

## **The Applicability of Munday's Systemic Model for Descriptive Translation Studies on Human and Machine Arabic Translations of an English Text**

Hamad Abdullah H Aldawsari

*Department of English, College of Arts and Sciences, Prince Sattam Bin AbdulAziz University, Wadi ad-Dawasir, 11991, Saudi Arabia*  
[h.alnawwar@psau.edu.sa](mailto:h.alnawwar@psau.edu.sa)

Received: 3/2/2022; Revised: 26/3/2022; Accepted: 4/4/2022

### **الملخص**

تناولت الدراسة تحليلاً وظيفياً منهجياً لنص ترجم من الإنجليزية إلى العربية ترجمة بشرية وأخرى آلية، وقد انتهج في ذلك نموذج جيرمي مندي المنهجي في الدراسات الوصفية الترجمة وباستناد على أسلوب هاليدي لتحليل اللغة على الصعيد الفكري والتبادلي والنصي. وتهدف الدراسة إلى تحليل مدى فاعلية تطبيق هذا النموذج على التراجم البشرية والآلية العربية. وقد أشارت النتائج إلى وجود تناوب على الأصعدة الثلاثة بوتيرة بارزة في النص البشري مقارنة بالنص الآلي والذي رأى أنه قد يكون ذا ارتباط بمفهوم عموميات الترجمة بالإضافة إلى الفارق الزمني بين نشر النص والترجمة بالإضافة إلى الاختلاف الثقافي للمتلقي وكون الترجمة جزء من برنامج تدريبي.



# *Journal of Research in Language & Translation*



*Issue No. 1 Vol. 2 (2022)*

## **Abstract**

This paper intends to analyze translation shifts between an English source text (ST) and two Arabic (human and machine) translations (HT and MT) by applying Jeremy Munday's Systemic Model for Descriptive Translation Studies, adapting a systemic functional approach using Halliday's ideational, interpersonal, and textual levels of language analysis. The overall aim of the study is to test the practicality of the model on Arabic human and machine translations of the same English source text. Results suggest substantial shifts at the three metafunctional levels of language in the human translation compared to the machine translation. It is suggested that these shifts could be linked to the concept of translation universals in addition to being possibly motivated by the somewhat big publishing time gap, the different cultures of the source text and human target text audiences and the fact that the latter was written as part of a translator training program.

*Keywords: computational linguistics; descriptive translation studies; machine translation; systemic functional linguistics*

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## Introduction

In parts of the Arab world, translations are still being juxtaposed with alternative translations followed by dictated amendments. This study attempted to apply a more ‘neutral’ approach adapted from Halliday’s Systemic Functional Linguistics (SFL), focusing on the ideational, interpersonal, and textual language levels. In this approach, an English source text (ST) and two Arabic human and machine translations of the text (HT and MT), were analyzed in order to attempt to locate shifts in meaning. Jeremy Munday’s Systemic Model for Descriptive Translation Studies published in Theo Hermans’ book *Crosscultural Transgression* (2014) was adapted. Several books were consulted to accurately carry out the systemic functional analysis of the two texts. These include Halliday’s *An Introduction to Functional Grammar* (2014), Thompson’s *Introducing Functional Grammar* (2013), *Using Functional Grammar* (Butt et al., 2000) and *A Workbook for Getting Started with Functional Grammar* (Droga & Humphrey, 2002). The overall aim of this paper was to test the practicality of the model presented by Munday, especially when applied to human and machine Arabic translations of the same English ST.

## Literature Review

Only a few studies have attempted a systemic functional analysis of Arabic translations (e.g., Althumali, 2021; Al Herz, 2021). Althumali (2021) proposed the use of SFL as a tool for translator training and assessment. He demonstrated its effectiveness by conducting an experiment on two groups, one trained to translate using an SFL approach and the other without. His results indicated the usefulness of SFL-based training in aiding translators to interpret more accurately. Al Herz (2021) carried out an SFL analysis of two translations of the same source text. He focused on modality and found “discrepancies” between the two target texts which he attributes to stylistic preferences of the two translators (p. 151). This study intends to gather further evidence on the practicality of SFL analysis of Arabic translations by examining human and machine translations of the same source text, adapting Munday’s Systemic Model for Descriptive Translation Studies. Because Halliday’s systemic functional grammar forms an important part of Munday’s analysis, a clarification of it is provided next.

### Halliday’s Systemic Functional Grammar

According to Halliday and Hasan (1985, p.10), a text is “language that is functional.” This means that the function of a text should be considered when attempting to analyze it. This includes examining it in both its context of culture and context of situation. Context of culture can be defined here as “the sum of all meanings it is possible to mean in that particular culture” (Butt et al., 2001, p. 3), while context of situation can be described as the more specific contexts inside that context of culture. What follows is a description of the three levels of meaning reflected by the context of situation.

### *Ideational Metafunction*

In his highly influential book *Introducing Functional Grammar*, Halliday describes the ideational function of language as the “human experience” (Halliday, 2014, p. 29). This agrees with Thompson’s definition of the term as “our experience of the world, including the worlds in our own minds” (Thompson, 2013, p. 30). What both these descriptions imply is that the ideational level of language highlights the choices of grammar and vocabulary that reveal the writer or

speaker's ideology and the way he or she views the world. However, Halliday further distinguishes between two components of the ideational level, which are "the experiential and the logical" (Halliday, 2014, p. 29). This paper focused only on the experiential component when addressing the ideational function of the text. A good way of explaining the experiential function of language is by asking the question "Who does what to whom under what circumstances?" (Butt et al., 2000, p. 46). This means that in the experiential function of language, we examine three smaller parts of the text which are termed participant, process, and circumstance. A participant can be a nominal group or a prepositional phrase, a process is always a verbal group, and a circumstance might be an adverbial group, prepositional phrase, or sometimes a nominal group (Butt et al., 2000). By analyzing the participants, processes, and circumstances in terms of transitivity, the experiential metafunction can be examined (Droga & Humphrey, 2002).

### ***Interpersonal Metafunction***

According to Halliday, language is "enacting our personal and social relationships with the other people around us" (Halliday, 2014, p. 29). Thompson adds that we use language to interact with other people to "influence their behavior, to express our own viewpoint on things in the world, and to elicit or change theirs" (Thompson, 2013, p. 30). Linguists have distinguished two kinds of interactions for which we use language. The first is to exchange information, and the second is to exchange goods and services (Butt et al., 2000). A further distinction can be made regarding the type of exchange happening. It can either be giving or demanding, which means that language can be used to give information or goods and services, and it can also be used to demand information or goods and services. For example, the clause "[h]ow many miles to Babylon?" is considered demanding information, while the clause "[t]hree score miles and ten" is considered giving information (Butt et al., 2000, p. 87). Similarly, the clause "cross Macquarie Street" is demanding a service and the clause "I'll make the tea" is giving a service. An analysis of the interpersonal metafunction also consists of investigating the *mood* and *residue* of the text in question (Droga & Humphrey, 2002).

### ***Textual Metafunction***

The third function of language identified by Halliday is the textual metafunction (Halliday, 2014). It is "related to the construction of the text" and is "regarded as an enabling or facilitating function" (Halliday, 2014, p. 30). Thompson gives a much clearer description of the textual metafunction by asserting that when we use language, "we organize our messages in ways that indicate how they fit in with the other messages around them and with the wider context in which we are talking or writing" (Thompson, 2013, p. 30). It is used for connecting the experiential and interpersonal meanings and making them a comprehensible whole (Butt et al., 2000). Examining the textual metafunction of a text involves analyzing the beginning of a clause, or the *theme* as it is known by systemic functional linguists. This analysis determines the way the speaker or writer intended the message to be conveyed. For example, the two clauses "[t]he lion beat the unicorn all round town" and "[t]he unicorn was beaten all round town by the lion" are said to be different in their textual metafunction because in the first clause, "[t]he lion" is in the theme position (meaning at the beginning of the clause), while in the second clause, "[t]he unicorn" occupies the theme position (Butt et al., 2000, p. 134). What this means is that the first clause is delivering a message about the lion, whereas the second clause is delivering a message about the unicorn. The rest of the clause other than the theme is identified by linguists as the *rheme* and is defined by Baker as "what the speaker says about the theme" (2011, p. 133).

## Methodology

### Munday's Systemic Model for Descriptive Translation Studies

The study followed a qualitative approach with quantifying measures utilizing Munday's Systemic Model for Descriptive Translation Studies. The model is an adaptation of Toury's descriptive system explained in his book *Descriptive Translation Studies—and Beyond* (1995). It combines three tools for its analysis (Hermans, 2014). The first is the aforementioned Halliday's systemic functional grammar, which examines language through three levels of meaning. The second is corpus linguistics, which uses electronic tools, such as *Wordsmith* and *AntConc*, to generate lists of word concordances and word frequencies in addition to other advantages that aid the researcher in the analysis of texts. The third is an analysis of the cultural context of the two compared texts by “locating the results within the wider publishing, political and sociocultural contexts” (Hermans, 2014, p. 80). All three analytical tools were applied to the texts. Some difficulty was faced during the corpus stage as not all tools recognize Arabic characters accurately, particularly during wordlist extractions. Fortunately, a suitable tool, Sketch Engine (Kilgarriff et al., 2014), was located and used to carry out the wordlist analysis as well as total word count (tokens), unique word count (types), and type/token ratio.

### The Texts

#### *The Source Text*

The ST is an English extract that consists of 584 words divided into seven paragraphs (Appendix A). It is taken from the book *The Mass Media and Modern Society* written by Theodore Peterson, et al. and published by Holt, Rinehart and Winston in 1965. Not much information is available online regarding the text or even the book in general with the exception of a somewhat miniature review about the text mentioned in the book *Makers of the Media Mind: Journalism Educators and Their Ideas* (Sloan, 1990). The extract is titled *Man as Symbol Maker* and discusses the unique ability of humans to attach a symbolic meaning to everything around them. It appears, at first, as if the text is purely philosophical, but after careful reading, it seems that it combines notions taken from several fields of study, including sociology, theology, and even economics. This combination of several fields into one text was one of the main factors the text was chosen for analysis as it might be interesting to discover how much of the Western ideas and thought expressed in the text would be retained when translated for a target audience that might possibly disagree with some of these ideas.

#### *The Target Texts*

The HT is an Arabic translation of *Man as Symbol Maker* (Peterson, et al., 1965), translated by Ghada Al-Amoudi (Appendix B). Both the source and the human target text were initially located on the website *Translators Avenue* (Translatorsavenue.com, 2014), which is a website that aims at “giving professional models of translation in different fields in order to help potential translators gain more experience through studying such models” (ProZ.com, 2014). However, upon further research, it was determined that the text was originally published in a newsletter promoting a translator training program supervised by a company called Talal Abu-Ghazaleh Translation, Distribution & Publishing, or TAG for short (Talal Abu-Ghazaleh Translation, Distribution & Publishing, 2010). The text was published to showcase the quality of the translator training program that this company provided. Moreover, communication with the translator revealed that the purpose of the translation was for translator training (G. Al-Amoudi, personal communication, December 26, 2018).

The same source text was translated using Google Translate (Appendix C). Google currently uses a neural machine translation system for several languages, including Arabic (Alkhawaja et al., 2020). Google translate was used due to its popularity.

## Results

### Computer-Generated Statistics of the Texts

Table 1 presents some word statistics for the three texts: ST, HT, and MT. The analysis was carried out using Sketch Engine (Kilgarriff et al., 2014), the corpus tool used to analyze the texts. The table shows some clear differences between the texts. First, the HT is 193 words longer than the MT. The HT is 813 words (tokens) long, while the MT is 620 tokens long. Second, the HT uses slightly more variant vocabulary than the MT. The corpus analysis shows that 391 different words (types) were used in the HT, while only 276 types were used in the MT. The overall type-token ratio clearly reveals the variance between the two texts as well as the high percentage of repetitiveness. It also reveals a closer similarity between the ST and MT compared to the HT.

**Table 1**

*Word Statistics Adapted from Munday's Model (Hermans, 2014)*

	ST	HT	MT
Word count (tokens)	٦٤٩	٨١٣	٦٢٠
Different words (types)	٢٨٨	٣٩١	٢٧٦
Type-token ratio	44.38	48.09	44.52

Another advantage of corpus tools is the generation of word frequency statistics, as shown in Table 2. The table shows the 10 most frequent words in the three texts, and the words are ranked by frequency. The ST's most frequent words appear on the left side of the ST column with the number of times they were repeated next to it. Similarly, the HT and MT's most frequent words appear on the left side of their respective columns with the number of times they were repeated next to them. The table again reveals that the MT appears to resemble the ST more than the HT. The use of the word *man* and its translation الإنسان (*lit. the human being*) are almost equally frequent in both the ST and MT. On the other hand, the HT uses the same word 21 times which is higher than its frequency in both ST and MT.

**Table 2**

*Wordlist for the ST, HT, and MT Adapted from Munday's Model (Hermans, 2014)*

ST		HT		MT	
Word	Frequency	Word	Frequency	Word	Frequency
,	39	و	40	هـ	34
.	30	هـ	37	.	30
of	23	ب	26	,	28
a	20	ان	23	و	25
the	18	الانسان	21	ل	17
and	14	من	20	ب	15
to	14	,	20	ان	14
his	13	.	20	الانسان	14
man	13	ل	18	من	14
he	12	ف	18	ها	9

### The Metafunctional Analysis of the Texts

Appendix D highlights shifts at the three metafunctional levels of language. The majority of shifts appear in the HT, while the MT was found to more closely resemble the ST. It was noted from the analysis that the three metafunctions of language sometimes overlapped, with the Arabic text proving more difficult to apply systemic functional grammar to. What follows is a discussion of each level.

#### *Ideational Metafunction*

Most shifts at the ideational level relate to religion. The ST claims on several occasions that God is a symbol made by man. The HT either alters the language used for this claim or omits it completely. In the following example, the HT alters the language used in the ST when it attempts to assert that humans are different than animals when reacting to the consumption of food and that animals react to food by simply eating it, while humans will avoid some foods for different reasons.

ST. "He may avoid some foods for fear of offending the deity."

HT. "فقد يحرم على نفسه ألوانا من الطعام المحرم في الدين والعقيدة"

(Lit. "He may forbid on himself, colors of forbidden food in religion and faith.")

MT. "وقد يتجنب بعض الأطعمة خوفا من الإساءة إلى الإله."

(Lit. "He may avoid some foods for fear of offending the god/deity.")

The ST uses the words *avoid*, *fear*, *offending*, and *deity*, while the HT uses *يحرم*، *محرم*، *الدين*، *العقيدة* (lit. *forbids*, *forbidden*, *religion*, and *faith*), suggesting an intentional alteration of meaning. The ST appears to distance itself from the human who avoids some foods for religious purposes in contrast to the HT, which uses terminology utilized by many religious people when referring to religious matters, especially in the Arab world. On the other hand, the MT much closely follows the ST, rendering word-for-word many of the aforementioned terms. It is also worth mentioning that throughout the ST, *man* and *men*, are translated in both the HT and MT as *الإنسان* (lit. *the human*

being). The ST appears to be sexist with the continuous use of *man, men, he, and his*, which was clear from examining the word frequency statistics in Table 2 above.

The following is another example from the two texts where a different strategy was undertaken:

ST. "He envelops himself ... in religious rites that he cannot see or know anything except through his symbolic system."

HT. "و غلف حياته بـ ... الطقوس اللاهوتية"

(Lit. "He wrapped his life in ... religious rituals.")

MT. "إنه يغلف نفسه بـ ... طقوس دينية لا يستطيع أن يرى أو يعرف أي شيء إلا من خلال نظامه الرمزي"

(Lit. "He envelops himself in ... religious rituals that he cannot see or know anything except through his symbolic system.")

The ST phrase *that he cannot see or know anything except through his symbolic system* was completely omitted from the HT. The phrase appears to accuse human beings of examining reality only through their faith, which they wrap themselves in, meaning that the ST chose to somewhat negatively comment on this attribute that some human beings might have, while the translator of the HT decided that refraining from commenting on that aspect is the better choice. On the other hand, the MT did not omit any phrase in the ST indicating that omission is a translation strategy used by human translators.

### **Interpersonal Metafunction**

At the interpersonal level, there appears to be a number of shifts related to the relationship between the ST writers and their potential audience and the HT writer and her potential audience. One aspect is the sexist language used in the ST with the continuous use of *man, men, he, and his* to refer to human beings. Both HT and MT avoid this by rendering man and men to الإنسان (*lit. the human being*) and then referring to that neutral word rather than using the words *he* or *his*. It must be noted, however, that the ST was published in 1965, whereas the HT was published in 2009, which might justify the reason behind these shifts with sexism becoming a more prominent issue in writing and life in general in the Western world (Mills, 2008). It is interesting to note that all the machine translation systems tested did not render *man* to its literal meaning. This reflects, perhaps, the constant recurrence of such a rendition in many comparable translated texts used by many of these systems for translation reference (Alkhawaja et al., 2020).

Another aspect related to the relationships between the writers and the audiences in both the ST and HT is the difference in the way the two scholars quoted are presented in both texts. In the ST, the first scholar quoted is Kenneth Boulding, who "reminds us, a dog has no idea that there were dogs on earth before he arrived and will be here after he has gone." Here are the excerpts from the ST, HT, and MT:

ST. "They have no sense of past, no sense of future; as Kenneth Boulding reminds us, a dog has no idea that there were dogs on earth before he arrived and will be here after he has gone."

"فهي كما يقرر كينيث بولدينج (١٩١٠-١٩٩٣) لا تمتلك إدراكاً أعلى للشعور بالزمن" إذ لا تلقي بالأهـ. HT. للماضي الفائت ولا تنتظر المستقبل القادم!" فحيوان مثل الكلب لا يمتلك خبرة عن أنواع الكلاب التي سكنت الأرض قبله، ولا يشغله تلك التي ستأتي بعده"

(Lit. "It, as asserted by Kenneth Boulding (1910-1993), does not have a higher realization to feel time 'as it does not pay attention to the finished past and does not await the coming future!' for an animal like a dog does not have experience about the types of dogs who lived in the earth before him, and no concern to him those who will come after him.")

"ليس لديهم إحساس بالماضي ولا إحساس بالمستقبل؛ كما يذكرنا كينيث بولدينج، ليس لدى الكلب أي فكرة عن وجود كلاب على الأرض قبل وصوله وسيكون هنا بعد رحيله."

(Lit. "They have neither a sense of the past nor a sense of the future; As Kenneth Boulding reminds us, the dog has no idea there were dogs on Earth before he arrived and will be here after he's gone.")

It is clear that a number of shifts occurred between the ST and the HT in this example. The most visible shift is the addition of the years in which Boulding lived. Boulding is probably known to the audience of the ST but not to the audience reading the translation. An additional shift that appeared in the HT is the referral to the example of the dog quoted by Boulding as "فحيوان مثل الكلب" (lit. an animal like a dog) and not as the ST quoted it as "a dog". Dogs do not hold the same social status in the Arabic culture as in the Western world. On the contrary, they are mostly regarded as unclean animals which are to be mostly avoided (Abou El Fadl, 2001). In both examples, the MT did not alter the ST wording but kept it the same.

It is also noted that the ST depicts human beings as types of animals but with some unique abilities, which is slightly altered in the HT. For example, the ST writes about the human communication faculty that "distinguishes him from other animals," which is translated in the HT as "يغاير بها التصنيف العام للحيوانات" (lit. contrasting to the general classification of animals). The HT attempts to distance the human being from animals by referring to the general classification of animals, whereas the ST portrays humans as a part of the animal classification. This alteration of meaning is closely related to Darwin's theory of evolution, which is perhaps generally accepted in the Western World but mostly rejected in the Muslim Arab world (Aslan, 2005).

### **Textual Metafunction**

The HT appears to feature increased cohesion. This is evident in the increased frequency of the word الإنسان (lit. the human being) in the HT, which suggests a coherent text. Table 2 highlighted the computer-generated word frequency statistics, which showed that the term is used far more frequently than in both the ST and MT. Moreover, some shifting of theme positions suggests an effort to increase cohesion and readability. The following example illustrates this:

ST. "Traditionally, philosophers have set man apart from other animals."

HT. "مما توطأ عليه الفلاسفة جيلاً بعد جيل أن يصنفوا "الإنسان" في رتبة مستقلة"

(Lit. "That which had a concession among philosophers generation after generation is to put 'the human being' in a unique position.")

MT. "تقليدياً، ميز الفلاسفة الإنسان عن الحيوانات الأخرى"

(Lit. “Traditionally, philosophers have distinguished man from other animals”)

The ST places the words *traditionally* and *philosophers* in the theme position. However, the HT puts the words مما تواطأ عليه (lit. *that which had a concession*) in the theme position, keeping *philosophers* as it is and rendering *traditionally* as جيلاً بعد جيل (lit. *generation after generation*). In this example, not only is there a shift at the textual level but at the ideational level as well. The addition of the words مما تواطأ عليه (lit. *that which had a concession*) adds emphasis to the notion of the phrase مستقلة في رتبة الإنسان (lit. “*The human being*” in a unique position). On the other hand, the MT keeps the theme position the same as in the ST and does not add any additional notions.

Another example illustrating the shifting of the theme position in the HT is the following:

ST. “Even the mythologies of man, like mathematics, language, and the formula  $E = me^2$ , are his rational and practical efforts to deal with experience.”

HT. "حتى الأساطير الإنسانية يتم التعامل معها على أنها تمثل نضج الإنسان وما بذله من جهد عملي لاكتساب الخبرة شأنها في ذلك شأن الرياضيات وعلم اللغة والصيغ الرياضية والمعادلات الحسابية."

(Lit. “Even the human mythologies are treated as if it reflects the growth of the human being and what he did of practical effort to acquire experience as it is, as the example of Mathematics, Linguistics, mathematical formulas and mathematical equations.”)

MT.

"حتى أساطير الإنسان، مثل الرياضيات واللغة والصيغة  $E = me^2$ ، هي جهوده العقلانية والعملية للتعامل مع التجربة"

(Lit. “Even the myths of man, such as mathematics, language, and the formula  $E = me^2$ , are his rational and practical efforts to deal with experience”)

The examples of *mathematics*, *language*, and *the formula  $E = me^2$* , which are positioned in the theme position in the ST, are transferred to the end of the sentence in the HT. Moreover, the mathematical formula, which is mistakenly written as  $E = me^2$  when it is probably referring to Einstein’s  $E = mc^2$ , is substituted in the HT with الصيغ الرياضية والمعادلات الحسابية (lit. *mathematical formulas and mathematical equations*). Due to these changes, the HT does seem somewhat more coherent.

As with the previous example, the MT did not change the theme structure of the sentence. Moreover, the incorrect mathematical equation is unchanged and remains in English, demonstrating that Google Translate recognizes the mathematical equation.

## Discussion

Concurring with previous studies (Althumali, 2021; Al Herz, 2021), the use of SFL in the analysis of Arabic translations has been found to be practical. Munday’s Model provides an ample qualitative approach to translation analysis. Frequency results indicate the human translator’s tendency to make translated texts a detailed explanation of the original text (Vinay & Darbelnet, 1977/1995). This could also be linked to Mona Baker’s widely debated *translation universals* (1993; see also Olohan, 2004). More specifically, it could be linked to the tendency of explicitation, described as the inclination to spell things out by some translators. In other words, it

could be assumed that there was an attempt of clarification by the human translator compared to the machine. Moreover, the metafunctional analysis of the texts could suggest two other translation universals, namely normalization (described as conservatism by Baker, 1993) and simplification. Shifts at the ideational level, such as the translation of the word *deity* to العقيدة والدين (*lit. religion and faith*) could be understood as an attempt to normalize the text for the target audience by the human translator. On the other hand, shifts at the textual level, such as the translation of *the formula*  $E = me^2$  to الصيغ الرياضية والمعادلات الحسابية (*lit. mathematical formulas and mathematical equations*) could be regarded as an attempt to simplify language by the human translator compared to both the ST and MT. Overall, there can be no doubt that some clear shifts have been found between the ST and the HT while, on the other hand, the MT followed the source text meticulously. Considering Munday's model, most of the shifts found in the HT are closely related to the intended audience of the ST and the HT. The ST was most likely written with a Western audience in mind who would be familiar with and also accept ideas such as Darwin's theory of evolution and the overall perception of religion. The HT, on the other hand, was written as a part of a training program for Arabic translators who most probably understood the target audience and their culture. This explains the shifts that appear on both the levels of culture and style. Moreover, the HT was published in a newsletter belonging to the translator training institute TAG (Talal Abu-Ghazaleh Translation, Distribution & Publishing, 2010). It was possibly published as a showcase of talent. Examining the newsletter suggests that the aim of publishing the translation might be to advertise their organization and encourage people to enroll in their translator training program. The translation was presented as a model of how their course can improve your performance (G. Al-Amoudi, personal communication, December 26, 2018).

### Conclusion

This paper set out to apply a qualitative analysis of an English text and its Arabic human and machine translations to identify shifts at the ideational, interpersonal, and textual levels of language. Jeremy Munday's Systemic Model for Descriptive Translation Studies was adapted to achieve this goal. The model did prove practical to a certain extent. The analysis of the texts revealed substantial shifts in the HT at the three metafunctional levels of language. These shifts could be explained with reference to Baker's (1993) translation universals and were possibly motivated by the somewhat big publishing time gap, the very different cultures of the ST and HT audiences, and the fact that the HT was translated as part of a translator training program. Conversely, with the exception of the translation of *man* and *men* as الإنسان (*lit. the human being*), no major shifts were found in the MT, suggesting that machine translations still follow source texts in their interpretations. It was noted from the analysis that the three metafunctions of language sometimes overlapped, with the Arabic text proving more difficult to apply systemic functional grammar to. Munday mentions this in the conclusion of his model by asserting that it "may not work so well with non-European languages." (Hermans, 2014, p. 91). It is hoped that despite these limitations, this study provided further insight into systemic functional translation analysis. It should be noted that a more detailed application of Halliday's metafunctional analysis on larger texts will most likely expose more reoccurring shifts.

## Bio

Hamad Abdullah H. Aldawsari is an Assistant Professor of Translation at the College of Arts and Sciences, Prince Sattam bin Abdulaziz University (PSAU), Wadi Addawasir, Saudi Arabia. He completed his MA and PhD at the University of Birmingham, UK. His research interests include Translator Studies & Linguistics.

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## **Appendix A: Source Text (ST)**

### **Man as Symbol Maker**

Theodore Peterson, et al.

Traditionally, philosophers have set man apart from other animals because of his powers of reason. But man has another faculty which also distinguishes him from other animals - his ability to communicate by symbols. He is the one creature that reacts not only to his real physical environment but also to a symbolic environment of his own making. A hungry dog reacts to food by eating it. A man might, too, but just what he eats often depends on symbolic considerations. He may avoid some foods for fear of offending the deity; he may eat others for their reputed curative powers; he may even eat some, such as caviar, for status.

What all of this means is that man has an environment far different from that of other creatures. Most creatures live in just their physical environments. They receive stimuli, and they respond to them. They have no sense of past, no sense of future; as Kenneth Boulding reminds us, a dog has no idea that there were dogs on earth before he arrived and will be here after he has gone. But man, by creating a symbolic world, has given reality a dimension known only to the human species.

Between the mere stimulus and response of other creatures, he has erected a symbolic system that transforms the whole of human life and sets it apart from the life of all other animals. This distinctive mark of human life is not necessarily related to man's rationality (or to his irrationality, for that matter). It is a remarkable achievement that has taken man out of a merely physical universe and put him into a symbolic universe of language, art, and myth.

Man does not confront reality first-hand. Instead of always dealing with things themselves, as other animals do, he develops ideas about things. He so envelopes himself in linguistic forms, in artistic images, in mythical symbols, or in religious rites that he cannot see or know anything except through his symbolic system. As Epictetus said, "What disturbs and alarms man are not the things, but his opinions and fancies about the things."

Reality of course contains all the things which are given to man by his senses; but the framework and structure of reality are not something which man can touch or directly see. They are something intellectual, something he can perceive only indirectly through symbols. Animals react to outside stimuli either directly or not at all. Men, on the other hand, respond largely in a cerebral, invisible way. They produce images, notions, figments of all sorts, as symbols for ideas about things. A cat may cower under a porch during a thunderstorm; only a man would interpret the storm as a sign of a god's wrath. For man the symbol-maker, then, the world is mainly a pseudo-world, a web of symbols, of his own making.

Yet his pseudo-world is not sheer fantasy. Even the mythologies of man, like mathematics, language, and the formula  $E = mc^2$ , are his rational and practical efforts to deal with experience. They are attempts to organize his sensations and to build up around them symbolic systems that give meaning to his existence.

As a result, man's world is different from that of other animals, for it is both more and other than the physical stimuli which surround him. More important, it is precisely this symbol-making function that makes human communication and the social process possible.

## Appendix B: Human Target Text (HT)

الإنسان صانع للرموز

ترجمة: غادة عبد الله

مما تواطأ عليه الفلاسفة جيلاً بعد جيل أن يصنفوا "الإنسان" في رتبة مستقلة يغير بها التصنيف العام للحيوانات لما جبل عليه الإنسان من قدرة على التواصل باستخدام "الرموز". فهو الكائن الوحيد الذي لا تتقيد أشكال استجابته بمحيطه المادي القريب فحسب، بل يتجاوزه إلى عالم رمزي من صنعه كذلك. إن الكلب الجائع يتفاعل مع الطعام بالأكل فقط، وهكذا قد يصنع الإنسان! إلا أن ما يأكله الإنسان يتوقف إلى حد كبير على اعتبارات رمزية. فقد يحرم على نفسه ألواناً من الطعام المحرم في الدين والعقيدة، بينما يتناول أنواعاً أخرى أماً في الشفاء، وقد لا يتناول الطعام جوياً بل زينة وتفاخراً ورغبةً بالتباهي أمام الناس بانتمائهم لطبقة اجتماعية مترفة .

كل هذا يوحي إلينا أن ثمة بونٌ شاسع يفرق بيئة الإنسان عن بيئات الأحياء الأخرى. فغالبية الكائنات الحية تستقبل المؤثرات من محيطها ثم تتفاعل معها في حدود البيئة المادية المحسوسة ولا أكثر، فهي كما يقرر كينيث بولدينج (١٩١٠ - ١٩٩٣) لا تمتلك إدراكاً أعلى للشعور بالزمن "إذ لا تُلقى بالألوان للماضي الفائت ولا تنتظر المستقبل القادم!" فحيوانٌ مثل الكلب لا يمتلك خبرة عن أنواع الكلاب التي سكنت الأرض قبله، ولا يشغله تلك التي ستأتي بعده. أما الإنسان، فإنه استطاع بإنشائه عالم الرمز لديه أن يلقي على هذا المحيط المادي أبعداً أكثر عمقاً جعلت من الواقع القريب شكلاً فريداً يُعرف بانتسابه إلى الجنس البشري .

وبين حدّي المؤثر والأثر القائمين عند المخلوقات الأخرى؛ تمكّن الإنسان من أن يبني نظاماً رمزياً ينقل كل أنشطة الحياة الإنسانية ويسجلها بصرف النظر عن حياة الحيوانات الأخرى. وهذه العلامة الفارقة للحياة الإنسانية ليس بالضرورة أن تكون ذات صلة بالصبغة العقلانية عند الإنسان (أو بحدسه الغريزي، في هذا الصدد)، فاختراع (النظام الرمزي) يعد إنجازاً استثنائياً نقل الإنسان من ضيق الكون المادي إلى رحابة الرمزية التي تمثلت في اللغة والأدب والفنون والأساطير .

إن الإنسان لا يقوى على مجابهة الحقيقة الماثلة أمامه مباشرةً. وبدلاً من الاكتفاء بالتعامل دوماً مع ظاهر الشيء كما هو سلوك عموم الحيوانات؛ فإن الإنسان طوّر أفكاراً حول الأشياء، وغُلف حياته بالكثير من الأشكال اللغوية، في الصور الفنية والرموز الأسطورية والطقوس اللاهوتية، حتى أصبح الرمز هو مفتاح مشاهدته ومعرفته الأول. وكما قال إبيكتيتيوس (٥٥ ق.م - ١٣٥ ق.م): "ليست الأشياء في ذاتها ما تثير قلق الإنسان وذعره، وإنما هي رؤاه وخیالاته عن هذه الأشياء". وبالطبع فإن الواقع يحوي الكثير من المعطيات التي توهب للإنسان عن طريق حواسه، ولكن كيفية نشوء الواقع أو هيكلته جوهره فهو أمر لا يمكن للإنسان أن يمسّه أو يشاهده مباشرةً، فهي أشياء تخضع لإعمال العقل، أشياء ما كان بالإمكان فهمها إلا بصورة غير مباشرة ومن خلال الرموز فقط .

وبما أن الحيوانات قد تستجيب للحوافز الخارجية أو لا تستجيب على الإطلاق، فإن البشر على خلاف هذا يتفاعلون بشكل أكبر من خلال مخاطبة العقل وعبر إشارات ذهنية خفية. فهم يُخرجون صوراً ونظريات ونسجاً من الأدوات في كل الحقول؛ لتكون بمثابة رموز لأفكارهم حول الأشياء. فإذا كانت القطة تجتم مرتعدة تحت الشرفة أثناء عاصفة رعدية؛ فإن الإنسان وحده من يفسر هبوب العاصفة على أنه آية على غضب الرب!! ومن ثمّ فإنّه بالنسبة للإنسان -صانع الرمز- يغدو العالم الأساس لديه هو العالم المُصطنع منسوج من رموز صنعها الإنسان .

وبعد، فإن هذا العالم المصطنع ليس محض خيال! فحتى الأساطير الإنسانية يتم التعامل معها على أنها تمثل نضج الإنسان وما بذله من جهد عملي لاكتساب الخبرة شأنها في ذلك شأن الرياضيات وعلم اللغة والصيغ الرياضية والمعادلات الحسابية. كما إنّها تعطي صورة عن محاولات الإنسان لتنظيم آحاسيسه وتشبيد نظام رمزي يحيط بها مما يعطي معنى لوجوده.

نتيجة لذلك، فإنّ عالم الإنسان مختلف في هذا عن غيره من الحيوانات الأخرى، فهما يتعرضان للحوافز الخارجية على حد سواء، بل يزيد عالم الإنسان بما يدور حوله من المؤثرات المادية. والأهم من هذا كله أن ندرك بأنّ دقة هذا الرمز المصوغ هي ما جعلت التواصل الإنساني والتعاملات الاجتماعية أمراً ممكناً.

## Appendix C: Machine Target Text (MT)

### الرجل كصانع رمز

#### المترجم الآلي

تقليدياً، ميز الفلاسفة الإنسان عن الحيوانات الأخرى بسبب قواه العقلية. لكن للإنسان ملكة أخرى تميزه أيضاً عن الحيوانات الأخرى - قدرته على التواصل عن طريق الرموز. إنه المخلوق الوحيد الذي يتفاعل ليس فقط مع بيئته المادية الحقيقية ولكن أيضاً مع بيئة رمزية من صنعه. الكلب الجائع يتفاعل مع الطعام بأكله. يمكن للرجل أيضاً، ولكن ما يأكله غالباً ما يعتمد على اعتبارات رمزية. وقد يتجنب بعض الأطعمة خوفاً من الإساءة إلى الإله. قد يأكل الآخرون لقواهم العلاجية المشهورة؛ حتى أنه قد يأكل بعضاً، مثل الكافيار، للحصول على مكانة.

ما يعنيه كل هذا هو أن الإنسان لديه بيئة مختلفة تماماً عن بيئة المخلوقات الأخرى. تعيش معظم المخلوقات في بيئاتها المادية فقط. يتلقون المنبهات ويستجيبون لها. ليس لديهم إحساس بالماضي ولا إحساس بالمستقبل؛ كما يذكرنا كينيث بولدينج، ليس لدى الكلب أي فكرة عن وجود كلاب على الأرض قبل وصوله وسيكون هنا بعد رحيله. لكن الإنسان، من خلال خلق عالم رمزي، أعطى للواقع بُعداً لا يعرفه إلا الجنس البشري.

بين مجرد تحفيز واستجابة مخلوقات أخرى، أقام نظاماً رمزياً يحول الحياة البشرية بأكملها ويميزها عن حياة جميع الحيوانات الأخرى. هذه العلامة المميزة للحياة البشرية لا تتعلق بالضرورة بعقلانية الإنسان (أو بغير عقلانيته في هذا الصدد). إنه إنجاز رائع أخرج الإنسان من مجرد كون مادي ووضعه في عالم رمزي من اللغة والفن والأسطورة.

لا يواجه الإنسان الواقع مباشرة. بدلاً من التعامل دائماً مع الأشياء بنفسها، كما تفعل الحيوانات الأخرى، يطور أفكاراً حول الأشياء. إنه يغلف نفسه بأشكال لغوية، في صور فنية، في رموز أسطورية، أو في طقوس دينية لا يستطيع أن يرى أو يعرف أي شيء إلا من خلال نظامه الرمزي. كما قال إبيكتيتوس، "ما يزعج الإنسان ويخيفه ليس الأشياء، بل آراءه وهواياته حول الأشياء".

يحتوي الواقع بالطبع على كل الأشياء التي وهبتها حواس الإنسان للإنسان. لكن إطار وهيكل الواقع ليس شيئاً يمكن للإنسان أن يلمسه أو يراه مباشرة. إنها شيء فكري، ولا يمكن إدراكه إلا بشكل غير مباشر من خلال الرموز. تتفاعل الحيوانات مع المحفزات الخارجية إما بشكل مباشر أو لا تتفاعل على الإطلاق. من ناحية أخرى، يستجيب الرجال إلى حد كبير بطريقة دماغية غير مرئية. إنهم ينتجون الصور والمفاهيم والأشكال من جميع الأنواع، كرموز للأفكار حول الأشياء. قد تنكش قطة تحت الشرفة أثناء عاصفة رعدية؛ فقط الرجل يفسر العاصفة كعلامة على غضب الله. إذن، بالنسبة للإنسان صانع الرموز، فإن العالم هو عالم زائف بشكل أساسي، وشبكة من الرموز، من صنعه.

ومع ذلك، فإن عالمه الزائف ليس مجرد خيال. حتى أساطير الإنسان، مثل الرياضيات واللغة والصيغة  $E = mc^2$ ، هي جهود العقلانية والعملية للتعامل مع التجربة. إنها محاولات لتنظيم أحاسيسه وبناء حولها أنظمة رمزية تعطي معنى لوجوده.

نتيجة لذلك، يختلف عالم الإنسان عن عالم الحيوانات الأخرى، لأنه أكثر من المحفزات الجسدية التي تحيط به. والأهم من ذلك، أن وظيفة صنع الرموز هذه هي التي تجعل التواصل البشري والعملية الاجتماعية ممكناً.

## Appendix D: Shifts

	ST Clause	HT Clause	Back-Translation	Shift
1	Man as Symbol Maker	الإنسان صانع للرموز	The human being a maker of Symbols	Ideational
2	Traditionally, philosophers have set man apart from other animals	مما توأطاً عليه الفلاسفة جيلاً بعد جيل أن يصنفوا "الإنسان" في رتبة مستقلة يغير بها التصنيف العام للحيوانات	That which had a concession among philosophers generation after generation is to put 'the human being' in a unique position	Textual
3	Which also distinguishes him from other animals	يغير بها التصنيف العام للحيوانات	Contrasting to the general classification of animals	Interpersonal
4	He may avoid some foods for fear of offending the deity	فقد يحرم على نفسه ألوانا من الطعام المحرم في الدين والعقيدة	He may forbid on himself, colors of forbidden food in religion and faith	Ideational
5	Man has an environment far different from that of other creatures	بون شاسع يفرق بيئة الإنسان عن بيئات الأحياء الأخرى	Large distance that distinguishes the human environment from other living creatures	Ideational
6	As Kenneth Boulding reminds us, a dog has no idea that there were dogs on earth before he arrived and will be here after he has gone	فهي كما يقرر كينيث بولدينج (1910-1993) لا تمتلك إدراكاً أعلى للشعور بالزمن " إذ لا تلقي بالاً للماضي الفائت ولا تنتظر المستقبل القادم!" فحيوان مثل الكلب لا يمتلك خبرة عن أنواع الكلاب التي سكنت الأرض قبله، ولا يشغله تلك التي ستأتي بعده"	It, as asserted by Kenneth Boulding (1910-1993), does not have a higher realization to feel time 'as it does not pay attention to the finished past and does not await the coming future!' for an animal like a dog does not have experience about the types of dogs who lived in the earth before him, and no concern to him those who will come after him	Interpersonal
7	But man	أما الإنسان	As for the human being	Ideational
8	He has erected a symbolic system	تمكّن الإنسان من أن يبني نظاماً رمزياً	The human being was able to build a symbolic system	Ideational
9	This distinctive mark of human life is not necessarily related to man's rationality (or to his irrationality, for that matter)	وهذه العلامة الفارقة للحياة الإنسانية ليس بالضرورة أن تكون ذات صلة بالصبغة العقلانية عند الإنسان (أو بحدسه الغريزي، في هذا الصدد)	And this distinctive mark for human life is necessarily to be of relation to the rationality coating in the human (or in his instinctive intuition in this regard)	Interpersonal

10	As other animals do	كما هو سلوك عموم الحيوانات	As is the behavior of generality of animals	Interpersonal
11	As Epictetus said	وكما قال إبيكتيتيوس (٥٥ ق.م - ١٣٥ ق.م)	And As Epictetus said (55 B.C. – 135 B.C.)	Interpersonal
12	Has taken man	نقل الإنسان	Had transferred the human	Ideational
13	He envelopes himself ... in religious rites that he cannot see or know anything except through his symbolic system	وغلف حياته بـ ... الطقوس اللاهوتية	He wrapped his life in ... religious rituals	Ideational
14	And the formula $E = me^2$	والصيف الرياضية والمعادلات الحسابية	Mathematical formulas and mathematical equations	Interpersonal