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Grammatical Competence: An Indispensable Component of Translating Scientific Research Articles

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Abstract- Needless to say, the dissemination of knowledge in the global scale is dependent upon translation, i.e. translating a text from the source language to the target language, English here as being widely considered the lingua franca of science and technology. Nevertheless, in spite of its crucial role, there seems to be some constraints on the way to an intelligible work of translation, one of which could be not being competent in the grammar of the target language. Otherwise stated, familiarity with the grammar of the target language, English here, seems to be of paramount importance for the incompetence could obviously hinder the comprehensibility of written works in general, and scientific research articles in particular. In this respect, we should hasten to add that the translation of scientific research articles from Farsi into English is not an exception. Being the focus of deep concerns in Iran, this paper concentrates on the linguistic analysis of mistranslations of two research articles which were written by students of post graduate courses of mechanical engineering, and physics in Iran, both of which required revision for conspicuous grammatical errors, and as a result, unintelligibility. The analysis reveals the crucial role of grammatical competence for Iranian students in higher education in order to help them find their deserved stance in related international discourse communities.

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Grammatical Competence: An Indispensable Component of Translating Scientific Research Articles

(With Special Reference to Translation Works by Iranian Students of Higher Education)

Minoo Khamesian

Abstract- Needless to say, the dissemination of knowledge in the global scale is dependent upon translation, i.e. translating a text from the source language to the target language, English here as being widely considered the *lingua franca* of science and technology. Nevertheless, in spite of its crucial role, there seems to be some constraints on the way to an intelligible work of translation, one of which could be not being competent in the grammar of the target language. Otherwise stated, familiarity with the grammar of the target language, English here, seems to be of paramount importance for the incompetence could obviously hinder the comprehensibility of written works in general, and scientific research articles in particular. In this respect, we should hasten to add that the translation of scientific research articles from Farsi into English is not an exception. Being the focus of deep concerns in Iran, this paper concentrates on the linguistic analysis of mistranslations of two research articles which were written by students of post graduate courses of mechanical engineering, and physics in Iran, both of which required revision for conspicuous grammatical errors, and as a result, unintelligibility. The analysis reveals the crucial role of grammatical competence for Iranian students in higher education in order to help them find their deserved stance in related international discourse communities.

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I. Introduction

The language of scientific prose style is believed to be informative not aesthetic, i.e. it is based on the function of message and calls for the socalled "clarity of purpose" and "lucidity of exposition". Otherwise stated, the style summons for a directly observable correspondence between the plane of content and the plane of expression1 to avoid ambiguity and misunderstanding. Consequently, translation of the style is supposed to provide the target audience with an exact meaning of the source text and avoid losing meaningful data it contains. In this regard, we should bear in mind that grammatical rules and regularities of the target language cannot be separated from the expressions of meaning, since they in turn have crucial roles in making a work meaningful.

If a text, scientific research articles here, is unreadable in the eyes of the target audience, they will quite probably assume that the content of the text is also of inferior quality. It does not seem unreasonable to assume that not writing well in creating a document would imply defects in coding the message. In other words, a particular work of translation would not be inadequate in itself, however, it could be so with regard to the communicative function it is supposed to serve. As Nord (1991) puts, "If the purpose of a translation is to achieve a particular function for the target addressee, anything that obstructs the achievement of this purpose is a translation error" (pp. 73-74).

As written time and again, the grammatical aspect of language, which is regarded as a system of rules governing the conventional arrangement and relation of words in a sentence, comprises morphology and syntax. The former concerns itself with the structure of individual words, the way in which their form varies to express specific contrasts in the grammatical system, i.e. number, gender, tense, aspect, etc., whereas the latter concerns the grammatical structure of groups of words (clauses and sentences) in addition to the linear concatenation of word classes (noun, verb, adverb, adjective etc.). Consequently, we should say that grammar is responsible for the translation of informative prose style.

In this respect, Gasparyan 2010 puts, "The thing is that the translation of factive texts, where there is a one-to-one correspondence of the content plane and the expression plane of the linguistic units, is rationally regulated and presupposes the ability of the translator to find the appropriate words in the target language. Thus, what he actually does is choosing the verbal way of expressing the ideas of the original text." (p. 107)

According to Campbell (1998), one aspect of translation competence is textual which is characterized by good grasp of grammatical transformation. In addition, Haegeman and Gueron (1999, P. 16) explain grammar as "a system of rules and principles which is at

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the basis of all sentences of a language enabling speakers to produce well-formed sentences, to evaluate sentences, and to replace unacceptable sentences by n acceptable variant". Hassan (1997) elaborates that some terrible linguistic and other difficulties might impede the two texts from being truly equivalent which can result in different problems. Farghal (2009) asserts that linguistic problems would appear due to differences in structure, vocabulary and the syntax of the source language, SL, and the target language, TL. He also maintains that the problems could result from lack of grammar knowledge of the SL or the TL. As Harmer (2003) puts in words "grammar is the description of the ways in which words can change their forms and can be combined into sentences in that language." (p.142). According to Brown (2004), "Before the learner becomes familiar with the system of the second language, the native language is the only linguistic system upon which the learner can draw. Therefore, not having enough knowledge in this sense will lead learners to use their own system of syntax in the TL and this interference (s) makes them Erroneous." (p.298)

Our focus here is on morphology, inflectional here, and syntax since as widely accepted, intellective style aims at conveying factological information which is generally devoid of expressive-emotional-evaluative overtones, so that is why we will not enter the domain of pragmatics.

II. Analysis

As mentioned, the two research articles being grammatically analyzed here faced the destiny of needing revision due to their grammatical and structural failures, which resulted in the hinderance of communication. However, they were not rejected thanks to the novelty of their topics. The analysis in this work concentrates on grammatical errors at both morphological and syntactical levels as being interconnected. Moreover, as generally accepted, errors can be divided into two groups, i.e. errors due to the interference of the translator's mother tongue, and errors due to lack of knowledge about the grammar of the TL, target language. However, this work aims to elaborate on the latter, since according to my knowledge as a university lecturer and editor, in the context of Iranian academic curricula teaching grammar is not paid its deserved attention which is the main reason why this article has decided to shed light on it. It is worth adding here that since there is directly observable correspondence between the plane of expression and the plane of content (Akhmanova, 1978, Gasparyan, 2002, Khamesian, 2013), this will enable the scientific translators and writers to avoid ambiguity and misunderstanding, hence the reason why derivational morphology is ignored in this work.

The sentences adduced below are adapted from two research articles, i.e. mechanical engineering, and physics. What follows concentrates on the linguistic analysis of the sentences with regard to morphology and syntax.

To start with morphological analysis, inflection here, words represent the unity of their lexical and grammatical aspects. In terms of the former aspect, words remain the same in a variety of their forms, whereas with regard to the latter, words vary considerably as they work in the grammar of a language in a number of grammatical forms.

As far as verbs, the pivotal part of speech in English, are concerned, their formal definition refers to an element which can display morphological contrasts of tense, aspect, voice, mood, person, and number.

Sample 1: *Fuel cell plates in general, including graphite without cavity, composites and metal materials.*

Sample 2: *When the size of grain shrinking and the mean free path of electron decreasing.*

Sample 3: *They are considered that TMSPM as the coupling agent to enhance the interaction at interfaces level between both components.*

As obvious, the samples do not include a finite verb to be considered a sentence.

Sample 4: *Four deposited films prepared from four types of nano-hybrid samples (a, b, c, d, respectively).*

Sample 5: *Hydraulic stamp with a high accuracy utilized with a force indicator system on computer, in order to acting force on the die.*

Sample 6: *Graphite due to possessing electric conductivity and ease of machining utilized.*

Sample 7: *Therefore, the text in two part revised because have unclear words, remove words porous and pore.*

Sample 8: *Forming process with rubber pad including three stages.*

Here, the grammatical morphological problems of tense are spectacular, although it is noticeable here that sample 6 suffers from syntactic failure as well.

Sample 9: *The samples were cutted after final test with wire cut device, to study distribution of samples thickness and filling profile, and then mounting operation performed on cutting samples.*

Sample 10: *The time spended for putting rubber pad and plate in the shell was about 10 seconds, for acting force to die was 30 seconds and the maximum time for taking bipolar plate and putting a new one was 10 seconds.*

Sample 11: *Here, in present study, the goal of AFM and SEM microscopies were not investigated porous in meso-structures.*

As can be seen, the sample sentences suffer from the lack of knowledge of the paradigms of the verbs, 'cut', and 'spend', although sample 9 contains syntactical mistakes as well.

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The following example shows the unfamiliarity of the function of adjectives in the "attributive" position, i.e. *the convex or concave pattern.*

Sample 12: *As mentioned above for the production of a bipolar plate in the process of rubber pad forming the pattern convex or concave can be used.*

To shed light on syntax, which concerns the grammatical structure of groups of words (clauses and sentences) as well as the linear concatenation of word classes (noun, verb, adverb, adjective etc.). We should hasten to add that a translator of scientific works is supposed to familiarize himself with the syntagmatic aspect of aligning words to create a readable prose, i.e. glaring syntactic errors such as omitting a vital component of the sentence would hinder the intelligibility of the message targeted to the audience.

The following sentences of different lengths would be able to illuminate why knowledge of English syntax would be vitally important.

Sample 1: *The benefits of excesses polymers to SiO_2 have prepared so roughness and uniform surface morphology due to best electric transitions.*

Sample 2: *Force increasing till 60 tons causes tearing in longitudinal direction channels of produced plates from concave die.*

Sample 3*: Due to that fuel cells produce electricity in chemical manner, therefore they will have much output in production of energy from a fuel and much better than combustion.*

Sample 4: *As a result, decreasing leakage currents and low weight and high flexibility and ability of fabrication and preparation thin films at low temperatures and low pressures are so low cost.*

Sample 5: *The most important defeat in metals is their high density and weakness against corrosion, why that the atmosphere inside polymeric fuel cell has got corrosive material and includes water vapor, oxygen, polymer, graphite, and base metals like gold and tin covers were used.*

Sample 5: *In this process rubber is placed inside a rigid shell which fastened by this shell from sides and just upper surface of rubber is in touch with plate and the die in order to filling channel cavities.*

Sample 6: *The unique benefits of polymers that have been widely used as insulators or dielectrics. These cases such as, increasing mobility of charge carriers because of polymers have low band gap comparing with high band gap SiO_2 (for example PMMA has 4.4 eV band gap between Homo and Lumo), tunneling through a double barrier with different forms of barriers and the role of polaron carriers in polymer at high frequencies are so important on OFET.*

Sample 7: *Bipolar plates are one of the most important parts of a fuel cell that responsible for gathering external flow from cathode and anode of a fuel cell. Being flexible a rubber will cause omitting the need of high volume of machining operations which are necessary for making tools, and rubber replaces half of tools (plunger or matrix) just because of its forming properties, and the other half is filled by using rubber flexibility properties.*

Sample 7: *With shrinking size of grains, the thickness of barriers between potential well decrease led to another types of conduction mechanisms formed and confirmed such as, tunneling (coherent or incoherent depending on the thickness of barriers) can cause by trapped (electron- hole) carriers tunneling from the silicon to the SiO_2 layer and direct tunneling (F-N) current can created by electrons and holes from the silicon substrate and tunneling through a double barrier (through a trapezoidal barrier in SiO_2 and triangular barrier PVP) and Poole-Frenkel mechanisms and Schottky current according to height and thickness barriers.*

All these mishaps can be clearly attributed to the lack of syntactic knowledge, e.g. how post-modification works in English, and how to move about syntactic units in the sentence to avoid ambiguity, all of which might result in producing the adduced samples which would undoubtedly result in communication breakdown.

III. Conclusion

The study aimed at analyzing the grammatical errors, both at morphology and syntax levels, made by students of higher education in Iran. As shown, incompetence in the grammar of the English language would result in the production of such weird sentences which on the one hand led to a crucial need of being revised, and on the other, could undoubtedly have negative impression on the reviewers of the journals they were submitted to even if being novel in their own sphere. Otherwise stated, no matter how much information a piece of scientific work may contain, if its comprehension is hindered by inaccessible or imprecise language, it would not find its deserved stance due to linguistic ambiguity and opaqueness.

Based on our work, and regarding the enthusiasm of Iranian students of higher education to participate actively in their related discourse community worldwide, there seems to be an urgent need in Iran to pinpoint the role of grammatical competence in teaching English for Academic Purposes to familiarize students with the peculiarities of scientific translation since this failure has become a real obstacle for them on the path to showing their knowledge in the related international discourse communities.

It does not seem unreasonable to add as the final remark that 'grammatical incompetence' would have certain consequences, some of which being noteworthy are misinterpretation, incomprehensibility and artificial style. In the absence of explicit knowledge

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of language in terms of syntax and morphology, translation could be rather limited, since the author would resort to word by word translation.

Note

- According to Galperin 1977, in linguistics there are two terms now generally recognized and widely used — *plane of expression* and *plane of content.* These are synonymous to the concepts *form* and *matter.*

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