



Translators as Decision Makers: A Dialogue Protocol Study of Equivalence in Political Texts

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ARTICLE INFO

Received: May 28, 2019

Accepted: June 27, 2019

Published: July 31, 2019

Volume: 2

Issue: 4

DOI: [10.32996/ijllt.2019.2.4.27](https://doi.org/10.32996/ijllt.2019.2.4.27)

KEYWORDS

equivalence, dialogue protocol, decision-making, process research

ABSTRACT

One of the most common issues of translation as a problem-solving process is equivalence. Since equivalence as a textual relation depends on mental processes and choice of strategies, combining dialogue protocol and textual analysis, the researchers tried in the present study to identify different strategies and criteria used by undergraduate translation students to find equivalents in potentially problematic areas and, to know whether or not there is any significant relationship between those strategies and the acceptability of the equivalents. To this end, a sample of translation students at Jahrom University was asked to translate a news item in pairs. The pairs were required to report on what they were doing during the translation and record their voices. Analyzing dialogues and translation products based on Schubert (2009) the researchers found that most of the participants had resorted to internet, especially Google Translate, as an external resource. In most cases, they were also not able to provide evidence for their choices. More importantly, a significant relationship was found to be present between the choice of strategy and the acceptability of the selected equivalents. The findings of this study can provide translation scholars and teachers with valuable insights into mental processes underlying equivalence.

1. INTRODUCTION

Since translation is a complicated task, several scholars have tried not only to analyze translation products in terms of the strategies used by the translators, but also to understand why some techniques are preferred over the others. From translation training point of view, also, a teacher always wonders “why and how students decide on their solutions of potential translation problems” (Dam-Jensen, 2012, p. 146). Translation problems are individual in the sense that they only exist if the text producer feels “a conflict between where [...] [he/she is] and where [...] [he/she wants] to be; that is, between [...] [his/her] present state and [...] [his/ her] goals, or between [...] [his/her] own goals” (Flower, 1993, p. 42). Therefore, translation can be deemed as a problem-solving process through which various potentially problematic spots might appear and inhibit the translator from moving further. Varantola (2000) gives the following phenomena as examples:

- Equivalence
- Grammatical collocation
- Lexical collocation

- Examples
- Idiomatic usage
- Longer passage
- Para-structure
- Text structure
- Stylistic information
- Encyclopedic information (p.121)

One of the most prevailing problems which all translators encounter in all and every step of their act is the problem of equivalence, to deal with which several strategies and techniques are needed. The two most common situations in which a translator might face equivalence problem are when: (1) there is no equivalent for a source word in the dictionary (e.g. in case of culture-bound or specialized terms) and (2) there are several close synonyms among which the translator is not certain which to choose. Bowker (1999) states that: “(...) the majority of students tend to exhibit an inordinate amount of blind faith in their dictionaries!” (p.166). Several reasons can be given for this, some of which may range from “acceptance of dictionary as an authority, laziness, impatience, lack

of time, to lack of knowledge about how to use other tools in an efficient way” (Dam-Jensen, 2012, p. 148). Although the term equivalence seems to be cliché and controversial, it is a crucial part of translation, without which the whole phenomenon of translation would become difficult to understand. Pym (2009), amongst others, submits that while Equivalence is supposed to define translation . . . translation, in turn, defines equivalence.

Equivalence is a relationship between source text and target text. Therefore, although a comparison between source and target texts helps us understand and classify mistakes and assess the quality, it does not give insight into “the condition that leads to an output, a translation” (Chesterman, 2008, p. 265). According to what was said above, to understand the reason for choosing one approach over others, one must analyze the processes taking place in the translator’s mind during the act of translation. Similarly, “acquisition of translation competence is a dynamic process and translator training, therefore, must be process-oriented” as well (Dam-Jensen, 2012, p. 146).

Protocols are instruments by which researchers can dig into translators’ minds and discover their mental processes. Think-aloud protocol (TAP), also known as concurrent verbal report, is a technique in which students verbalize their thoughts as they thus bring into the open the strategies they are using to understand (or translate) a text. It can be used as both an instructional tool and as an assessment of students at almost any grade level. It has been used in the field of language education, for studying reading processes (Gordon & Heins, 1995) for spelling (Fresch, 2001) and for vocabulary instruction (Soria, 2001). Dialogue protocols are a variation of think aloud protocols (TAP), but while subjects of TAP are asked to verbalize their thoughts and actions with respect to a task carried out on an individual basis, dialogue protocols are the result of data obtained from subjects working in pairs. Several criticisms have been directed toward protocols in general, some of which are discussed below.

First, it is widely said that it is impossible to gain access to subjects’ minds simply through their verbalizations; whether such verbalizations result from monologue or dialogue (Dam-Jensen, 2012). Second, an inextricable element of interference is thought to be present in every act of introspection; not only to perform two simultaneous cognitive activities such as thinking and speaking can be problematic and, therefore, a source of interference (Jääskeläinen, 2000), but also verbal reports (i.e. oral translation) may interfere with written translation (Touy, 2012). Moreover, it is generally accepted that only actively-

processed processes can be verbalized and sub-conscious, automatic ones are out of the subject’s focused and are, therefore, not verbalized (cf. Jääskeläinen, 2000; Kiraly, 1995; Kovacic, 2000). Finally, some scholars believe that verbalizations are incomplete and can only uncover some parts of mental processes and thoughts (Hansen, 2005; Kiraly, 1995); an incomplete report which reveals, however, important information (Kiraly, 1995).

Despite these criticisms, studies such as Jakobsen (2003) underline the fact that protocols in general, and TAP in particular, are not invalid methods of data collection, but should be used in combination with other instruments. In addition, N. Pavlović (2007) and T. Pavlović (2013) assert that collaborative translation protocols (CTPs) in general, and dialogue protocol in particular, are not TAP in its strict sense, but they also have their own disadvantages and must, therefore, be used in conjunction with other instruments such as introspective data. In the same line, the use of dialogue protocol is combined with textual analysis in the present study (cf. Dam-Jensen, 2012). Moreover, some of the criticisms objected toward TAP are not applicable for dialogue protocol. While subjects might forget to verbalize their thoughts during aloud thinking, dialogue, as a variation of TAP, surely generates verbalization (Dam-Jensen, 2012, p. 151) and does so in a more spontaneous and natural manner (Krings, 2005, p. 131). The use of everyday language and jokes during discussions can be an indication of this naturalness (Dam-Jensen, 2012).

In the present study, the researchers not only try to investigate the strategies used by translation students to find appropriate equivalents for potentially problematic terms and the processes that underline those strategies (cf. Dam-Jensen, 2012), but also scrutinize the relationship, if any, between the strategies used and the acceptability of the products. This can be considered a jump-off since no one has yet tried to investigate such a determinant relationship.

2. RESEARCH QUESTIONS

- i. What are the strategies used by Iranian undergraduate translation students to choose English equivalents for technical and semi-technical Persian terms in technical texts?
- ii. What are the criteria used to prefer a specific equivalent to others?
- iii. Which strategies lead to the selection of acceptable equivalents?

3. DESIGN OF THE STUDY

The present study is of a qualitative nature in which dialogue protocol has been used to elicit the data

required. Dialogue protocol helped the researchers reassure the challenging areas of translation and equivalence and analyze those areas based on what had occurred in students' discussions.

3.1 Participants

To take part in this study, a non-random, available sample of 16 undergraduate translation students, all of whom were taking the same translation course, of Jahrom University was selected. It should be noted that the course was an obligatory one on political translation, which must be passed by all undergraduate translation students of the same university.

3.2 Instruments

The instruments used in this study were a test of translation (from Persian into English) and a voice recording device for each pair.

3.2.1 The Test of Translation

In order to investigate the aforementioned research questions, an authentic 165-word length political-religious Persian news report, released by Fars News Agency, was selected to be translated into English by the participants in pairs.

3.2.2 Voice recorder

Each participating pair had a voice recorder to record their dialogues and explanations about their decisions on choosing each equivalent.

3.3 Materials

Each pair was provided with the news report to be translated into English, and a computer set, equipped with internet connection and mono and bilingual dictionaries. Moreover, each pair was given a monolingual and two Persian-English and English-Persian bilingual hard-copy dictionaries. They were also allowed to use their preferred mobile and/or computer dictionaries.

3.4 Model of analysis

In order to analyze the strategies used by the students to deal with the problem of equivalence, Schubert's (2009) classification was used. According to him, processes are either internal (i.e. thoughts involved in the act of translation) or external (i.e. acts, such as the use of tools, communication with informants and recipients of product, and printing activities) which are exposed to direct observation). Moreover, to be able to judge various criteria used by the participants to come up with a final decision, Dam-Jensen (2012) classification was used (look at table 11).

3.5 Procedures

Reading the news item word-by-word, two experts identified 10 technical and/or semi-technical terms, whose translation from Persian into English could be challenging for undergraduate translation students. After giving a warm-up exercise, instructing the sample on the nature and challenges of translating such news items, and ensuring the availability of and participants' knowledge about various online and offline translation aids, the instructor of the course randomly divided the students into 8 pairs. The students had no previous experience of group translation, but they had participated in group work in other classes and were familiar with collaborative tasks. It should be mentioned in this regard that although it is widely accepted that collaborative work can be productive, N. Pavlović (2007) points out that it is not possible to know the outcome of an experiment that involves collaboration between students who are not used to working together. The main translation test, then, was given in a silent, comfortable place. The time allocated to this test was 50 minutes so that the students could translate the text completely and, thus, be able to use the co-text as an extra external resource. Note that all the pairs were asked to discuss and report, in Persian, every individual step they were taking during the act of translation. Two experts, then, read the translations and listened to their corresponding audio files in order to identify various strategies and criteria used to choose equivalents. Regarding the acceptability of the selected equivalents, three experts read all the provided equivalents and rated them based on an either or not criterion. Running a Kappa test (measurement of agreement), the intercoder reliability was assessed. The assessments of the two raters who had almost perfect agreement were chosen as the basis of evaluation and judgment. Consequently, a Chi-Square test was run in order to find out whether or not there is a significant relationship between the strategies used to select appropriate equivalents and the acceptability of those equivalents.

4. CHALLENGES OF EQUIVALENCE

During translation, especially of technical and semi-technical texts, one may encounter terms for which there is no ready-made equivalent in the target language. That is, the term has either various equivalents, each of which fits a specific context, or no lexicalized equivalent in dictionaries, e.g. in case of compound lexemes or phrases. This study, as explained above, deals with such problematic areas of translation in a semi-technical political-religious news item. In the selected text, 10 potentially challenging terms were identified by two experts. Through the

following paragraphs, each term along with its potentially correct, contextually-suitable equivalent is presented. Moreover, the way in which different equivalents are provided by two bilingual Persian-English dictionaries (Aryanpur Kashani, 1984; Haïm, 1981) are discussed.

منطقه سبز (بغداد): (Baghdad's) Green Zone

As the above term is a non-lexicalized compound noun, the researchers could not find any English equivalent for it in the two consulted dictionaries; therefore, it was broken down into its components and the only potentially-problematic part, i.e. 'منطقه', was investigated. In Haïm (2008), there are three different equivalents without any meaning discriminating labels, but with some examples of the noun 'zone'. In Aryanpur Kashani (1984), however, there are just several potential equivalents, with no labels or explanations.

رئیس (فراکسیون پارلمانی): leader (of parliamentary party)

In this phrase, the researchers focused on the Persian noun 'رئیس'. Haïm provides 8 equivalents without discriminating labels and several others with explanation and discriminating labels. Aryanpur Kashani (1984), on the other hand, presents several categorized equivalents, with explanations and usage notes for each category. Consulting the Oxford collocations dictionary (2008), one finds that the common English collocate for parliamentary groups is the noun 'leader', which was surprisingly absent in both bilingual dictionaries of our case.

نقش زیاد: significant role

Since the most common and suitable English equivalent of the Persian noun 'نقش' is role, the researchers decided to focus on the problem of finding an acceptable collocation as the equivalent for the neighboring adjective 'زیاد'. Analyzing the underlying meaning of this adjective, one finds out that the Persian word, despite its quantitative surface meaning, qualitatively modifies its head. Therefore, the translator should first identify the closest Persian qualitative synonym (i.e. 'مهم') and then move forward to find its English equivalent. Haïm provides three non-discriminated equivalents and two discriminated ones. Aryanpur Kashani (1984) divides its suggestions into two main categories and provides an explanation for each category as a whole, not its individual equivalents.

نبرد با تروریسم: battle against terrorism

The only potentially challenging word of this phrase is the noun 'نبرد' which have several contextually and/or

collocationally different equivalents in English. Consulting the Haim Dictionary, one faces two equivalents without meaning discriminating labels. Aryanpur Kashani (1984), on the other hand provides several equivalents with meaning-discrimination and explanation for each. It should be noted, moreover, that the appropriate preposition for the English equivalents cannot be found without consulting collocation dictionaries.

بیانیه: statement

While Aryanpur Kashani (1984) provides 8 different equivalents, without further explanations, for this single word, Haïm provides nothing.

منتشر (شد): (was) released

Since this Persian verb is an inflected form, the researchers tried to find the English equivalents for its stem 'انتشار'. Consulting Haïm, one can find several equivalents, of which some are with and others without meaning-discriminating labels. Aryanpur Kashani (1984), however, provides equivalents without explanation and discriminating labels.

مقدسات: sanctities

In spite the fact that this Persian (Arabic) word is plural and seems not to be defined in a separate entry, both Haïm and Aryanpur Kashani (1984) provide its English equivalents; Haïm (1981) presents three and Aryanpur Kashani (1984) one equivalents without meaning-discriminating labels and/or explanations.

مرقد: shrine

For this Persian noun, Haïm provides three equivalents without meaning-discriminating labels. Similarly, Aryanpur Kashani (1984) provides no meaning-discriminating labels or explanations for its equivalents.

مواد منفجره: explosives

Since this is a Persian noun phrase, consisting of a plural noun, it cannot be defined in dictionaries as a whole. The researchers, therefore, broke it down to its components and tried to find possible equivalents. They also searched its singular form 'ماده منفجره' who was more likely to be present in dictionaries. Referring to the two aforementioned dictionaries, one finds out that Haïm provides some equivalents for the adjectival part of the phrase, of which two are without and one is with explanation. Aryanpur Kashani (1984), on the other hand, provides different unexplained equivalents for the singular form of the whole phrase.

منطقه امنیتی: security zone

As this is a compound noun, it could not be found in dictionaries. The researchers, therefore, broke it to its components and analyzed it part-by-part. The first part was examined and defined in the first example of this section. The second part, thus, was searched in the two mentioned dictionaries. In this regard, both Haim and Aryanpur Kashani (1984) provide some non-discriminated equivalents.

5. DATA ANALAYSIS

To find the ways in which students deal with the problem of equivalence, different strategies used by each pair to find various equivalences for challenging source language terms were analyzed as follows. Meanwhile, the criteria on whose basis they finalized their decisions were determined using both their dialogues and translation products. Drawing on the starting point in each potentially problematic term, the processes of equivalent finding are presented below. It should be mentioned that the students used Persian in their discussions.

Mantaghe-ye sabz (منطقه سبز): Green Zone

All the participating pairs, except for pairs 5, 6, and 8, begin their processing by splitting the compound into two parts, apparently because it cannot be found in the dictionary. Since the English equivalent of the adjective ‘Sabz’ (green) is known, their just try to find a suitable collocation as the equivalent for the noun part. Putting aside the sixth pair who has left the translation out, the other two pairs directly searches the compound on the net (i.e. Google Translate). The following table represents various strategies used by the eight pairs.

Table 1: Mantaghe-ye sabz (منطقه سبز): Green Zone

Pairs 1-4 and 8			Pairs 5 and 7	Pair 6
Internal resources			Internet (Google Translate)	Left out
Pair 1	Pair 3	Pair 4	Pair 5	
Contextual clues	English-Persian dictionary	Internet (Google Translate)	Internet (Wikipedia)	

Among the five pairs who start processing using internal resources, only pairs 2 and 8 use no other strategies and either give no reason for final decision or suggest tentative solutions. Pair 1 provides an equivalent based on their internal resources; however, going through the text and facing similar cases; this pair discusses the lexical meaning of the term and

decides to revise their translation based on contextual clues. Note that the group comes up with their pre-final product based on different tentative equivalents such as ‘region’ and ‘area’. Pair 3, being uncertain about their final product, consults an English-Persian dictionary to reach the best equivalent based on the lexical meaning. Pair 4 also is not convinced by their first translation and uses Google Translate as an alternative to provide them with the final product.

Two pairs begin the process of translation with seeking the whole term on Google Translate. Pair 7 is satisfied with the provided equivalent and goes onto the next part, but pair 5 tries to be reassured of the correct meaning and, therefore, re-evaluates the translation searching it on the internet (e.g. Wikipedia). That is, all these three pairs find support for their products on the internet.

ra'is (رئیس): leader

This Persian noun has several equivalents in English, each of which fits a specific context. Table 2 shows various procedures through which the participants try to find the, in their view, appropriate equivalent.

Table 2: ra'is (رئیس):

leader

Pairs 1-2, 4, 6, and 8		Pairs 3, 5, and 7
Internal resources		Internet (Google Translate)
Pair 2	Pair 4	Pair 5
Persian-English dictionary	English-Persian dictionary	Internal resources

Pairs 1, 2, 4, 6, and 8 use their internal resources to find the equivalent while only pairs 2 and 4 are not satisfied with their own knowledge and move to other resources as well. Pair 2 consults a Persian-English dictionary and pair 4 an English-Persian one to double-check their suggested equivalents. They either give no explicit reason for their choice or are convinced of the final product based on the lexical meaning of the word. Among those who refer to Google Translate as their primary source, only pair 5 is not convinced and analyzes the result with their own knowledge and decides on the final product based on their personal evaluation. The other pairs simply seek support from the internet.

Naqsh-e zyad (نقش زیاد): significant role

All the pairs begin their analysis with breaking this phrase into its components because it cannot be found in a single entry of the dictionary. Since all the

participants suggest the English equivalent 'role' for 'naqsh', the analysis is dedicated to the processes through which the students try to define 'zyad' in English.

Table 3: naqsh-e zyad (نقش زیاد): significant role

Pairs 1-7		Pair 8
Internal resources		Persian-English dictionary
Pair 4	Pair 5	
Internet search	Internet (Google Translate) and collocation dictionaries	

Pairs 1 through 7 use their internal resources as the primary source for finding the suitable equivalent. Except for pairs 4 and 5, all other groups trust in their personal judgment and rely on their intuition. Pair 4 double-checks the term on the internet to be reassured about its translation. Pair 5 not only searches for the equivalent on Google Translate (support on the internet), but also re-evaluates the product against collocation dictionaries and finds nothing better; they are, however, not fully convinced of the final decision and want to get on with it if there is enough time. Pair 8 is the only pair who uses Persian-English dictionary as their only source of information in this case.

Nabard ba terrorism (نبرد با تروریسم): battle against terrorism

This is a Persian phrase and cannot be found in the dictionary. All the pairs, therefore, split it and search for its components. Since 'terrorism' is a loan word, there is no need to search for it. Thus, the rest of the phrase is investigated using the following strategies.

Table 4: nabard ba terrorism (نبرد با تروریسم): battle against terrorism

Pairs 1-3, 5, and 8		Pairs 4, 6, and 7
Internal resources		Internet (Google Translate)
Pair 3	Pair 5	
Contextual clues	Internet (Wikipedia)	

Among the five pairs who rely on their internal resources, only pairs 3 and 5 are not convinced of the appropriate equivalent and resort to other sources; the other pairs either give no reason for their decisions or rely on their personal evaluations. Pair 3 compares this phrase with similar cases in the same text and bases their decision on lexical evidence. Pair 5, as usual,

double-checks the suggested equivalent on the internet so as to find additional support. Interestingly, the remaining pairs get Google Translate provide them with a ready-made solution and consult no other resources.

Bayanieh (بیانیه): statement

This is a technical term and should be defined based on its relevant context. Therefore, as can be seen, no pair relies merely on their own knowledge.

Table 5: bayanieh (بیانیه): statement

Pairs 1, 3-4, and 6-8	Pairs 2 and 5	
Internet (Google Translate)	Internal resources	
	Pair 2	Pair 5
	Persian-English dictionary	English-Persian dictionary

Several pairs consider Google Translate to be the single most reliable source and refer to no extra resources. Only two pairs begin their analysis using their internal resources. However, they are not certain about their tentative solutions and resort to other sources. Hence, pair 2 uses a Persian-English dictionary and pair 5 consults an English-Persian one to be reassured based on the analysis of the lexical meaning.

Montasher (منتشر): release

Although it seems not to be a challenging word at first glance, its co-occurrence with another word bounds its meaning to the context of use. Therefore, the following strategies are used to uncover its suitable equivalent.

Table 6: montasher (منتشر): release

Pairs 1-5 and 7		Pairs 6 and 8
Internet (Google Translate)		Internal resources
Pairs 3-4	Pair 5	Pair 8
Internal resources	Collocation dictionaries	English-Persian dictionary

Only three of the six pairs who use Google Translate to decide on the most common equivalent are doubtful about the accuracy of the product and refer to other sources. Interestingly, two of these pairs rely on their own knowledge and choose another equivalent, giving no explicit reason for their decision. Pair 5 again

double-checks the produced translation in collocation dictionaries. Two pairs use their internal resources as the basic means of finding the appropriate collocation. Pair 6 resorts to no other reassuring sources and personally evaluates the accuracy of their product, but pair 8 consults an English-Persian dictionary to become satisfied with the final decision.

Moqaddasat (مقدسات): Sanctities

This is an Arabic loan word and several pairs, therefore, are not sure of its equivalent in English. The following table represents various strategies used by the students to find its appropriate English equivalent.

Table 7: moqaddasat (مقدسات): sanctities

Pairs 1, 3-5, and 8	Pair 2	Pair 6	Pair 7
Internet (Google translate)	Internal resources and English-Persian dictionary	Persian-English dictionary	Left out

Perhaps due to the foreign nature of this word, five pairs simply rely on Google Translate, and no other resources, to find its English counterpart. Pair 2 uses both their internal resources and an English-Persian dictionary in order to find a convincing equivalent for the word at hand based on both personal judgment and lexical evidence. Pair 6 prefers to seek the equivalent in a Persian-English dictionary and pair 7, finally, leaves the word untouched.

Marqad (مرقد): shrine

This word has the same situation as the previous one. Look at the following table to review various strategies used to find its English equivalent.

Table 8: marqad (مرقد): shrine

Pairs 1-2 and 6-7	Pairs 3-5	Pair 8
Persian-English dictionary	Internet (Google Translate)	Left out

Unlike the previous word, this one is in singular form and can be found in Persian-English dictionaries more easily. Therefore, half of the participating pairs consult such a dictionary to come up with an instant, lexically supported solution. Pairs 3 to 5 also seek a ready-made solution, however, of a different nature. They get Google Translate to provide them with the most common equivalent. Here, pair 8 does not produce any translation.

Mavad-e monfajare (مواد منفجره): explosives

This is not only a semi-technical Arabic term, but also of a compound (perhaps redundant) nature. As can be seen from the following table, therefore, various strategies are needed to deal with its translation into English.

Table 9: mavad-e monfajare (مواد منفجره): explosives

Pairs 1, 3-4, and 6-7	Pair 2	Pair 8	Pair 5
Internet (Google Translate)	Persian-English dictionary	Internal resources and English-Persian dictionary	Left out

To find the most common equivalent, five pairs prefer to merely rely on Google Translate as an internet support. Pair 2 consults a Persian-English dictionary to find an appropriate equivalent and finds nothing better than the first definition provided in the dictionary. Pair 8 not only resorts to their internal resources, but also weighs their knowledge against an English-Persian dictionary to be reassured of the result. Pair 5 wants to get on with their translation and find the best equivalent; however, they run out of time and do not translate this part.

Mantaq-e amniati (منطقه امنیتی): security zone

This semi-technical noun phrase is split by all the pairs (like green zone example) and is examined part-by-part. Since the first component ('mantaq-e') was defined in the aforementioned example, there remains only one part ('amniati') to be scrutinized.

Table 10: mantaq-e amniati (منطقه امنیتی): security zone

Pairs 1 and 4	Pairs 2-3 and 7-8	Pair 6	Pair 5
Internet (Google Translate)	Contextual clues and internal resources	Internal resources	Left out

Pairs 1 and 4 use Google Translate to be equipped with another ready-made solution and refer to no other sources. Based on the aforementioned similarity between this phrase and 'green zone', however, half of the pairs rely on both contextual clues and their own knowledge. Pair 6 simply relies on their internal resources and gives no explicit reason for their tentative equivalents. Again, pair 5, who has run out of time, does not translate this part also.

Considering all the translations and discussions of the participants, both during and after the process of translation, and setting Schubert Schubert (2009) as the basis of enquiry, the researchers came up with the

following taxonomy. As can be seen, the external resources used in this study were further categorized into 6 sub-types according to the general definition of Schubert.

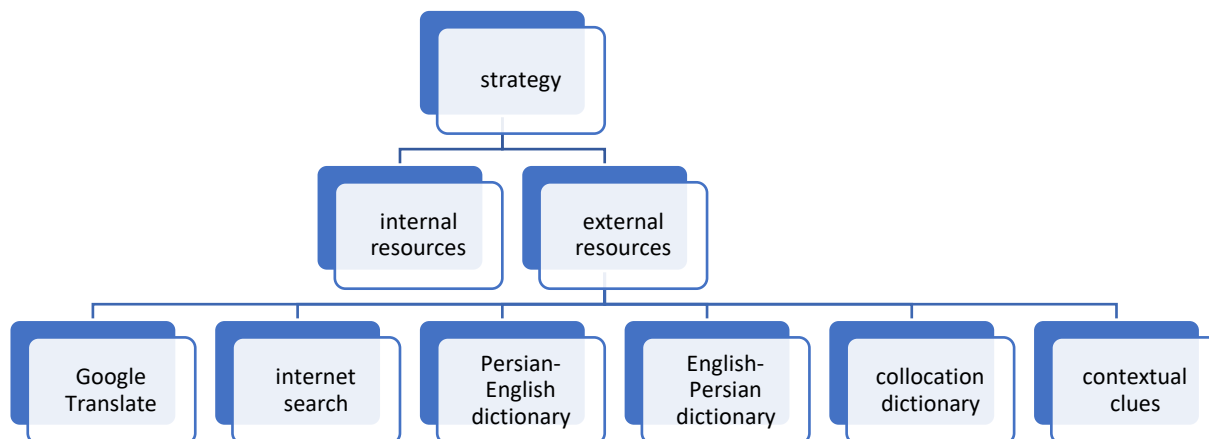


Figure 1: Classification of different strategies used to find equivalents.

The following table shows the distribution of different criteria used by the participants to come up with their final products:

Table 11: Decision-making criteria

Criterion	frequency
Support on the internet	29
No reason is given	17
Discussion of lexical meaning	9
Personal evaluation	7
Tentative solution	4
Nothing better can be found	2
Want to get on with it	2

As explained above, in order to find out the strategies which can lead to successful choice of equivalent, three experts rated all the translations based on an

either or not criterion. That is, they read each translation of each term and assigned code 1 to acceptable and 0 to unacceptable cases. A Kappa inter-rater reliability test was then run to identify the two raters who had more agreement. The inter-rater reliability table showed almost perfect agreement between raters 1 and 2 judgments ($\kappa = .892$ $p < .0005$; which is above the range of chance agreement). Cohen's kappa (κ) can range from -1 to +1. Based on the guidelines of Altman (1999), and adapted from Landis & Koch (1977), a kappa (κ) of .892 represents almost perfect agreement. Furthermore, since $p = .000$ (which actually means $p < .0005$), our kappa (κ) coefficient was statistically significantly different from zero. It should be mentioned that the inter-rater reliability value between raters 1 and 3 and, 2 and 3 were .453 and .508, respectively. Therefore, the first two raters' decisions were used as the basis of judgment.

Table 12: Inter-rater reliability between experts 1 and 2

	Value	Asymp. Error ^a	Std.	Approx. T ^b	Approx. Sig.
Measure of Agreement Kappa	.892	.053		7.670	.000
N of Valid Cases	74				

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Running a Chi-Square test, the researchers tried in the next step to find out whether there was any significant relationship between the strategies used by the participants to find proper equivalents and the acceptability of the selected equivalents. The two-sided asymptotic significance level obtained through the Pearson Chi-Square test was .029 ($< .05$). Thus, the aforementioned relationship was found to be not only

present, but also significant. That means, the strategies used by translation students (and perhaps professional translators) to decide on the most appropriate equivalent is determinant of the acceptability of their translations. The following figure depicts the overall acceptability of the equivalents produced through different strategies

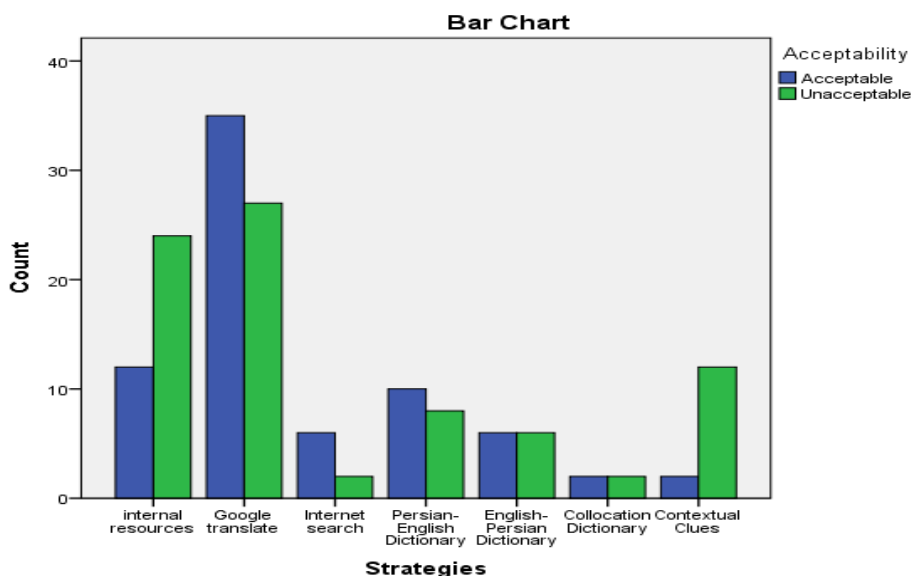


Figure 2: The difference between different strategies in terms of the acceptability of their products.

6. CONCLUSION

In this study, the problem of equivalence was investigated using a combination of process and product research. Analyzing both dialogue protocols and written translations of a sample of undergraduate translation students, the researchers extended Schubert's (2009) general classification of translation strategies. That is, various sub-types of external resources used to find equivalents for challenging technical and/or semi-technical terms were identified based on Schubert's definition (look at figure 1). Moreover, using Dam-Jensen (2012), the frequency of various criteria based on which the students had finalized their decisions on appropriate equivalents were measured. It was found that most of the students had not been competent enough to find evidence for and justify their decisions and, had mostly resorted to the internet to find support for their choices. In addition, many of those who had used this or any other identified external resources either could not explain their reasons or judged simply based on intuition. Running a Chi-Square test, moreover, a significant relationship was found to be present between the strategies and the acceptability of products. All in all,

in this new area of process-oriented training (Massey, 2005), translation teachers can insightfully instruct students on various strategies used to find equivalence for potentially challenging terms, especially those which are more likely to lead to acceptable translations. Moreover, the combination of process and product research, as used in this study and many others (e.g. Dam-Jensen, 2012), can be helpful in tapping into other translation-related problems. Despite these and many other benefits process research can bring, this study highlighted some disadvantages of dialogue protocol, as well. The researchers, for example, encountered the same fact as underlined by Kussmaul (1995), N. Pavlović (2007), and T. Pavlović (2013) that one member may become the leader due to personal characteristics; a finding that re-emphasizes the need for combining protocols with other methods of data collection and analysis.

REFERENCES

- [1] Aryanpur Kashani, A. (Ed.) (1984) Aryanpur Persian-English Dictionary. Tehran: Amir-Kabir Publications.

- [2] Bowker, L. (1999). Exploring the potential of corpora for raising language awareness in student translators. *Language awareness*, 8(3-4), 160-173.
- [3] Chesterman, A. (2008). On explanation. *Benjamins Translation Library*, 75, 363.
- [4] Dam-Jensen, H. (2012). Decision-making in translation: A pilot study of students' translation processes. *Fachsprache*, XXXIV, 3-4.
- [5] Deuter, M. (Ed.) (2008) Oxford collocations dictionary: for students of English. Oxford University Press.
- [6] Flower, L. (1993). *Problem-solving strategies for writing*. Fort Worth: Hartcourt Brace Jovanovich College Publishers.
- [7] Fresch, M. J. (2001). Journal entries as a window on spelling knowledge. *The Reading Teacher*, 54(5), 500-513.
- [8] Gordon, R. T., & Heins, L. A. (1995). Handbook for reading. *Language Arts Volunteers: Think Aloud*.
- [9] Haim, S. (Ed.) (1981) The New Persian-English Dictionary. Tehran: Farhang Moaser.
- [10] Hansen, G. (2005). Experience and emotion in empirical translation research with think-aloud and retrospection. *Meta: Journal des traducteursMeta:/Translators' Journal*, 50(2), 511-521.
- [11] Jääskeläinen, R. (2000). Focus on methodology in think-aloud studies on translating. *Tapping and Mapping the Process of Translation: Outlooks on empirical research, Amsterdam and Philadelphia: John Benjamins*, 71-82.
- [12] Jakobsen, A. L. (2003). Effects of think aloud on translation speed, revision, and segmentation. *Triangulating Translation: Perspectives in Process Oriented Research*, 45, 69.
- [13] Kiraly, D. C. (1995). *Pathways to translation: Pedagogy and process*: Kent State University Press.
- [14] Kovacic, I. (2000). Thinking-aloud protocol-interview-text analysis. *Benjamins Translation Library*, 37, 97-110.
- [15] Krings, H. P. (2005). Wege ins Labyrinth—Fragestellungen und Methoden der Übersetzungsprozessforschung im Überblick. *Meta: Journal des traducteursMeta:/Translators' Journal*, 50(2), 342-358.
- [16] Kussmaul, P. (1995). *Training the translator* (Vol. 10): John Benjamins Publishing.
- [17] Massey, G. (2005). Process-oriented Translator Training and the Challenge for E-learning. *Meta: Journal des traducteursMeta:/Translators' Journal*, 50(2), 626-633.
- [18] Pavlović, N. (2007). *Directionality in Collaborative Translation Processes*. (unpubl. PhD dissertation), Universitat Rovira i Virgili, Spain.
- [19] Pavlović, T. (2013). The role of collaborative translation protocols (CTPs) in translation studies. *Jezikoslovlje*, 14(2), 549-563.
- [20] Pym, A. (2009). *Exploring translation theories*. London: Routledge.
- [21] Schubert, K. (2009). Positioning translation in technical communication studies. *Journal of Specialised Translation*, 11, 17-30.
- [22] Soria, J. (2001). A Study of Ilokano Learners' Lexical inference Procedures through Think-Aloud. *Second Language Studies*, 19(2), 77-110.
- [23] Toury, G. (2012). *Descriptive Translation Studies and beyond: Revised edition* (Vol. 100): John Benjamins Publishing.
- [24] Varantola, K. (2000). *Translators, dictionaries and text corpora*. Paper presented at the I corpora nella didattica della traduzione.