtake. However, when used in the medical field, it is associated with disease (eg. high fever seized him). It is seen that the dictionary meaning of the word “befallen” is transferred to the target language. The fact that the translation was done in this way may have been caused by the phrase “hastalağa tutulmak” [catch a disease], which is used in Turkish to mean to hastalanmak [to be ill]. However, in order to have the meaning of hastalanmak, the words “hastalık” [disease] and “tutulmak” [catch] should be used together. The verb word “tutulmak” alone (or the adjective word “tutulmuş” [caught], as in this case) does not convey the meaning of getting ill or having a disease. Therefore, the phrase “tutulmuş her kene” [every tick that is caught] in the translation suggests that it refers to ticks that are caught by hand and this causes ambiguity. In German, in layman’s language, i.e. in colloquial language, the adjective “befallen” is used as a counterpart to the term “infiziert”. The term “infected” in English has been adopted into Turkish as “enfekte” through loan and there is no equivalent.
one-word term in the Turkish language. In Turkish, it is possible to use “enfekte keneler” [infected ticks]. However, considering the target group, it should be translated as “hastalık taşıyan keneler” [disease-carrying ticks] or “virüs taşıyan keneler” [virus-carrying ticks] for easy understanding by layman.

**Sample 10: Krätze – Uyuz – Scabies**

<table>
<thead>
<tr>
<th>German</th>
<th>Zusätzlich können sich infolge des durch Juckreiz erfolgten Kratzens verletzte Hautstellen <em>eitrig</em> entzünden.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkish</td>
<td>Buna ilaveten <em>kaşıntı</em> yüzdeleri ile yaralanılan deri bölgeleri <em>cilık</em> hale gelip iltihaplanabilir.</td>
</tr>
<tr>
<td>English</td>
<td>In addition, skin areas injured by scratching may also develop <em>purulent</em> inflammation.</td>
</tr>
</tbody>
</table>

The translation of the source text’s “_eitrig_ entzünden” into the target language as “_cilık_ hale gelip iltihaplanabilir” is not intelligible. The choice of the adjective “_cilık_” in the translation for the adjective “_eitrig_” in the source language is a wrong choice, as this adjective is used for eggs ( _cilık_ yumurta) rather than in the medical field. In Turkish, the proper adjective to use in a medical text is “_irinli_” or “_cerahatlı_”, which is the Turkish equivalent of “_purulent_”. Therefore, the translation, “_cerahatlı_ iltihap gelişebilir”, makes clear sense. The translator should know how to use dictionaries (Txabarriaga, 2009;3, cited in 2017, p. 549) and decide which word to use, considering the context (Odacoğlu and Çoban, 2017, p. 549).

This example illustrates an important issue to be taken into account in translation, which can have a negative impact on comprehensibility: synonyms. This is a clear example of how the selection of synonyms in a language can affect the meaning and how important it is to choose the most appropriate word for the context in which it is translated.

**Sample 11: Borreliose – Borelyoz – Borreliosis**

<table>
<thead>
<tr>
<th>German</th>
<th>Viele Infektionen verlaufen ohne <em>sichtbare Krankheitszeichen</em>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkish</td>
<td><em>Birçok enfeksiyon açık hastalık semptomları</em> göstermez.</td>
</tr>
<tr>
<td>English</td>
<td>Many infections run their course without any <em>visible symptoms</em>.</td>
</tr>
</tbody>
</table>

In the source text, the expression “_sichtbare Krankheitszeichen_” is translated literally into Turkish as “_açık hastalık semptomları_” [open/clear disease symptoms]. It is unclear what the expression “_açık hastalık_” [open disease] means in the source text. In addition, “_symptom_” is a medical term of Greek origin. The source text has replaced this foreign term with its equivalent in their own language, “_Krankheitszeichen_”. Thus, the wording in the source text is easy for the target audience to understand. At this point, “_belirti_” should have been used instead of “_symptom_” so that the easy-to-understand style of the source text, in the sense of ‘faithfulness to the author’s style’ (see Gürçüalılar, 2016, pp. 40-41), could also be present in the translation. Therefore, “_hiç belirti göstermez_” [without any symptoms] translation according to meaning will ensure comprehensibility in the target language. As a matter of fact, Hastürkoğlu (2020, p. 158) states that if the translation is done for ordinary people, the daily use of medical terms should be chosen in order to be understood clearly and accurately.

Terms used in the source language may not have an equivalent in the target language that can be translated with a single term. In such cases, the correct translation approach is to translate the meaning of the term in the target language, in other words, to explain the term. When translated literally, comprehensibility in the target language becomes complicated.
Sample 12: Rotaviren – Rota Virüsleri – Rotaviruses

German     Die Verbreitung erfolgt meistens über eine Schmierinfektion.
Turkish    Hastalık genellikle temas enfeksiyonu ile yayılır.
English    Transmission usually occurs via a contact infection.

Another sentence that is misunderstood in the Turkish translation is "temas enfeksiyonu ile yayılır". It is observed that the translation is focused on the source language. The noun phrase "temas enfeksiyonu" [contact infection] implies that a type of infection is being referred to. The meaning in the source language is not captured and a different meaning emerges in the target language. "Schmierinfektion", a hygiene-related term, is also used as "Kontaktilnfee" in German. Since the meaning of "Schmierinfektion" is indirect contact, the use of the expression "dolaylı temas yoluya yayılır" [spreads through indirect contact] in the Turkish translation eliminates misunderstanding.

It is not always convenient to know and find the equivalent of a term, word or expression used in the source language in the target language. In such cases, the English usage of the word/term may be preferred. Considering that English is a common language in the field of medicine in addition to Latin and Greek, this approach is not incorrect. However, this approach can sometimes lead to an inaccurate translation.


German     Fledertiere (wie zum Beispiel Flughunde und Fledermäuse) und Menschenaffen aus Gebieten, in denen Ebolaviren endemisch bei Tieren vorkommen, sind die wahrscheinlichsten Erregerquellen.
Turkish    Ebola virüsü hastalığından etkilenen bölgelerden gelen yarasalar – uçan tılkiler ve yarasalar gibi – ve maymunlar en olası patojen kaynağıdır.
English Flying mammals – such as bats and flying foxes – and apes from regions affected by Ebola fever are the pathogen’s most likely natural reservoir.

In the German source text, the word "Flughunde" is translated into Turkish as “uçan tılkiler” [flying foxes]. If the animal name in German had been translated literally, it would have been called “uçan köpekler” [flying dogs]. The reason why it was translated as “uçan tılkiler” may be that it was translated from the English word "flying foxes". In this case, it is possible that English was used as a "lingua franca". However, "Flughunde", which is translated into Turkish as “uçan tılkiler", is actually called “meyve yarasalar" [fruit bats] in Turkish.

7. Conclusion

The language used in medical texts varies according to the purpose, function and target audience of the text. Medical texts intended for lay audiences, i.e. for informing the public, employ an easy-to-understand language, which should be a goal to be pursued in translation. The terms used in medical texts that aim to inform the public are national medical terms. More precisely, replacing Latin and Greek terms with their equivalents in the countries’ own languages facilitates the comprehensibility of texts whose target audience is the general public. Comprehensibility problems may arise when translating national medical terms, concepts or expressions used in the source text into the target language. The
following reasons can be given for the comprehensibility problems in translations identified in this study:

Diseases can be named according to their modes of transmission or their symptoms in the body. If these features of disease names are referred to in the source text, there may be problems of comprehensibility in translation. Omitting these parts in translation is a solution. As Baker (1992, p. 40) points out, if the meaning conveyed by a particular item or expression is not crucial for the development of the text, there is no harm omitting the translation of that word or expression (see Yağm, 2015, p. 111). However, this omission should not cause any lack of information. Because it is essential that the information contained in the source text is conveyed completely in the translation. Therefore, it would be a better approach to add a description to the translation text. Especially if the target language recipients live in the source language country (see the examples of Windpocken and Ringelröte).

A word-for-word translation of a term or expression from the source text into the target language may result in the creation of a term or expression that is not used in the target language. In this case, comprehensibility in the target language becomes difficult (see the example of FSME).

The fact that the grammatical rules of the source and target languages differ and that the translation is more faithful to the grammatical structure of the source language leads to misunderstanding in the target language (see Borrelia, Tropfpipetten example).

Terms are created by assigning new meanings to colloquial words or by combining two words with different meanings. When such terms are transferred word-for-word into the target language with their dictionary meanings, a term or concept is created that does not exist or is not used in the target language, which has a negative impact on comprehensibility (see the example of Folgeschäden). In addition, a word used in the source text in colloquial language may have a meaning other than its dictionary meaning when used in medical texts. This should be taken into account in translation. When these expressions are translated word-for-word into the target language, they may not be easily understood or may be misunderstood. This is because an expression that is not used in the target language emerges (see besiedelte Auge, befallene Zecke).

In addition to these factors that negatively affect comprehensibility, in this study, it was determined that a word that does not exist in the target language does not correspond to the word in the source language. Because the translation into the target language is not done from the source language (see the example of “Flughunde” – “flying foxes”). It was observed that the mistranslation was due to the fact that the English word (flying foxes) was translated through calque. In this case it is possible that English was used as a lingua franca. Because of this translation approach, the translated text was not understandable.

It has been observed in the study that while the wording / style of the source text should be taken into account in the translation of texts in which easily comprehensible medical language is used, when a literal translation approach is adopted, misunderstandings, ambiguities or incomprehensibility may occur in the target language. This means the following: The source text was created with the target audience in mind. Therefore, the text uses descriptive sentences (e.g. Der Name ist bezeichnend: translation faithful to the content of the explanatory sentences (The name is telling: Chickenpox can be transmitted even over a large distance by the “wind”), comprehensibility becomes challenging. In addition, using national medical terms in the source text (e.g., ‘Krankheitszeichen’ instead of the...
‘symptom’, ‘Windpocken’ instead of ‘Varizellen’) make the text more understandable for the target audience. In this respect, the translation should be faithful to the style of the source text. Therefore, what is meant by the concepts of free and faithful translation mentioned by Tahir Gürcağlar should be taken into account: to be faithful to the integrity of the source text and translate it completely, or to adhere to the author’s style, the content, or the stylistic features of the source text (see Tahir Gürcağlar, 2016, pp. 40–41).

Comprehensibility is very important in translation. If the translation is carried out for foreigners in the source language country, a translation approach different from the general translation approach should be adopted. In order to make the translation easier to understand, it would be the right approach to make additions to the source text (see the example of “Windpocken”) or, as in the “FSME” example, to use an abbreviation that the target audience is familiar with and frequently hears around them. Incomprehensible or unclear expressions in the target text may confuse the recipients and cause the translation to ‘fail’ (Maksymski, 2015, p. 12). As Jensen points out, recipients’ prior knowledge, motivations, and expectations will affect comprehensibility (2015, p. 166). This issue identified in this study may be the subject of another study.

In the translation of medical texts, word-for-word translation is generally adopted in practice. This translation approach may provide an advantage in the translation of medical terminology of Latin and Greek origin. This is due to the fact that the same medical terminology is used in the translation and thus there is no problem of comprehensibility or misunderstanding. However, as observed in this study, problems may arise in terms of comprehensibility in word-for-word translation in texts where national medical terms are used. For this reason, it is necessary to implement a translation approach that will ensure comprehensibility in translation.

References
Odacıoğlu, M. C. and Çoban, F. (2017). Tip Metinlerinin Çevirisinde Çevirmenlerin Kullanabilecekleri Yöntem ve Stratejiler, *Turkish Studies - International Periodical for the Languages, Literature and History of Turkish or Turkic*, 12(22), 545-558


https://www.infektionsschutz.de/erregersteckbriefe/