



# An Introduction to the Ambiguity Tolerance: As a Source of Variation in English-Persian Translation

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## Abstract

Different individuals provide different translations of different qualities of the same text. This may be due to one's dominant cognitive style and individuals' particular personal characteristics (Khoshshima & Hashemi Toroujeni, 2017) in general or ambiguity tolerance in particular. A certain degree of ambiguity tolerance (henceforth AI) has been found to facilitate language learning (Chapelle, 1983; Ehrman, 1999; Ely, 1995). However, this influential factor has been largely overlooked in translation studies. The purpose of this study was to find the relationship between AT and translation quality by identifying the expected positive correlation between the level of AT and the numbers of translation errors. Out of the 56 undergraduates of English-Persian Translation at Chabahar Maritime University (CMU), a sample of 34 top students was selected based on their scores on the reading comprehension which enjoys a special focus in many contexts (Khoshshima & Rezaeian Tiyyar, 2014) and structure subtests of the TOEFL. The participants responded to the SLTAS questionnaire for AT developed by Ely (1995). The questionnaire had a high alpha internal consistency reliability of .84 and standardized item alpha of .84. In the next stage of the research, the participants translated a short passage of contemporary English into Persian, which was assessed using the SICAL III scale for TQA developed and used by Canadian Government's Translation Bureau as its official TQA model (Williams, 1989). Then, to find the relationship between the level of ambiguity tolerance in undergraduates of English-Persian translation at Chabahar Maritime University and their translation quality, analysis of the collected data revealed a significant positive correlation ( $r=0.440$ ,  $p<.05$ ) between the participants' degree of AT and the numbers of errors in their translations. Controlling for SL proficiency, the correlation was still significantly positive ( $r=.397$ ,  $p<.05$ ). Accordingly, it was concluded that the more intolerant of ambiguity a person is, the more errors s/he is likely to make while translating; conversely, the more tolerant of ambiguity a person is, the higher the quality of his/her translation will be. Therefore as expected, analysis of the data revealed a positive correlation throughout the sample between ambiguity intolerance and translation quality.

**Keywords:** Ambiguity; Ambiguity (In)tolerance; Ambiguity (In)tolerance Level

## 1. Introduction

Different individuals may provide different translations of different qualities of the same text of the modern English which is the result of several centuries of development (Zare Behtash & Hashemi Toroujeni, 2017). This may be due to a number of factors, including one's dominant cognitive style or one's most preferred way among the several ways of perceiving and processing information; that is, each individual is inclined toward a unique set of information retrieval and processing preferences that compromise a cognitive style dominant over other cognitive styles. The difference between the individuals' cognitive styles may be one of the factors that affect the quality and/or diversity of the translations of the same text they provide under the same circumstances. Although cognitive style research has already found its researchers in many disciplines such as language learning, teaching and testing, to the best of the researcher's knowledge, just a few empirical studies on translation studies to find the relationship between such important factors and any aspect of translation have so far been conducted in academic and educational contexts which have been proved to be crucial is future success and achievements (Ebrahimi & Khoshshima, 2015). The interdisciplinary nature of translation studies, however, allows for the incorporation of these factors and application of the obtained results.

The incorporation of this factor i.e. ambiguity tolerance has so far been largely overlooked in translation studies. In fact, the attempts to enhance translator trainees' translation quality have so far only concentrated on linguistic factors

such as source language competence, target language competence, terminology awareness, and so on. Even extralinguistic factors do not include such personality related issues as cognitive style. This is why an awareness of the students' cognitive style preferences or generally personal preferences can be very useful in many ways (Khoshshima, Hosseini & Hashemi Toroujeni, 2017). For example, it can help the students focus on translating the types of texts that fit within their respective cognitive styles or, alternatively, adapt their cognitive styles to the needs of certain text types. Translator trainees render the same text with different quality rankings; even though they possess all the required linguistically criteria such as SL and TL competence, terminology knowledge, register and style knowledge or extralinguistically criteria such as cultural knowledge, social knowledge and so on required for being a translator. The researcher of the present study assumed that generally such a problem has to do, at least in part, with the cognitive styles of the individuals, and that particularly it is related to the extent they are tolerant of ambiguities; that is, some people's cognitive style; specifically ambiguity intolerance here, does not allow them to reach the higher levels of translation proficiency while some others' different cognitive style, ambiguity tolerance here, does. Although ambiguity tolerance has been investigated in language learning and teaching (Chapelle, 1983; Chapelle & Roberts, 1986; Ehrman, 1999; El-Koumy, 2000; Ely, 1989; Ely, 1995), it has received no more attention in translation studies than Robinson's (2001) call for research to be conducted on cognitive/learning style in general. Finding the relationship between ambiguity tolerance (AT) and translation quality could then lead to a deeper understanding of the concept of AT in addition to opening up new perspectives in translation studies.

Although many disciplines like language teaching, learning and testing have so far utilized the field of cognitive style in general (Brown H. D., 2006; Chapelle & Green, 1992; Hansen & Stansfield, 2006; Ziahosseiny, 2007) and ambiguity tolerance in particular (Chapelle, 1983; Chapelle & Roberts, 1986; Ely, 1995), no such serious attempt has been made in translation studies. This is why the findings of cognitive style research in translation studies can lead to a better understanding of the individual differences among translators, which can in turn yield better insights into the nature of translation as a process, as well as the translator as a processor. According to Robinson (2001), since good translators are always in the process of becoming translators by learning and knowing to translate better, learning more about language and culture and translation can be very useful for both student translators and professional translators by leading them to be aware of diversity of learning styles" (p.46). Thus, helping translator trainees or professional translators discover their cognitive or learning styles in general and degree of ambiguity tolerance, in particular, means helping them become more aware of their own strengths and weaknesses of cognitive style preferences as translators. The advantage is that they can then, for example, either choose the types of text that match their styles or, alternatively, adapt their styles to the needs of certain texts.

The present research was designed to identify empirically the hypothesized positive correlation between ambiguity tolerance and translation errors. This hypothesized positive correlation was based upon the convergence of a number of theories. In the field of translation quality, the works of TQA researchers including House (1981), Martinez Melis and Hurtado Albir (2001), and especially Williams (1989), provided the theoretical foundation. Regarding ambiguity tolerance, Frenkel-Brunswik's (1948) identification of ambiguity tolerance as a personality variable as well as characteristics of individuals who were intolerant of ambiguity formed a part of the required theoretical basis. Budner's (1962) classification of ambiguous situations into the three novel, complex, and contradictory types and their relationship with the ambiguity types outlined by Newmark (1988) provided the link between ambiguity tolerance and translation. Finally, Furnhani and Ribchester's (1995) comprehensive review of the ambiguity intolerance (AI) literature provided additional theoretical resources. According to Budner (1962), ambiguity in general refers to three basic situations: 1) new situations, where the number of cues leading to understanding is not sufficient; 2) complex situations, where there are too many cues; and 3) contradictory situations, where contradictory structures result from the cues available. All these situations are found in translation, too. A neologism, for example, is a totally new situation for the translator, where there are insufficient cues available for the translator to understand the newly introduced word or phrase. So, in this situation, there is any new word, phrase, structure, construction, idiom or expression, technical term, or anything the translator does not know. Complex and contradictory translation situations are also likely to be found while translating. All these situations are represented, in full or in part, by Newmark's (1988) ambiguity types outlined in the subsequent sections below. Newmark, (1988) distinguishes between two types of ambiguity: "deliberate" and "unintentional" (p. 206). He also postulates that a deliberate ambiguity must be retained while an unintentional one, which "is usually clarified in the context", has to be translated in a way to avoid any misunderstanding. What is important to us is the implication derived from Newmark that the translator has first to identify these ambiguities and then to be tolerant enough to handle them properly.

Elsewhere in Newmark (1988), ambiguity is defined "in the sense of a stretch of SL text, normally a word or a syntactic structure, having apparently more than one meaning, in or in spite of its context" (p. 218). Newmark (1988), defines ambiguity "...is the sense of a stretch of SL text, normally a word or a syntactic structure, having apparently more than one meaning, in or in spite of its context" (p. 218). This could be an example of Budner's (1962) complex, or even contradictory, situations. Below is a description of the several types of ambiguity outlined by Newmark (1988).

Ambiguity tolerance dimension of cognitive style is defined as an individual's degree of tendency to perceive ambiguous situations and stimuli as desirable, enjoyable, and challenging (Budner, 1962). People with lower degrees of tolerance for ambiguity are usually afraid of ambiguous stimuli. These people do not tend to handle such situations with ease and comfort, and may not pursue to achieve their desires if confronted by such situations. On the other hand, individuals with higher degrees of tolerance for ambiguity normally see ambiguous stimuli as desirably challenging situations and tend to succeed more easily in such situations.

Grammatical ambiguity includes sentences or phrases with ambiguity at the level of syntax, which is posited by Newmark (1988) to “be poorly written” (p. 218). Newmark (1988) advises the translators to be “intensively and selectively sensitized to” such ambiguities in the SL (p. 218). It can well be implied that a certain degree of tolerance is required for this sensitization to occur. Newmark (1988) believes that these ambiguities are seen more in English and they are more common in this language than the Romance languages. He also asserts that this is because fewer grammatical inflections may be seen in English language (p. 218). Grammatical and functional words, prepositions, pronouns (whose referents are often difficult to identify), connectives, and phrasal verbs are some linguistic elements and categories that are identified by Newmark as the main sources of grammatical ambiguity. According to the recognition of Newmark (1988), lexical kind of ambiguity (ambiguous words) is more common than the other kinds of ambiguities, and it is really more difficult to clear up ambiguous words than ambiguous structures (grammatical ambiguity). He adds that this difficulty is due to various meanings the words might have (p. 219).

Pragmatic ambiguity is another type of ambiguity identified by Newmark (1988). By considering “There’s a bull in the field” example that may mean “Let’s get out”, Newmark (1988) claims that a literal translation could be in line with such ambiguity. This is because such culture-free pragmatic signals are the same in all languages (p. 219). Furthermore, he posits that such ambiguities are more common in written language than in spoken language. Because, in spoken language, the extra-linguistic features such as tone, intonation, and stress patterns usually eliminate unwanted meanings (p. 219).

Cultural terms, according to Newmark (1988), usually do not cause much ambiguity because they are culture-specific and do not overlap in different cultures. This is why the cultural ambiguity does not generate more difficulties and challenges than the other types of ambiguities. However, he further explains that if the meaning or function of a certain cultural word has changed over time, it may become ambiguous. By idiolectal ambiguity, Newmark (1988) refers to words or expressions “peculiar” to the speaker (p. 220). Referential ambiguity is regarded by Newmark (1988) as something like a superordinate covering all the other ambiguities. However, he adds that a special kind of referential ambiguity might refer to cases where proper names are “not unmistakably identified” (p. 220). Metaphorical ambiguity is believed by Newmark (1988) to be found “in most sentences if you try hard enough” (p. 220). His only suggested strategy for translating such ambiguities “is to translate the most probable sense and to put the less probable sense in a footnote” (p. 220).

All the above ambiguities require a certain degree of tolerance by the translator, which may affect the quality of the translation being provided. Let us now turn to this personality variable of ambiguity tolerance and its relationship to language in general and to translation in particular.

The concept of ambiguity tolerance has been under focus in psychology for more than six decades, starting from the early work by Frenkel-Brunswik (1949). According to Furnham and Ribchester (1995), ambiguity intolerance (AI) has been perceived as a variable operating in personality (Budner, 1962), organizations (Furnham & Gunter, 1993), and different cultures (Hofstede, 1984), as well as an indicator of individual differences within clinical and organizational psychology (Anderson & Schwartz, 1992; Nutt, 1993; Tsui, 1993). More recently, many references have been made to AI in language learning and teaching as well (Chapelle, 1983; Chapelle & Green, 1992; Chapelle & Roberts, 1986; Ehrman, 1999; El-Koumy, 2000; Ely, 1989, 1995). However, it has not yet received any attention from translation studies scholars in academic contexts.

According to the definition of ambiguity tolerance given by Furnham and Ribchester (1995), it is the way based on which the information about ambiguous stimuli are perceived by a collection of complex or unfamiliar clues (p. 179). The process of translation itself can be regarded, in whole or in part, as an ambiguous situation requiring a certain degree of tolerance. Not only is this ambiguity found in the individual elements in a text, as outlined by Newmark (1988), but the translation process as a whole can be regarded as an ambiguous situation that requires a certain degree of tolerance.

Positing AT as a one-dimensional variable on a continuum with low and high extremes, Furnham and Ribchester (1995) further attribute stress, premature reaction, and avoidance of ambiguous stimuli to people with low tolerance for ambiguity. A more ambiguity tolerant person, on the other hand, “perceives ambiguous situations/stimuli as desirable, challenging, and interesting, and consequently s/he neither denies nor distorts their complexity of incongruity” (p. 179). It is pertinent, therefore, to postulate that translators who are more tolerant of ambiguity will be better than those less tolerant; because, more tolerant translators tend to see the translation process as a desirable, challenging, and interesting task, rather than a boring fight with the difficulties in a task as ambiguous as translation.

Frenkel-Brunswik (as cited in Furnham & Ribchester, 1995) defined a good number of behavioral dispositions for ambiguity (in)tolerance:

... resistance to the reversal of apparent fluctuating stimuli, the early selection and maintenance of one solution in a perceptually ambiguous situation, inability to allow for the possibility of good and bad traits in the same person, acceptance of attitude statements representing a rigid, black-white view of life, seeking for certainty, a rigid dichotomizing into fixed categories, premature closure, and remaining closed to familiar characteristics of stimuli (p. 180).

These dispositions, however, vary on a continuum from low and middle to high degrees of tolerance for ambiguity. Thus an extremely low AT person is ideally expected to reflect these dispositions to the greatest extent possible,

whereas the least amount of such tendencies is found in an extremely high AT person. In fact, these can be regarded as the dispositions for (in)tolerance of ambiguity. The pertinence of such dispositions to translation and translators is discussed in the following paragraphs.

As examples of "fluctuating stimuli", one could refer to the variations in the use of a single word in different contexts, and utterances that mean something pragmatically and something else semantically. These fluctuating stimuli are likely to be reversed in their order; for example, the single word above may mean the same thing in several places throughout a piece of text, but happen to mean differently somewhere else, hence causing a reversal in the fluctuating stimuli. Translators with different degrees of tolerance for ambiguity are, therefore, likely to respond differently to these reversals.

Consider the case of a "perceptually ambiguous situation" in a piece of text. Of course, as mentioned earlier, these perceptual ambiguities need not necessarily be confined to the types of ambiguities outlined in Newmark (1988); rather, any single segment of a text could be an ambiguous situation in its own right; because, according to Jifi Levy (as cited in Hermans, 2007), translation is a "constant decision-making" (p. 83); hence, there is a need for a certain degree of tolerance for ambiguity for any prompt decision making process. Thus, a translator on the lower spots on our AT continuum will more likely tend to arrive at early conclusions in such situations and maintain their selections than one on the higher spots. Definitely, the "inability to allow for the possibility of good and bad traits in the same person" is again not to be confined to the coexistence of good and bad traits only; rather, this statement can be applied to all contradictions and conflicts within any given situation. Moreover, internal conflicts and contradictions in people could be a result of external stimuli. Therefore, coexisting textual, pragmatic, functional, and linguistic contradictions and conflicts within a text may lead to internal contradictions and conflicts within the translator, which again require a certain degree of tolerance. The degree to which one adheres to "rigid, black-white" views could affect his/her decisions in different situations. In translating technical and other texts of an informative nature, this "rigid, black-white" view could perhaps be of a great help. However, translating stories, novels, poetry, advertisements, and other text types of a literary nature would require more tolerance for the possible lack of such clear-cut distinctions. It is likely that one cannot reach certainty in some translation situations. This inability to reach certainty may, for example, arise from a lack of enough contextual clues for the meaning of a word or phrase. It could be experienced while dealing with any of the ambiguity types outlined in Newmark (1988). Or, according to Ely (1989), ambiguity is uncertainty in language learning contexts. Again, different individuals show varying degrees of tolerance for this inability.

A tendency to dichotomize everything into rigid categories is another AT disposition listed by Frenkel-Brunswik (as cited in Furnham & Ribchester, 1995). In translation, extreme degrees of such a tendency are likely to result in, for example, excessive concern for achieving exact equivalence between the ST and TT, which might, in turn, lead to unnatural, word-for-word renderings.

Hasty conclusions about the meaning or translation of a certain piece of text can be considered as a result of "premature closure", another disposition to be found in every individual in varying degrees. It can be derived from "premature closure" that a translator with the highest degree of tolerance for ambiguity will ideally tend to avoid coming to such early conclusions more often than one with the lowest degree of AT. Finally, a translator who is most tolerant of ambiguity will expectedly avoid "remaining closed to familiar characteristics of stimuli" to the highest extent possible, whereas one who is least tolerant of ambiguity will again show the highest degree of such a disposition. This can occur when, for example, the translator is dealing with a piece of text such as a word, phrase, clause, and sentence with a certain meaning or translation already existing in his/her mind; in this case, the least ambiguity tolerant translator is expected to stick to the already existing data, i.e. the "familiar characteristics of stimuli", without seeking recourse to and checking with external sources; the most ambiguity tolerant translator, on the other hand, is expected to do the latter more often.

The same characteristics were also later categorized into "primary" and "secondary" types by Bochner (as cited in Furnham & Ribchester, 1995), including (a) Rigid dichotomizing into fixed categories, that is, "need for categorization"; (b) seeking for certainty and avoiding ambiguity, that is, "need for certainty"; (c) inability to allow for the coexistence of positive and negative features in the same object, for example, "good" and "bad" traits in the same person; (d) acceptance of attitude statements representing a rigid white-black view of life; (e) preference for the familiar over the unfamiliar sources; (f) positive rejection of the different or unusual materials; (g) resistance to reversal of apparent fluctuating stimuli; (h) early selection and maintenance of one solution in a perceptually ambiguous situation; and (i) premature closure. Secondary characteristics are all the traits that are (a) authoritarian; (b) dogmatic; (c) rigid; (d) closed minded; (e) ethnically prejudiced; (f) uncreative; (g) anxious; (h) extra punitive; and (i) aggressive (p. 180).

Nevertheless, cognitive style is a very broad term covering many dimensions that may influence translation quality. This study attempted to find the relationship between the translator trainees' (in)tolerance of ambiguity as a dimension of the cognitive style and the number of errors in their translations. The objectives of this study were twofold. First the study aimed to explore the relationship between Chabahar Maritime University (CMU) translator trainees' levels of (in)tolerance for ambiguity and levels of translation quality: more specifically, the study described the relationship between the independent variable (translator trainees' levels of (in)tolerance for ambiguity) and the dependent variable (assessed levels of translation quality of the participants represented by the number of errors in their translations). Second, the findings of this research could lead to the incorporation of such a largely overlooked cognitive factor as tolerance for ambiguity in translator training programs as well as the development of a deeper understanding of the

factor, which may enhance or inhibit translation quality levels. Now we turn to the various studies conducted within the area of ambiguity (in)tolerance and language learning and teaching.

## 2. Literature review

The concept of ambiguity tolerance (TA) was originally developed by Frenkel-Brunswik (1948) as a perceptual personality and emotional factor. Several studies were conducted after the introduction of the paper over the last 60 years (Merrotsy, 2013) to examine this variable. Frenkel-Brunswik's research work on the relationship of TA with authoritarianism has been cited approximately 10,000 times (Adorno et al., 1950). Adopting TA as an individual difference and perceptual personality factor (Budner, 1962) was extensively used in various fields of applied sciences such as clinical psychology (Lachance et al., 1999), and organizational behavior (Judge et al. 1999). The present research deals with updating the review by Furnham (1994) and Furnham and Ribchester (1995) on the measurement of ambiguity tolerance.

Since the beginning of the use of ambiguity tolerance in research, various methods have been developed to measure this important concept. According to Furnham and Ribchester (1995), the first attempts to measure ambiguity tolerance were made in the interpersonal situations by counting the number of questions the participants asked when they wanted to clarify an ambiguous situation.

One of the first uses of ambiguity of tolerance was made by Frenkel-Brunswik (1948), who studied the attitudes of 100 adults and 200 nine-to-fourteen-year-old Californians toward ethnic prejudice. She (as cited in Furnham & Ribchester, 1995) argued that ambiguity tolerance was "a general personality variable relevant to the basic social orientation" (p. 179). One of the seminal works on the relationship between cognitive style and second language acquisition is Chapelle and Roberts (1986), with primary focus on ambiguity tolerance and field independence as two dimensions of cognitive style. Using a Multiple Regression Analysis, their study revealed that ambiguity tolerance and field independence caused a significant amount of variation on the second language performance of adult learners of English as a second language in the United States. Another study indirectly confirming the results of Chapelle and Roberts (1986), and only dealing with the relationship of ambiguity tolerance and English as a foreign language, is that of Kazamia (1999), which assessed the degree of tolerance for ambiguity found in Greek civil servants while learning English as a foreign language by using the SLTAS questionnaire. The results showed that Greek adult learners' tolerance levels were not the same in every skill and that they were especially intolerant of ambiguities while communicating their ideas in English. According to the findings of a study that was conducted by Sidanius (1978, 1985), Swedish conservatives students showed more tendency to be tolerant of ambiguity than liberal ones. His findings were compatible with the results of the study conducted by Fibert and Ressler (1998) on Israeli students of university.

El-Koumy (2000) conducted a study to examine the differences in EFL reading comprehension among high, middle and low-ambiguity tolerance kinds of students, using the MAT-50 and a reading comprehension sub-test of the TOEFL. The results were analyzed using both ANOVA and t-test methods. The ANOVA results showed a significant difference in the mean scores among the high, middle, and low ambiguity tolerance groups ( $F=9.56, p<.05$ ), while the t-test results revealed that the moderate ambiguity tolerance group scored significantly higher than the low and high ambiguity tolerance groups ( $t=4.22, p<.05$ ;  $t=3.24, p<.05$ , respectively). The low and high ambiguity tolerance groups were not found to be significantly different. Furthermore, based on the results of a study done in Japan, the participants with more innovative political attitudes were more tolerant of ambiguity than the conservative participants (Harada, 1989). TA that can be considered as a cross-culturally general personality or emotional variable is related to the ideological orientation. In spite of the existence of some minor differences in the focus of their researches, Jost et al. (2003a, 2003b) and Van Hiel et al. (2010) conducted meta-analysis kind of research and concluded that right-wing attitudes and ideologies demonstrated more tendency for tolerance of ambiguity.

The concept of tolerance of ambiguity has been investigated in many different fields such as language teaching and learning. Among other fields, it has specifically been proved to be influential in language learning (Chapelle, 1983; Chapelle & Roberts, 1986; Ehrman, 1999; El-Koumy, 2000; Ely, 1995; Kazamia, 1999). However, it seems that the concept has yet received little or no attention, and a serious investigation of the concept in academic contexts will be very useful.

In order to explain the need for cognitive operation, two motivational dispositions including urgency and permanence dispositions were emphasized by Kruglanski and Webster (1996). Chirumbolo (2002) expounds that the low ambiguity tolerance that is expressed by individuals who need the high level of cognitive operation can be considered a dispositional trait that may have great influences on both social behavior and cognitive style (p. 604). According to the findings of the study conducted by Johansson (2000), there was a positive correlation between risk anxiety and ambiguity (in) tolerance. The conclusions would be useful for the purpose of investigating the correlation of cognitive personality factor and the humanist-normative tendencies.

The concept of tolerance of ambiguity has been under focus in especially psychology for more than six decades now, since the early work by Frenkel-Brunswik (1948). According to Furnham and Ribchester (1995), tolerance of ambiguity has been perceived as a variable operating in personality (Budner, 1962), organizations (Furnham & Gunter, 1993), and different cultures (Hofstede, 1984), as well as an indicator of individual differences within clinical and organizational psychology (Anderson & Schwartz, 1992; Nutt, 1993; Tsui, 1993). Moreover, several references have been made to tolerance of ambiguity in language learning and teaching as well (Chapelle, 1983; Chapelle & Green,

1992; Chapelle & Roberts, 1986; Ehrman, 1999; El-Koumy, 2000; Ely, 1989, 1995). However, it has not received any serious attention from translation studies scholars in academic contexts.

Nevertheless, a question still remains unanswered: do higher degrees of tolerance for ambiguity necessarily guarantee better performance? Research in language learning (Kazamia, 1999) has indicated that too much tolerance for 'ambiguity is likely to result in "language problems such as unquestioning acceptance and cognitive passivity" (p. 71). Kazamia further suggests that people with moderate degrees of tolerance for ambiguity are more likely to succeed in language learning. He also points to the support of other researchers (Ehrman, 1996; Ely, 1995) for the idea that "high tolerance may cause cognitive passivity and low tolerance may impede language learning. They declare that midpoint ambiguity tolerance seems to be satisfactory" (p. 71). However, the literature is void of any empirical conclusion as to the value of such a helpful midpoint; hence the need for investigation in this area is felt. The independent variable for this research is the translator trainees' (in)tolerance of ambiguity scores. The dependent variable is the quality of the translator trainees' translations represented by the number of errors in their translations. It is hypothesized that the higher the levels of the participants' (in)tolerance for ambiguity, the more errors they are likely to make in their translations. Regarding to the aims of the study, the following question is addressed in the present study:

**RQ.** Is there any statistically significant positive correlation between CMU translator trainees' levels of (in)tolerance for ambiguity and the number of errors in their translations?

## 2. Method

The design of this descriptive study was non-experimental and correlational; non-experimental because no attempts were made to manipulate any variables or apply any treatments; correlational because it tried to look for the relationship between the variables (levels of ambiguity tolerance and levels of translation quality represented by the number of translation errors); nevertheless, no causations were to be established. Then, the purpose of the research was to explore the relationship between the individuals' levels of ambiguity tolerance and levels of translation quality represented by the number of translation errors.

### 2.1 Participants

The population of the study consisted of 21 sophomore (2007 batch), 20 junior (2006 batch), and 15 senior (2005 batch) undergraduates of English-Persian Translation field of study at Chabahar Maritime University (CMU). Freshmen students were excluded because they had not yet passed the preliminary translation subjects. Females comprised 53.57% (N = 30) and males 46.43% (N = 26). Ultimately, a sample of 34 top students was drawn out of the population by administering the TOEFL Reading Comprehension and Structure sub-tests to them. The sample comprised 50% (N = 17) females and 50% (N = 17) males.

### 2.2 Instruments

The following instruments were used to obtain the necessary data during the course of the study. The TOEFL reading comprehension and structure sub-tests were administered to the target population from CMU to select the 34 top students to take part in the present research. Another data collection instrument utilized in this research was the measure of (in)tolerance for ambiguity (SLTAS). The SLTAS (Second Language Tolerance of Ambiguity Scale) questionnaire developed by Ely (1995) for measuring (in)tolerance of ambiguity was used to assess the participants' degrees of (in)tolerance for ambiguity; according to this scale, the higher the score, the more intolerant of ambiguity the person is. The SLTAS is a 12-item, Likert response questionnaire with reported Cronbach alpha internal consistency of .84 and standardized item alpha of .84 (Kazamia, 1999, p. 73). This questionnaire was selected because of its high reliability and validity as well as the fact that it is the only (in)tolerance of ambiguity scale designed for language learning purposes. A 249-word passage of contemporary English (Translation Test) was used for translation by the participants into Persian. In order to ascertain that the text matched the grade level of the subjects, it was graded for readability using the Flesch-Kincaid Grade Level test, which is based on a formula built into Microsoft® Office Word. The rating of the text by this formula is based on a U.S. school grade level; for example, a score of 8.0 means that an eighth grader can understand the document. The formula for the Flesch-Kincaid Grade Level score is  $(.39 \times ASL) + (11.8 \times ASW) - 15.59$ , where ASL represents average sentence length (the number of words divided by the number of sentences) and ASW means average number of syllables per word (the number of syllables divided by the number of words). The grade level of the selected passage was 11.3 which is suitable for undergraduate students.

### 2.3 Procedure

The present study was conducted at the English Department of Chabahar Maritime University (CMU). First, the TOEFL reading comprehension and structure sub-tests were administered to the participants to assess their levels of proficiency in the source language and, thus, to select the top 34 homogenous participants to take part in the research. Then, to measure the participants' degree for ambiguity, the 34 selected participants were asked to fill in the SLTAS questionnaire (Appendix A: The Second Language Tolerance of Ambiguity Scale (SLTAS)). Finally, the subjects were asked to translate a short passage of English into Persian (Appendix B: The Translation Test). The translations were then rated based on the SICAL scale for TQA (Table 1: Modified SICAL Scale for TQA).

Table 1. Modified SICAL Scale for TQA

Rating	Description	Maximum number of major and minor errors per 400 words of ST			
		Major	(-)points	Minor	(-)points
A	Superior quality	1	2	6	6
B	Fully acceptable	2	4	12	12
C	Revisable	3	6	18	18
D	Unacceptable	>3	×2	>18	×1

The correlation between the subjects' ambiguity (in)tolerance and translation errors was then investigated. The data for the study was collected in the second semester of the academic year 2016-2017. First, the TOEFL reading comprehension and structure subtests were administered to the participants. This was done during the students' class time. The time allocated to the tests was two minutes per reading comprehension question and 40 seconds per structure question. Then, in the same session, to measure the participants' degrees of (in)tolerance for ambiguity, the 34 selected participants were asked to fill in the SLTAS questionnaire. The participants received clear instructions from the researcher on how to complete each instrument. Based on the participants' scores on the reading comprehension and structure subtests, the top 34 students were selected to translate the English into Persian. The participants took the source text home and submitted the translation at their earliest convenience; this enabled them to have enough time and access to the resources like dictionaries. The translations were then rated based on the SICAL scale for TQA (Table 2). The correlation between the subjects' ambiguity (in)tolerance and translation errors was then investigated. All the collected data were analyzed using the Statistical Package for Social Sciences (SPSS). In order to investigate the correlation between the independent variable (CMU translator trainees' degree of (in)tolerance for ambiguity) and the dependent variable (CMU translator trainees' translation errors), the bivariate correlation procedure was used. In order to control the effect of the variable on SL proficiency, the partial correlation procedure was used, controlling for SL proficiency.

Table 2. The SICAL Scale for TQA

Rating	Description	Maximum number of major and minor errors per 400 words of ST	
		Major	Minor
A	Superior quality	0	6
B	Fully acceptable	0	12
C	Revisable	1	18
D	Unacceptable	>1	>18

*Note: Adopted from Williams (1989, p.27)*

Based on the number of such errors in the translation of the 400-word portion of the ST, the translation could be rated on a four-level scale called SICAL III; the Canadian Government's official TQA system which consists of three acceptable quality ratings and one unacceptable rating. According to the rating system and Table 2, translation of the superior quality should have no major translation or language errors. B rating translation might contain no major translation or language errors. C and D ratings might contain one major error and a maximum of 18 minor translation and language errors, and more than one major translation and more than 18 translation and language errors per 400 words of ST, respectively.

### 3. Results

All the data were analyzed using the Statistical Package for Social Sciences (SPSS). In order to investigate the correlation between the independent variable (CMU translator trainees' degrees of (in)tolerance for ambiguity) and the dependent variable (CMU translator trainees' translation errors), the bivariate correlation procedure was used. In order to control the effect of the SL proficiency variable, the partial correlation procedure was used, controlling for SL proficiency. The levels of ambiguity (in)tolerance of the translator trainees were determined using the SLTAS questionnaire. The highest possible degree of (in)tolerance for ambiguity, if a participant selected 4 for each item, was 48; this would alternatively mean the person had the lowest degree of tolerance for ambiguity. The lowest possible degree of intolerance for ambiguity was 12, which would alternatively mean the person had the highest degree of tolerance for ambiguity.

The distribution of the subjects' overall ambiguity intolerance scores was calculated. The calculation showed that the mean AI score was 29.85, with a standard deviation of 7.1. The received histogram revealed that the distribution of the participants' AI scores had a slight left tail. The assessments were supported by the descriptive statistics in Table 3 below, which show a skewness of -.515 and a kurtosis of -.768. Both of these mean that the distribution of the overall AI scores could be treated as a normal distribution.

Table 3. Descriptive Statistics for Ambiguity Intolerance and Translation Errors

Statistics	Ambiguity Intolerance	Translation Errors
N	34	34
Valid	34	34
Missing	0	0
Mean	29.85	47.06
Std. Deviation	7.102	10.660
Skewness	-.515	-.245
Std. Error of Skewness	.403	.403
Kurtosis	-.768	-.773
Std. Error of Kurtosis	.788	.788

As it was mentioned in the previous section, the participants' translations were rated according to a modified version of the SICAL scale for TQA; that is, every minor translation error was assigned one minus point and every major error two minus points. Table 4 shows the best translation scored 23 errors and the worst 64 errors. The mean translation error score was 47.06, with a standard deviation of 10.66. Like the distribution of AI scores, the achieved results to examine normal distribution of the data showed that the distribution of the participants' translation error scores had a slight left tail. The descriptive statistics can again be seen in Table 3 above, which show a skewness of  $-.245$  and a kurtosis of  $-.773$ . Both of these mean that the distribution of the overall translation error scores could be treated as a normal distribution. The AI and translation error scores for all subjects can be seen in Table 4 Below.

Table 4. AI and translation error scores for all subjects

Participant &	Ambiguity Intolerance			Participants &	Translation Errors		
1	14.0	24	35.0	1	45.0	24	56.0
2	17.0	25	35.0	2	29.0	25	59.0
3	19.0	26	35.0	3	57.0	26	40.0
4	20.0	27	36.0	4	35.0	27	41.0
5	21.0	28	36.0	5	45.0	28	61.0
6	21.0	29	36.0	6	53.0	29	41.0
7	22.0	30	37.0	7	30.0	30	51.0
8	23.0	31	38.0	8	42.0	31	59.0
9	24.0	32	39.0	9	46.0	32	60.0
10	26.0	33	40.0	10	45.0	33	58.0
11	26.0	34	40.0	11	23.0	34	64.0
12	26.0			12	36.0		
13	29.0			13	54.0		
14	29.0			14	56.0		
15	29.0			15	37.0		
16	29.0			16	59.0		
17	32.0			17	45.0		
18	33.0			18	51.0		
19	33.0			19	39.0		
20	33.0			20	62.0		
21	34.0			21	37.0		
22	34.0			22	44.0		
23	34.0			23	40.0		

The null hypothesis that there was no significant positive correlation between CMU translator trainees' degrees of AI and the number of errors in their translations was rejected by performing an analysis of correlation between the set of AI scores and the set of translation error scores. The highest AI score was 40 and the lowest was 14 while the maximum and minimum possible scores were 12 and 48, respectively. The mean of the AI scores was 29.85 with a standard deviation of 7.10. It was hypothesized that the participants' AI scores would be positively correlated with their translation error scores. To reject the null hypothesis that no such positive correlation existed, a correlation matrix was prepared in SPSS (Table 5).

Table 5. Correlation matrix for ambiguity intolerance and translation errors

Correlations			Ambiguity Intolerance	Translation Errors
Pearson Correlation	Ambiguity Intolerance	Correlation Coefficient	1	.440
		Sig. (2-tailed)		.009
		N	34	34
	Translation Errors	Correlation Coefficient	.440	1
		Sig. (2-tailed)	.009	
		N	34	34

\*\* Correlation is significant at the .05 level (2-tailed).

Given the critical value for Pearson's correlation coefficient with 33 degrees of freedom is .32 at the .05 level of significance, the correlation matrix showed that there was a positive correlation between ambiguity (in)tolerance and translation errors, but the correlation was significant ( $r = .44$ ,  $p < .05$ ). This meant that the higher one's intolerance of ambiguity was, the more errors they were likely to make while translating; conversely, it could be concluded that the higher one's tolerance of ambiguity was, the fewer translation errors they were likely to make in their translations. However, another factor might affect this correlation was source language proficiency. Although the researcher tried to eliminate the effect of this factor to the extent possible by selecting the 34 top students, still the selected participants might have varying levels of SL proficiency. To eliminate this possible effect, a partial correlation matrix was prepared in SPSS, controlling for SL proficiency (Table 6).

Table 6. Correlation matrix for partial correlations between AI and translation errors controlling for SL proficiency

<i>Control Variables</i>			Ambiguity Intolerance	Translation Errors	Source Language Proficiency
	Ambiguity Intolerance	Correlation Coefficient	1.000	<b>.440</b>	-.218
		Sig. (2-tailed)	.	<b>.009</b>	.216
		Df	0	32	32
-none <sup>a</sup>	Translation Errors	Correlation Coefficient	.440	1.000	<b>-.367</b>
		Sig. (2-tailed)	.009	.	<b>.033</b>
		Df	32	0	32
	Source Language Proficiency	Correlation Coefficient	-.218	<b>-.367</b>	1.000
		Sig. (2-tailed)	.216	<b>.033</b>	.
		Df	32	32	0
Source Language Proficiency	Ambiguity Intolerance	Correlation Coefficient	<b>1.000</b>	.397	
		Sig. (2-tailed)	.	.022	
		Df	0	31	
	Translation Errors	Correlation Coefficient	.397	1.000	
Sig. (2-tailed)		.022	.		
		Df	31	0	

Examining controlling for SL proficiency, the correlation matrix above (Table 6) still showed a significant positive correlation between ambiguity intolerance and translation errors ( $r = .39, p < .05$ ), which was not much different from the zero-order correlation. It is worth mentioning that the critical value for Pearson's correlation coefficient with 33 degrees of freedom was .32 at the .05 level of significance. This meant that the translation errors would increase as ambiguity intolerance increased, even though there were differences in SL proficiency. A partial correlation matrix was conducted to control SL proficiency effect. The correlation matrix showed a significant positive correlation between ambiguity intolerance and translation errors ( $r = .39, p < .05$ ), which was not much different from the zero-order correlation. This meant that the translation errors would increase as ambiguity intolerance increased, even though there were differences in SL proficiency.

#### 4. Conclusion

The purpose of this research was to discuss the obtained results, in an attempt to arrive at a strict conclusion about the findings and contributions of the study. First, the details of the sample population were presented. Second, the research question was answered by rejecting the null hypothesis, followed by a detailed account of how the data was analyzed to yield the results. Tables were also included within the discussion to illustrate the results visually.

In summary, the findings of this research did answer the research question: there was a significant positive correlation ( $r = .44, p < .05$ ) between CMU translator trainees' levels of ambiguity intolerance and the number of translation errors in their translations. Since the critical value for Pearson's correlation coefficient with 33 degrees of freedom was .32 at the .05 level of significance and the observed value for Pearson's zero-order correlation coefficient was .44 at the .05 level and .39 at the .05 level for Pearson's partial correlation coefficient, then the null hypothesis for the research question was rejected.

Different individuals provide different translations of different qualities for the same text, even though they possess all the required linguistically and extra-linguistically criteria for being a translator. It is assumed that this problem has to do, at least in part, with the extent translators are (in)tolerant of ambiguities; that is, some people's degree of intolerance of ambiguity does not allow them to reach the higher levels of translation proficiency while some others' tolerance of ambiguity does. The null hypothesis was therefore "There was no significant positive correlation between CMU translator trainees' levels of intolerance for ambiguity and the number of errors in their translations." The results of the study did answer the research question and rejected the null hypothesis by yielding a significant positive zero-order Pearson correlation coefficient ( $r = .44, p < .05$ ) between CMU translator trainees' levels of ambiguity intolerance and the numbers of errors in their translations. The results also revealed a significant positive partial correlation ( $r = .39, p < .05$ ) between the levels of ambiguity intolerance and the numbers of translation errors. Since the critical value for Pearson's correlation coefficient with 33 degrees of freedom was .32 at the .05 level of significance and the observed value for Pearson's zero-order correlation coefficient was .44 at the .05 level, the null hypothesis for the research question was rejected. This means that as people move up along the ambiguity intolerance continuum, they begin making a relatively higher number of mistakes while translating. This in turn means that too much ambiguity intolerance can inhibit translators from producing better quality of translations. In other words, it can be concluded that the more intolerant of ambiguity a person is, the more errors they are likely to make in their translations. Alternatively, given that fewer translation errors would mean higher translation quality, a significant positive correlation can also be concluded to exist between ambiguity tolerance (AT) and translation quality (TQ). This would mean that as the degree of tolerance for ambiguity rises in individuals, they will be able to provide translations of relatively higher qualities. The received findings of the current research are compatible with the conclusion that Furnham and Richester (1995) reached. According to their findings, tolerance for ambiguity is an effective personality or emotional variable. The results of the present research supports Furnham and Gunter (1993), and Hofstede (1984) who claimed that tolerance for ambiguity is perceived as a useful variable operating practically in organizations and different cultures, respectively.

Moreover, to eliminate the possible effect of the variable of SL proficiency, the partial correlation between the ambiguity intolerance scores and the translation errors scores was measured, controlling for SL proficiency. Given the critical value for Pearson's correlation coefficient with 33 degrees of freedom, the correlation was still significantly positive ( $r = .39, p < .05$ ). This would mean that even though the degrees of SL proficiency might vary in different individuals, intolerance of ambiguity would still be associated significantly with translation errors. Therefore, the findings of this study showed that there was a significant positive correlation between intolerance of ambiguity and translation errors or, alternatively, between tolerance of ambiguity and translation quality. While the concept of ambiguity (in)tolerance is almost totally overlooked in translation studies, the findings of this study indicated the importance of this factor. The results emphasized the incorporation of the concept of ambiguity (in)tolerance in the field of translation studies. The findings are in favor of the findings of some researchers who stated that tolerance for ambiguity can be the sources of variations and differences (e.g. Anderson & Schwartz, 1992; Nutt, 1993; Tsui, 1993). Moreover, this could imply that other dimensions of cognitive style may also be related to translation and that they might be worth incorporating into translation studies. Therefore, if the concept is incorporated in translator training programs, a certain portion of translation problems may be addressed and translator trainees may be helped to find their personality-related weaknesses and strengths which could in turn lead to increased translation quality and deeper self-understanding in them. As Hermans mentioned in his research work (Hermans, 2007), based on the results, it can be concluded that translation is an immediate decision-making, then, for any (immediate) decision-making, a certain degree of tolerance for ambiguity is needed.

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**Appendix A: The Second Language Tolerance of Ambiguity Scale (SLTAS)**

Item	Statements	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	When I'm reading something in English, I feel impatient when I don't totally understand the meaning.					
2	It bothers me that I don't understand everything the teacher says in English.					
3	When I write English compositions, I don't like it when I can't express my ideas exactly.					
4	It is frustrating that sometimes I don't understand completely some English grammar.					
5	I don't like the feeling that my English pronunciation is not quite correct.					
6	I don't enjoy reading something in English that takes a while to figure out completely.					
7	It bothers me that even though I study English grammar, some of it is hard to use in speaking and writing.					
8	When I'm writing in English, I don't like the fact that I can't say exactly what I want.					
9	It bothers me when the teacher uses an English word I don't know.					
10	When I'm speaking in English, I feel uncomfortable if I can't communicate my ideas clearly.					
11	I don't like the fact that sometimes I can't find English words that mean the same as some words in my own language.					
12	One thing I don't like about reading in English is having to guess what the meaning is.					

**Appendix B: The Translation Test**

Quietly, and without pain, he began to cry, and remembered how in his childhood he had often wakened crying at night. But in spite of that he had been happy as a boy, and now his early years seemed all to have been lived in sunlight or among green trees. There were gleams of yellow and gold in his memory, of oranges and honey and the dining-room curtains on a morning of summer wind. He thought of his mother's large white arms, and his father's close-cropped hair. His father had been a professor of mathematics, and he one of five children. He remembered the ridiculous family procession to church, every week, all in stiff clothes, and his father's cigar on the homeward wall. One Sunday there had been a strange preacher, a distinguished visitor to the university, who before beginning his sermon had stood, for a long time as it seemed, looking slowly from one to another of the assembled people, then said quietly, as if disclosing a secret, "Be still, and know that I am God". Believing the words to be a statement of fact instead of a dramatic introduction, he, still a child, had been badly frightened.

When he grew up he had quarreled with his father, and later his father had been imprisoned because he held dangerous political views, and called himself a Liberal. His father had been a talkative man, given to expounding with great energy his views on every subject conceivable to man, but readily silenced by his wife's voice.