

Syntactical Aspects in Translating Fluid Mechanic Terms from English to Indonesian

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Abstract. Modern science such as fluid mechanics has registers for efficient communication among peers. Inaccurate and unacceptable translations of registers may cause failure in communication across languages. For an accurate and acceptable translation, a translator needs a solid foundation in the aspects of phonology, morphology, syntax, and semantics. This study deals with the syntactic patterns of English and Indonesian that affect the translation of fluid mechanic terms. Applying the qualitative method, this study analyzes the translation of registers by focusing on nominal phrases and plural nouns. The findings show that the translation of nominal phrases changes the word structure from English and Indonesian. Meanwhile, in the translation of plural nouns, there are inconsistencies in the translation results for achieving naturalness.

Keywords: Fluid mechanic terms; linguistics; specialized language; syntactical aspects; translation

1 Introduction

Translation connects people from many languages and cultures. It allows people to learn from and understand one another regardless of linguistic or cultural differences. The purpose of translation is to impart as much cultural equivalency as possible between the cultures of the SL and the TL, not just to replace words. A successful translation must be accepted logically and factually by all individuals; hence, the message contained in the source language (SL) can satisfy the target language (TL) reader with the information contained inside [1].

Translating, according to Nida and Taber [2], entails replicating the closest natural equivalent of the source language message in the receptor language, first in terms of meaning and then of style. Meanwhile, Newmark [3] defines translation as the rendering of a text's meaning into another language in the manner intended by the author. The translation must be able to overcome the language barrier that is impeding communication.

Science and technology are advancing at a tremendous pace at the moment. It may be observed in the numerous inventions and new tools that are being developed. There are currently 2,090,154 books published worldwide [4]. This tendency will result in the emergence of new

terminologies in each subject and a more important role of translators in spreading scientific progress into the target language. The translation is an option for readers with limited proficiency in foreign languages to update the development of science [4].

When translating new terminology from the source language to the target language, translators may encounter difficulties. Specific terms in a particular field like engineering or technology belong to the problems of untranslatability. There are times when a translator finds it difficult to find word equivalences from the source to the target language [4]. According to Newmark [3], translation is an attempt to redirect a written message from the source language to the target language by emphasizing equivalent meanings.

The translation of words in the realm of fluid mechanics is inseparable from the linguistic characteristics. A linguistic approach to translation can aid in understanding the linguistic challenges that make any act of translation difficult. Linguistic difficulties can take the form of lexical differences between languages, the fact that a language is made up of different ways of speaking, the fact that textual genres play an important role in the act of translation, and the fact that the meaning of a word chosen by an author is dependent on the meanings of other words in the text[5].

The relationship between linguistics and translation illustrates that these two fields can be studied separately or together. Several linguistic elements that are important to note in translation include morphological, syntactic, and semantic issues. Each element contributes to the translation to determine adequate equivalence. This study focuses on only one linguistic aspect, namely syntax. Syntax has a special relationship with translation. Syntax is the part of grammar that regulates the form of words in which language users make statements, ask questions, give directions, and so on. The study of syntax deals with the construction of sentences and their structural and functional interactions with each other. In grammatical terms, what we call a referent expression in functional terms is referred to as a noun phrase. Expressions like "has a daughter" and "bought an answering machine" are predicates from a functional standpoint, but verb phrases from a grammatical standpoint. However many languages differ in other respects, they all have a noun phrase as a referent expression and a verb phrase as a predicate [6]. In translating fluid mechanics terms, syntactical aspects need to be given considerable attention because there are differences in the language characteristics of English and Indonesian in terms of phrase construction, including the need for transposition, changes in form from plural to singular, and explicit to implicit (implication) for the sake of the naturalness of translation product. Therefore, this paper will discuss how the syntactic aspect contribute the translation of fluid mechanics terms from English into Indonesian?

2 Literature Review

2.1. Translation

Several translation studies have been conducted, including topics such as translation in general, translation techniques, and translation methods. The majority of translation technique research is done by examining the translation processes used to translate publications, whether they are novels [7] [8], articles, texts [9], article abstracts [1], or specific field terms [4].

Shabitah and Hartono [7] investigated the use of translation methods in the translation of novel texts. The results of the analysis show that seven of the eight translation methods proposed by Newmark were used in translating the dialogue sentences in the novel "I Was Here" from English to Indonesian. They are literal translation, faithful translation, semantic translation, free translation, idiomatic translation, and communicative translation. Qin, Widodo, Triyono [8] conducted research on cultural humor. They found three translation methods used to translate Huo Zhe's book, namely literal translation, free translation, and replacement method by juxtaposing it with an analysis of the types of humorous discourses, namely universal humor, linguistic humor, and cultural humor.

Sundari and Febriyanti [9] conducted research on the translation technique used to translate informative text for EFL learners. The results of the study used Newmark's V diagram. There are 545 recognized translation techniques based on the analysis of the selected translation methodology or the use of 35 examples in translating informative content presented. The most frequent technique used was the literal translation technique (72.48%).

Fitria [1] conducted research on translation techniques used to translate abstracts in articles from a scientific journal. The result is described by counting the categories/types in each abstract and its percentage of numbers. The author displays the frequency of translation techniques used as well as the percentage of translation techniques used. The results show the translation techniques are categorized into five categories, they are Transposition/Shift (126 occurrences or 75.90%), Reduction/Omission (21 occurrences or 12.65%), Amplification/Addition (8 occurrences or 4.82 %), Established Equivalence (6 occurrences or 3.61%) and Borrowing (5 occurrences or 3.01%). According to the explanations above, the most prevalent type of translation technique found in the abstracts of Edunomika Journal of STIE AAS Surakarta in Vol 2, No 01 (2018) is Transposition/Shift. Translation technique in which the grammatical categories of the source language are replaced with those of the target language. This technique is usually used because of the different grammar between SL and TL. Transposition is the process where parts of the speech change their sequence when they are translated without changing the meaning of the message. This necessitates that the translator understands how to substitute a word category in the target language without changing the sense of the source text. Transposition/Shift employs translation texts as well as shift patterns to solve various structures between English and Indonesian.

Febryanto, Sulyaningsih, and Zhafirah [4] conducted research on translation techniques used to translate terms in the field of mechanical engineering. The translation approaches revealed in this study were 28 adaptation techniques, 34 established equivalence techniques, 179 literal translation techniques, six calque techniques, and 48 pure borrowing techniques.

When juxtaposed with the results of previous studies, our research is closer to the latest research, namely research on the translation of terminology in the field of mechanical engineering. This study focuses on the linguistic component rather than the translation process utilized to translate these phrases.

2.2. Translating Specialized Language

A lot of research on language-specific translation has been done. Researchers conduct research on the translation of terms in various fields. Research on the technique of translating terms in the field of mechanical engineering has been carried out by Fachruddin et al. [10]. The

researchers focus on the term mechanical engineering in the book *Fundamentals of Engineering Thermodynamics* which is translated into Indonesian with the title *Mekanika Fluida*. In their research, the researchers discuss the translation techniques used by book translators including common equivalence, natural borrowing, pure borrowing, particularization, amplification, and generalization. In addition, the researchers also discussed the level of accuracy of the translation results and assessed that the translation results in the book were accurate with a score of 2.91 2.50. The researchers conclude that the common equivalence technique and natural borrowing are techniques that are often used in translating mechanical engineering terms in the book.

In the IT field, Izwaini [11] also conducts research on terms in that field. The main problem in translating IT terms is related to language (linguistic) and cultural aspects. Data were taken from two specialized text electronic corporations. To carry out the translation of information technology terminology, translators widely use loan translation. Of the 52 terms, 19 were translated using this strategy which made up 36.5%, given that 8 terms (about 15%) were translated using a combination of loan and loan translation.

Handayani [12] performed study on the translation of medical words in her thesis. Handayani discusses four topics in her research: translation techniques, translation methods, translation ideology, and translation quality assessment, which is based on three criteria: accuracy, readability, and acceptability. The researcher discovered 13 translation techniques used in translating the medical term book when discussing translation techniques, including natural borrowing, pure borrowing, calque, transposition, amplification, addition, English-Latin borrowing, English-Greek borrowing, parenthesis, literal translation, description, subtraction/omission, and inversion. The researcher uses diagram V from Newmark (1988) to discuss the translation method, which uses two tendencies, namely the tendency towards the source language and the tendency towards the target language. The researcher finds that the translation of medical terminology in Clinical Medicine Lecture Notes leads to the ideology of foreignization based on the data's trend towards the source language. The researcher concluded that the majority of the translation results in the book "Lecture Notes on Clinical Medicine" were accurate 335 (52.1%), accepted 344 (53.5%), and read 28 (4.4%) during the discussion about translation quality.

From the previous research on translating fluid mechanic terms, the linguistic aspects have not been explored. Most of the previous research focused on the techniques, methods, and ideology of translation. This research is a response to the lack of linguistic exploration in the study of the translation of fluid mechanic terms, namely by studying the syntactical aspects.

2.3. Linguistic Aspects in Translation

Translation has also been linked to linguistic features such as semantics [10], morphology [11], phonology [12], and grammar [13]. Hassan [10] in his article "Translating Scientific Terminology: Examples from the Arabic Versions of Two International Magazines" writes about efforts to explore how English scientific terms are translated into Arabic versions of two international magazines; namely, Scientific American (Arabic Edition) and Nature (Arabic Edition) (Arabic Edition). The evidence provided by these magazines is hoped to explain the extent to which semantic and communicative translations are very important in translating scientific terms into Arabic. It also classifies different types of semantic translation. The author suggests 4 (four) translation techniques used to translate Scientific American and Nature magazines from English to Arabic, namely (1) semantic translation in the phonetic realm

(transliteration), (2) semantic translation based on morphological processes (suffixation, derivation, and reduplication), (3) semantic translation based on lexical equivalence (gloss translation), and (4) communicative translation.

Giaber [11] discusses the morphological differences between English and Arabic. The length of the term varies between languages due to morphological differences. Word formation differs between languages such as English and Arabic. While English mainly relies on affixation, Arabic relies on a combination of roots and morphological patterns. Many concepts represented by affixes in English are represented by words in Arabic. English uses productive strategies such as blending and abbreviations, which result in short words. Arabic does not have a method as productive as this. Because of these variances, the lengths of terms in each language differ, as do the lengths of English terms and their Arabic translation equivalents.

Huber [12] in his article entitled "Phonetic Aspects in Translation Studies" explains that translation in a narrow sense includes all forms of transferring meaning from the source language text into one or more target languages. Obviously, the translation of a written text usually does not involve any choice at a phonetic or phonological level. But in the translation of a literary work, the successful transfer of rhyme, rhythm, pause pattern, alliteration, accentuation, and wordplay, based on the segmental and/or suprasegmental qualities of the lexical and phrasal units, will often be important to the usability and acceptance of the translated product. Interpreting, in both simultaneous and successive models, involves linguistic choices that must be made by interpreters at all levels of language processing at a time when the source language text, mostly spoken speech, is unfinished. Content and structure, topic and focus, verbal references, phrasal attachments, presuppositions, and often even the real purpose and intent of the speaker, may, at the very extreme, be completely unresolved at the time of the original utterance when the interpreter has to appear. Professional translators systematically use the prosodic properties of source language input to obtain complementary and/or compensatory information about the structural properties of ongoing and incomplete speech.

From a grammatical point of view, a study entitled "Grammatical Aspects of Translation" [13] stated the relevance of this research is that the grammatical aspect of translation has traditionally attracted the attention of experts in the theory and practice of teaching translation. This study examines how grammatical aspects influence the translation process. The author uses the term "transformation" as a form of shifting the translation results from the source language to the target language.

From the previous studies, the translation of fluid mechanics has not been related to the linguistic aspects. Therefore, research related to linguistic aspects of the translation of fluid mechanics terms contributes to the translation of specialized language.

3 Theoretical Framework

3.1. Translation

Translation experts give several different definitions but have the same main idea. Nida and Taber [2] reveal that translation

„as a process of reproducing in the receptor language the closest natural equivalent of the source language message, first in terms of meaning and secondly in terms of style. In other words, translation is a transfer of meaning, message, and style from one SLT to the TLT. In the order of priority, style is put the last. Here the things to reproduce (transfer) is stated, message.”

In this situation, Nida and Taber [2] revealed that translation seeks to discover the most equal translation results from the source language into the target language, both in terms of meaning and style. Translation, according to Larson [17], is essentially a change of form. When we talk about the form of a language, we are referring to the actual words, phrases, clauses, sentences, and paragraphs. This form relates to a language's surface structure. This is part of the structure of language that is actually observed in the form of speech, both written and oral. In translation, the form of the source language is replaced by the form of the target language. From this explanation, it can be concluded that Larson is more focused on changing the form from the source language to the target language. According to Newmark [3] the definition of translation is

“rendering the meaning of a text into another language in the way that the author intended the text. Common sense tells us that this ought to be simple, as one ought to be able to say something as well in one language as in another. On the other hand, you may see it as complicated, artificial and fraudulent, since by using another language you are pretending to be someone you are not. Hence in many types of text (legal, administrative, dialect, local, cultural) the temptation is to transfer as many SL (Source Language) words to the TL (Target Language) as possible.”

This definition emphasizes transferring the author's intended meaning from the source language text to the target language text. Newmark [3], like Nida and Taber [2], focuses on meaning..

3.2. Syntax aspect

A lack of syntax understanding can have an impact on the consistency of the translation results. The mastery of syntactic knowledge is the most important factor in the application of translation. The syntax is concerned with how terms can be combined in phrases and sentences to decide the rules by which words can or cannot be combined in determining context [18]. Syntactic relationships in translation can impact the sequence and pattern of meaning created. Because of the difference in form between the source and target texts, the syntactic characteristics of a sentence are one of the determinants of how the meaning of a sentence or clause is defined for equivalence. Furthermore, the grammatical pattern in the source text will affect how the translation should be done [19].

Sentence patterns in English which consist of subject, verb, object, and description have similarities with sentence patterns in Indonesian. However, there are differences in certain other sentence patterns. A different way of translating is needed. At the syntactic level, when translating the linguistic components that make up a phrase, clause, or sentence, appropriate similarities, especially grammatical similarities that lead to textual counterparts, must be carefully evaluated. Some problems with translation, especially in terms of grammar, include the translator's attention to the grammatical and functional aspects of sentences [20]. As a result, comprehending syntactic features such as words, phrases, and sentences is essential for translation. Especially when it comes to noun phrases, translating phrases is a difficult part of

the English-to-Indonesian translation process. However, translating noun phrases is not the only factor that causes problems while translating English to Indonesian. Difficulty in translation can be a problem at both the micro and macro levels of the language. In addition, cultural problems can also be a problem in itself [19].

4 Research method

The research method on translating the terms in the field of fluid mechanics from English to Indonesian uses qualitative research methods. According to Bogdan and Biklen [21], qualitative technique is a research method that entails descriptive research reports from people and observed behaviors in written or oral form. Miles & Huberman [22] note that qualitative research can work with samples that are smaller than the population as a whole. At the data collection stage, the researcher juxtaposed the English version of Fluid Mechanics and the translated version, namely in Indonesian. After that, we sort out the terms that are included in the field of fluid mechanics. We found 514 terms in the book as words and phrases. For the need to analyze the syntactic aspect, we categorize the findings into two, namely noun phrases and plural nouns. We found 237 noun phrases and 19 plural nouns. The data is then analyzed based on changes in the singular and plural in the translation of terms from the source language to the target language, as well as the form of the source language's characteristic phrases to the target language.

5 Finding and Discussion

Syntax is the part of grammar that regulates the form of words in which language users make statements, ask questions, give directions, and so on. The study of syntax deals with the construction of sentences and their structural and functional interactions with each other. In grammatical terms, what we call a referent expression in functional terms is referred to as a noun phrase. Expressions like "has a daughter" and "bought an answering machine" are predicates from a functional standpoint, but verb phrases from a grammatical standpoint. However, many languages differ in other respects, they all have a noun phrase as a referent expression and a verb phrase as a predicate [6]. There are two differences between Indonesian syntax and English syntax, namely syntax in the category of noun phrases and plural nouns.

5.1. Noun Phrases

A phrase is a grammatical unit consisting of two or more non-predicative words that have a specific meaning. This point of view differs from that of Ramlan [25]. There are six different categories of phrases: nominal, verbal, adverbial, numeric, prepositional, and adjective phrases. The distribution of nominal phrases is the same as the distribution of noun groups of words.

A noun phrase is a syntactic category that consists of a combination of nouns or pronouns as the core and functions as a subject or object in a sentence [23]. In Indonesian, noun phrases are usually structured Determiner (D) – Modifier (M). However, there are also those with an M – D structure. In English, noun phrases have an M – D structure. The M – D structure is also found in Indonesian grammar. The M element in the structure usually explains the number, set, denial, and limitation [25]. Examples are "*seekor sapi*", "*kedelapan bab*", "*bukan tinta*", and "*hanya kamu*". In English grammar, noun phrases can function as subjects, verb objects, complementary subjects or objects, or prepositional objects.

The following are examples of the translation of noun phrases in terms in the field of Fluid Mechanics:

Table 1. Example of noun phrases in Fluid Mechanics terms.

Data No.	Source Language	Target Language
001	Fluid mechanics is the study of fluids either in motion (fluid dynamics) or at rest (fluid statics) and the subsequent effects of the fluid upon the boundaries.	<i>Mekanika fluida adalah telaah tentang fluida yang bergerak atau diam dan akibat yang ditimbulkan oleh fluida tersebut pada batasnya.</i>
003	The essence of the subject of fluid flow is a judicious compromise between theory and experiment.	<i>Pelajaran tentang aliran fluida berintikan penarikan kompromi yang jitu antara teori dan eksperimen.</i>
008	Thus most textbooks concentrate on flat plates , circular pipes, and other easy geometries.	<i>Sehingga kebanyakan buku teks memusatkan pembahasannya pada lempeng datar, pipa bulat dan bentuk-bentuk geometris lainnya yang lebih mudah.</i>
010	First, viscosity increases the difficulty of the basic equations, although the boundary-layer approximation found by Ludwig Prandtl in 1904 has greatly simplified viscous-flow analyses.	<i>Pertama, kekentalan meningkatkan kerumitan terhadap persamaan-persamaan dasar, walaupun penghampiran lapisan batas yang ditemukan oleh Ludwig Prandtl pada tahun 1904 benar-benar telah menyederhanakan penganalisisan aliran kental.</i>
015	The theory of turbulent flow is crude and heavily backed up by experiment, yet it can be quite <u>servicable</u> as an engineering estimate.	<i>Teori aliran bergolak adalah sederhana dan disokong kuat oleh eksperimen, namun bisa juga dimanfaatkan dengan cukup baik dalam taksiran-taksiran perancangan.</i>

From the data above, it can be seen that there are several positions of noun phrases in sentences, namely data 001 and 010 showing noun phrases as subject and data 003, 008, and 015 as

prepositions. As explained above that noun phrases in English are formed from modifiers and determiners, in this case a noun, as the core of the phrase. In the data mentioned, the words mechanics, flow, plates, and layers are determiners or the core of the phrase, while fluid, flat, boundary, and turbulent are modifiers. This changes when translated into Indonesian which has a reverse pattern, namely D - M, so the phrases are translated into „mekanika fluida“, „aliran fluida“, „lempeng datar“, „lapisan batas“, and „aliran bergolak“. This change is called the transposition process, namely the shift that arises from the structure of the phrase.

5.2. Plural Nouns

Nouns, according to Simons [26], are words that identify who, where, and what in language. Nouns are words that describe people, places, or things. Nouns can also function as subjects, direct objects, indirect objects, prepositional objects, and subject complements [26]. Simon [26] also argues that nouns are classified into the following categories: precise and general, concrete and abstract, countable and uncountable, and collective. Many nouns are countable nouns because they can be singular or plural.

The plural (plural) comes from the Latin, pluralis, adjectives from "plus", "pluris", which means "more", + adjective suffix "-alis" [27]. A plural as grammar is a term that can potentially refer to more than one person or thing, and more than two things if the language contains multiple forms. For example we make a distinction between singular and plural in English, such as "a cat" and "cats" or "woman" and "women". And sometimes we use plural nouns for something that has two parts, such as shoes (which have two legs) [28].

As the previous discussion and examples show, plural nouns are made in various ways from singular nouns. The following are examples of plural noun forms. The majority of countable nouns in English are regular; just add -s to the end of the singular or -es to the singular that ends in s, z, ch, sh, x, or o.

In Indonesian, the plural form of nouns is distinguished by reduplication, namely the derivation technique through repetition, in whole or in part [27]. According to the form, noun reduplication can be divided into four groups, namely: (a) whole reduplication, for example "bunga-bunga", "daun-daun", "meja-meja", and "kursi-kursi", (b) reduplication of sound copy, for example "warna-warni", "corat-coret", "bolak-balik", and "gerak-gerak", (c) partial reduplication, e.g. "surat-surat kabar", "rumah-rumah sakit", and "orang-orang tua", (d) reduplication with affixes, for example "biji-bijian", "batu-batuan", and "padi-padian", (e) zero reduplication with affixes, for example „pepohonan“, „bebatuan“, „rerumputan“.

In the Fluid Mechanics term data, there are several terms in the form of plural nouns in English and translated into Indonesian in the plural as well. However, the translator seems inconsistent in translating the plural nouns because some terms are translated into singular nouns. The following is an example of data in the form of plural nouns:

Table 2. plural noun data.

Data	Source Language	Target Language
008	Thus most textbooks concentrate on flat plates , circular pipes, and other easy geometries.	<i>Sehingga kebanyakan buku teks memusatkan pembahasannya pada lempeng datar, pipa bulat dan</i>

		<i>bentuk-bentuk geometris lainnya yang lebih mudah.</i>
012	Second, viscosity has a destabilizing effect on all fluid, giving rise, at frustratingly small velocities , to a disorderly, random phenomenon called turbulence.	<i>Kedua, kekentalan mengawampantapkan semua fluida dan, celakanya pada kecepatan yang rendah, menimbulkan gejala acak yang tak teratur yang disebut golan.</i>
022	Given the definition of fluid above, every layperson also knows that there are two classes of fluids, liquids and gasses .	<i>Dengan definisi fluida seperti tersebut di atas, setiap orang awam tahu bahwa ada dua macam fluida, yakni zat cair dan gas.</i>
023	Again, the distinction is a technical one concerning the effect of cohesive forces .	<i>Di sini pun, perbedaan antara keduanya bersifat teknis, yaitu berhubungan dengan akibat gaya kohesif.</i>
024	A liquid, being composed of relatively close packed molecules with strong cohesive forces, tends to retain its volume and will form a free surface in a gravitational field if unconfined from above.	<i>Karena terdiri atas molekul-molekul tetap-rapat dengan gaya kohesif yang relatif kuat, zat cair cenderung mempertahankan volumenya dan akan membentuk permukaan bebas dalam medan gravitasi.</i>

The translation of plural nouns into singular nouns is included in the type of intra-system shift. Catford [29] uses the term intra-system shift for cases where the shift occurs internally, within a system; that is, for cases where the source language and the target language have systems that roughly conform to their formal constitution, but when translation involves selecting terms that do not fit within the target language's system. In the seven cases above, there is a shift in the noun system, where singular nouns are translated into plural nouns and plural nouns become singular nouns. In data number 008, 012, 022, 023, and 040, plural nouns are translated into singular nouns. When the translator translates the terms "flat plates" and "circular pipes" into "lempeng datar" and "pipa bulat", it is considered more natural in the translation into Indonesian, rather than translated into "lempeng-lempeng datar" and "pipa-pipa bulat". Similar to "velocities", "cohesive forces", and "two-phase mixtures" which are translated into "kecepatan", "gaya kohesif", and "campuran dua fase", this is because this form of translation is more natural when compared to "kecepatan-kecepatan", "gaya-gaya kohesif", and "campuran-campuran dua fase". Just like when we translate the word "wings" in the phrase "the airplane wings", of course, it does not translate to "sayap-sayap pesawat", but to "sayap pesawat". English strongly emphasizes agreements regarding plurality and the use of the article form (definite/non-definite or zero article), while Indonesian does not have very strict syntactic rules regarding agreements. The inconsistency in the translation of the plural is solely to achieve naturalness. This is included in the realm of implicitation, namely a stylistic translation technique in which what is explicit

in the source language is made implicit in the target language, relying on context or situation to convey meaning (Vinay and Darbelnet 1995:344). It can occur because of the target text's norms or culture. Therefore, the results of translating plural nouns which are translated inconsistently to make the translation results more natural are part of implicitation.

6 Conclusion

Communication requires translation. Translation has the potential to connect people from various languages and cultures. Since numerous inventions and new tools are being developed, the translator now plays an important role in spreading scientific progress by translating it into the target language. New terms or specific terms in specific fields, such as engineering or technology registers, are among the challenges that translators face. The translation of terms in fluid mechanics is inextricably linked to the linguistic aspects that accompany it. A linguistic approach to translation can aid in the comprehension of linguistic difficulties. Syntax is one aspect of linguistics that cannot be separated from translation. By using qualitative method, the researchers find two aspects of syntax related to the translation of Fluid mechanic terms from English to Indonesian, those are noun phrases and plural nouns. This research is a preliminary one. Future research needs to examine other syntactical aspects in discussing the translation of specific terms, for examples the sentence structures, part of speech, and other aspects.

7 Acknowledgement

The research for this paper is funded by the research grant from DIKTI - Penelitian Disertasi Doktor (PDD) 2022. This work would not have been possible without the support from the Doctoral Program of Humanities, Faculty of Cultural Sciences, Universitas Gadjah Mada.

8 Reference

- [1] T. N. Fitria, „Translation Techniques Found in English to Indonesian Abstract Translation of Journal Edunomika 2018,“ *ELITE Journal*, zv. 5, % 1. vyd.2, pp. 145-160, 2018.
- [2] E. Nida and C. Taber, *The Theory and Practice of Translation*, Leiden & Boston: Brill, 1982.
- [3] P. Newmark, *A Textbook of Translation*, New York: Prentice Hall, 1988.
- [4] „Worldometer,“ [Online]. Available: <https://www.worldometers.info/books/>.

- [5] M. Febryanto, I. Sulyaningsih a A. A. Zhafirah, „Analysis of Translation Techniques and Quality of Translated Terms of Mechanical Engineering in Accredited National Journals,“ *Project (Professional Journal of English Education)*, zv. 4, %1. vyd.1, pp. 116-125, 2021.
- [6] M. Chtatou, „Translation And Linguistics – Analysis,“ 28 June 2021. [Online]. Available: <https://www.eurasiareview.com/28062021-translation-and-linguistics-analysis/>. [Cit. 4 October 2022].
- [7] E. Finegan, *Language: Its Structure and Use*, Stamford: Cengage Learning, 2008.
- [8] W. Shabitah a R. Hartono, „The Use Of Newmark’s Translation Methods in Translating Forman’s Novel “I Was Here” From English into Indonesian,“ *Rainbow: Journal of Literature, Linguistics and Cultural Studies*, zv. 9, %1. vyd.1, pp. 63-75, 2020.
- [9] X. Qin, P. Widodo a S. Triyono, „An Analysis of the Translation of Cultural Humor in the Novel “Huo Zhe”,“ *International Journal of Linguistics, Literature and Translation (IJLLT)*, zv. 6, %1. vyd.2, pp. 185-192, 2019.
- [10] H. Sundari a R. H. Febriyanti, „Translation Techniques and Translation Competence in Translating Informative Text for Indonesian EFL Learners,“ *Scope: Journal of English Language Teaching*, zv. 1, %1. vyd.1, pp. 17-28, 2016.
- [11] F. Fachruddin, R. Santosa a T. Wiratno, „Analisis Terjemahan Istilah Teknik pada Buku Fundamental of Engineering Thermodynamics,“ *The Prasasti: Journal of Linguistics (PJJL)*, zv. 3, %1. vyd.1, pp. 47-64, 2018.
- [12] S. Izwaini, „A corpus-based study of the translation of IT terms,“ *ESP Across Cultures 2*, pp. 76-93, 2005.
- [13] A. Handayani, „Analisis ideologi penerjemahan dan penilaian kualitas terjemahan istilah kedokteran dalam buku ”lecture notes on clinical medicine” (Kajian Terhadap Istilah Kedokteran Lecture Notes on Clinical Medicine dan Istilah Kedokteran Lecture Note Kedokteran Klin,“ Program Studi Linguistik Penerjemahan Pascasarjana Universitas Sebelas Maret, Surakarta, 2009.
- [14] B.-e. Hassan, „Translating Scientific Terminology: Examples from the Arabic versions of Two International Magazines,“ *Mediterranean Journal of Social Sciences*, zv. 8, %1. vyd.2, pp. 183-193, 2017.
- [15] J. M. Giaber, „Differences in Word Formation between Arabic and English: Implications for Concision in Terminology Translation,“ *Al-'Arabiyya*, zv. 50, pp. 53-79, 2017.

- [16] D. Huber, „Phonetic Aspects in Translation Studies,“ rev. *FONETIK*, Mainz/Germersheim, 2005.
- [17] I. K. Kobyakova, „Grammatical Aspects of Translation,“ *Filologični Traktati*, zv. 10, %1. vyd.2, pp. 60-66, Juli 2018.
- [18] M. L. Larson, *Meaning-based translation: a guide to cross-language equivalence*, Lanham; New York; Oxford: University Press of America, 1998.
- [19] A. Radford, *Syntax: A Minimalist Introduction*, Cambridge: Cambridge University Press, 1997.
- [20] Sriyono, „Aspek Linguistik dalam Penerjemahan,“ *Prosodi: Jurnal Ilmu Bahasa dan Sastra*, zv. 12, %1. vyd.2, pp. 273-281, 2018.
- [21] N. Armstrong, *Translation, Linguistics, Culture: A French-English Handbook*, Clevedon: Multilingual Matters, 2005.
- [22] R. Bogdan a S. Biklen, *Qualitative Research in Education: An Introduction to Theory and Methods*, Needham Heights, MA: Allyn & Bacon, 1988.
- [23] M. Miles a A. Huberman, *Analisis Data Kualitatif*, Jakarta: Penerbit Universitas Indonesia, 1984.
- [24] V. A. Fromkin, *Linguistics : an introduction to linguistic theory*, New York: Blackwell, 2003.
- [25] A. Chaer, *Tata bahasa praktis bahasa Indonesia*, Jakarta: Rineka Cipta, 2006.
- [26] M. Ramlan, *Sintaksis*, Yogyakarta: Karyono, 1981.
- [27] P. Simons, *Parts: A Study in Ontology*, Oxford: Clarendon Press, 2000.
- [28] R. E. Beard a M. Volpe, „Lexeme-Morpheme Base Morphology: A General Theory of Inflection and Word Formation,“ *Language*, zv. 72, %1. vyd.4, p. 812, 1996.
- [29] D. Astriyanti, „AN ANALYSIS ON STUDENTS’ DIFFICULTIES IN THE USE OF PLURAL “-S” FORM AND SIMPLE PRESENT MARKER “-S”,“ *Jurnal Pendidikan Bahasa*, zv. 5, %1. vyd.1, pp. 39-50, 2016.
- [30] H. Alwi, *Tata bahasa baku bahasa Indonesia*, Jakarta: Balai Pustaka, 1998.

[31] J. C. Catford, *A linguistic theory of translation*, London: Oxford University Press, 1965.