Summary of PhD thesis

Voice shift in the translation from Dutch into Indonesian

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1. INTRODUCTION¹

In translation, the message transferred from one language to another language is the most important aspect. The message is expressed not only in the form of lexicon but also of grammar which functions as the principle for the lexicon structures (Fromkin, Rodman, and Hyams 2003; Givón 1990; Nida and Taber 1974). Givón (1990) states that grammar, which consists of morphology and syntax, encodes semantic and pragmatic meanings. Voice, as a grammatical category, must certainly encode meaning as well.

The term voice “alludes to the different ways a verb might be, so to speak, sounded (Latin *vox* ‘voice’), i.e. to its repertoire of forms or to variation

¹ This PhD thesis summary focuses on the research topics that are tailored to the theme of the edition. The original PhD thesis “Pergeseran diatesis dalam terjemahan teks ilmiah dari bahasa Belanda ke dalam bahasa Indonesia” is accessible through: <http://lib.ui.ac.id/detail?id=20493115&lokasi=lokal>.

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in the verb's disposition (Greek diathesis) according to alternations in its relations with sentential arguments" (Klaiman 1991: 2). Klaiman (1991) goes on to explain that traditional English linguists view voice as an alternative perspective, regarding transitive structures in which a predicate has at least two arguments, agent, and patient. A clause is active if the action notionally devolves from the standpoint of the most dynamic, or active, party involved in the situation, typically the agent as in sentence (1). A clause is categorized as passive if the action notionally devolves from the standpoint of a non-dynamic, such as the patient, as in sentence (2).

(1)	Adam opens the door.	active
(2)	The door is opened (by Adam).	passive

Previous research has indicated that the frequency of passive sentence use in Indonesian is higher than that in Dutch as Jisa et al. (2002) mention that the use of passives in the Dutch narrative genre is only 8.01% and in expository texts 15.2% of all clauses, while in Indonesian, Cumming (1991: 161-162) shows that the use of passive clauses in narrative texts is 31% of all verb clauses being analysed. On these grounds, she argues that the use of the passive voice in modern Indonesian has become less frequent than before. In Classical Malay, according to Cumming, the use of passive clauses is as high as 73%. However, the quantity comparison on the voice use in Indonesian and Dutch based on these researches can lead to a bias because of different methods of quantification. Jisa et al. (2002) compare the use of active and passive voice in all clauses, while Cumming (1991) compares the use of active and passive clauses only with transitive verbs.

However, these researches do indicate use frequency differences between active and passive voice in Dutch and Indonesian (even though the quantification still needs to be examined using the same methods). The use of frequency differences can lead to voice shift (from active to passive or maybe *vice-versa*). Therefore it is important to undertake research in this area so that a translator can take the appropriate target text (TT) structure, regarding the form of voice, into consideration in order to build the meaning of the TT in the target language (TL) equivalent with that in the source text (ST), since voice plays a role in building meanings. The problem discussed in this article is the equivalence of voice translation from Dutch into Indonesian. It is elucidated in the following research questions:

1. What is the probability of voice equivalence in Dutch and Indonesian?
2. What are the causes and the consequences of voice shift in the translation of Dutch into Indonesian?

The answers to the two questions will explain the equivalence of voice translation from Dutch into Indonesian.

2. RESEARCH METHODOLOGY

The approach used in this research is a combination of a quantitative and a qualitative one. The data unit is in the form of clauses explicitly written in the proceedings of Dutch Studies Congress in Indonesia published in 2011 and 2016. The data consist of 3,085 clauses in Dutch abstracted from ten articles written by ten Dutch native-speakers from the Netherlands and translated by ten different translators. Data from scientific texts is very appropriate to this research since scientific texts are generally translated using a communicative method (Colina 2015: 14). Therefore, a voice must be used with a reason based on the structure and context of the ST and TT as well and not based on feeling or aesthetics.

Out of 3,085 Dutch clauses, 2,410 are verbal clauses. All these verbal clauses are classified into two voices, agentive voice with an agent as the standpoint and patientive voice with a patient as the standpoint. These two terms, agentive and patientive voice, are used as a simplification to avoid misconceptions since the term passive voice in Indonesian is still being debated because some people are advocating exchanging it for the ergative.² The Dutch clauses, both agentive and patientive voice, correlated with one Indonesian predicate forms, namely: verbs with prefixes *meng-*, *ber-*, *di-*, *ter-*, *ke-an*, verbs without prefixes (WP), non-verbal predicates (NvP) or only phrases (P). The result of this quantitative analysis provides answers to the probability of voice equivalence in Dutch and Indonesian. Friedman's test is applied to make sure that the probability is homogeneous (Field 2009), namely: that all translators have the same tendency when translating agentive or patientive voice.

The next step was to determine which of the 2,410 clauses with verbal predicates in the ST undergo voice shifts. Qualitatively, the cause of voice shift is viewed on a lexical, grammatical, or textual level in line with the concepts of Givón (1990) and Baker (2011). Furthermore, the effect of the shift on the propositional and textual meaning is also analysed by comparing the propositional meaning of the clause in the target text and in the source text. The result of this qualitative analysis yields the causes of voice shift in the translation of Dutch into Indonesian on a lexical, grammatical, or textual level as well.

² According to Muslim (2003), Indonesian has an ergative construction with two main arguments, a patient subject and an agent object as in the following example:

S		O
<i>Anjing itu</i>		<i>dicium Ali.</i>
dog that		di-kiss Ali'

'That dog is kissed by Ali.'

The phrase *anjing itu* is the subject as the patient of the verb and Ali is the object as the agent.

3. QUANTIFICATION OF VOICE TRANSLATION

The data consisting of 3,085 Dutch clauses show the voice use in Tables 1 and 2.

Predicate type		Number of clauses	
Verbal	Agentive	2,024	65.61%
	Patientive	386	12.51%
Nonverbal		675	21.88%
Total		3,085	100.00%

Verb clause		Number of clauses	
Agentive	2,024	83.98%	
Patientive	386	16.02%	
Total	2,410	100.00%	

Table 1. Dutch clauses.

Table 1. Dutch clauses.

Counting the frequency of one prefix form in the TT as the equivalent of one voice form divided by the total number of voice forms in the ST, both agentive and patientive, the equivalent probability of verbal predicate translation from Dutch to Indonesian can be seen in Table 3.

Dutch	Indonesian																Total	
	<i>meng-</i>		<i>ber-</i>		WP		<i>di-</i>		<i>ter-</i>		<i>ke-an</i>		NvP		P			
Agentive	1,066	.527	288	.142	313	.155	134	.066	99	.049	7	.003	74	.037	43	.021	2,024	1.000
Patientive	30	.078	18	.047	12	.031	274	.710	26	.067	0	.000	21	.054	5	.013	386	1.000
PV	1,096	.455	306	.127	325	.135	408	.169	125	.052	7	.002	95	.039	48	.199	2,410	1.000

Table 1. Dutch clauses.

The data on the frequency spread of agentive and patientive clause equivalence among ten translators give a visualized probability as can be seen in Figures 1 and 2 which show differences in the equivalence tendency. Verbal predicates with prefix *meng-* (such as in *menggarap* ‘to cultivate’) are canonical agentive voice which is made the equivalent of an agentive voice clause and those with prefix *di-* (such as in *digambarkan* ‘to be depicted’) are canonical patientive voice which is made the equivalent of a patientive voice clause.

Figure 1. Probability of agentive voice equivalent.

Figure 2. Probability of patientive voice equivalent.

Disregarding WP verbs (325),³ the total number of clauses analysed decreased to 2,085 (Total - WP = 2,410-325, see Table 3). From this total 2,085 clauses, 431 clauses are in the ST and these undergo a voice shift in the TT (20.67%). Of the

³ This structure is still being debated and is considered an ergative structure by some linguists.

total 2,085 clauses, there are 240 (11.86%) with a voice shift from agentive to patientive and forty-eight clauses (12.44%) with a voice shift from patientive to agentive as can be seen in Table 4. The clause shift to a clause without voice produces a considerable number, 117 agentive clauses out of the total 2,085 clauses (5.78%) and 26 (6.74%) patientive clauses shift to those without voice. The percentage age shows that the shift is not a coincidence and cannot be considered an error. In statistics, the normal percentage age error is 5%. The voice shifts are more than 5%, even higher than 10%.

Agentive > Patientive (<i>di-</i> , <i>ter-</i> , <i>ke-an</i>)		Agentive > Non-voice (NvP, P)		Patientive > Agentive (<i>meng-</i> , <i>ber-</i>)		Patientive > Non-voice (NvP, P)	
240	(11.86%)	117	(5.78%)	48	(12.44%)	26	(6.74%)

Table 4. Voice shift of 431 clauses in ST into TT.

A shift occurs more frequently in certain clauses than in others. The agentive clauses which shift most frequently are those with an inverted structure V-S (107 clauses) and relative clauses with antecedents which function as objects in them (74 clauses). The patientive clauses which most frequently undergo a voice shift are also those with an inverted structure V-S (20 clauses) and relative clauses (17 cases). However, the relative clauses with patientive voice which frequently undergo a voice shift are those with antecedents the under prepositional phrases in them. Furthermore, the clauses with the canonical S-V structure also undergo a voice shift, both in the clauses with agentive (99 cases) or with patientive voices (19 cases). The next section provides analyses of some voice shifts.

4. THE CAUSES AND CONSEQUENCES OF VOICE SHIFT

A text is a network with many levels of meaning which can be lexical, propositional, and textual (Givón 1990: 33). Lexical meaning is the part which builds propositional meaning, before proceeding to play a part in building a discourse which can be understood as the term “textual meaning” used by Baker (2011). Following Givón (1990) and Baker (2011), the analysis of causes and consequences of voice shift is based on lexical, grammatical, and textual levels.

A. LEXICAL LEVEL

On the lexical level, voice shift is caused by a shift of the verb as the nucleus of the clause. The data show that voice shift occurs when the verb in a clause is either not translated or translated as another word class, a verbal predicate then changed into a phrase or a non-verbal predicate resulting in a unit shift or class shift. Although a verb is translated into another verb, one with an equivalent in the TT but with different valencies, the number of arguments can be different and therefore an adjustment sometimes needs to be made

to the clause structure in accordance with the given information in the ST. Furthermore, a voice shift also occurs either because of the retention of an aspectual meaning or caused by collocation (a tendency for words to appear commonly with certain other words) and colligation (a tendency of words to appear in conjunction with certain grammatical features).⁴

Verbs can disappear or undergo a word class shift to adjectives or nouns. Because of the shift, the main predicate also undergoes a shift from a verbal to a non-verbal predicate.

- (3) ST *terwijl het verzoek precies het tegenovergestelde beoogde!*
 while art. request exactly art. opposite intend.past
- TT *sementara maksud permintaan tersebut justru sebaliknya*
 while intention request mentioned exactly opposite-def.
- ‘while the request intended exactly the opposite’

In example (3), the clause in the ST has a verbal predicate, whereas in the TT it is a non-verbal one. The verb *beoogde* and the argument *het verzoek*, which functions as the subject/agent in the ST, are translated as a noun phrase *maksud permintaan* functioning as the subject in the TT. The non-verbal predicate *sebaliknya* is the translation of *het tegenovergestelde*, which functions as the object/patient in the ST. The propositional meaning of the clause in the TL is approximately the same as the clause in the ST, namely: that the person’s request is the opposite. However, the clause in the ST is a metaphor in the form of a personification, since *het verzoek*, an inanimate noun, becomes the agent of the verb *beoogde*. In Indonesian, the metaphor has been made explicit.

Furthermore, the main predicate can shift into a prepositional phrase when a verb disappears. In (4) the verb *gingen* in the ST is not translated in the TT, resulting in the prepositional *ke bawah* becoming the predicate of the clause in the TT.

- (4) ST *dan gingen wij met moeder naar beneden*
 then go.past pron.1plu. prep. mother prep. down
- TT *lalu [مس] kami ke bawah bersama ibu*
 then we prep. down together mother
- ‘then we went down with mother’

A clause can also undergo a unit shift into a nominal phrase as in (5) or a prepositional phrase as in (6). The verb *vindt* ‘think’ as a verbal predicate is translated in the TT as *pendapatnya* ‘the thought’, a noun phrase. In (6), the verb *schuilgaan* ‘hide’ is not translated and the clause shifts to become a prepositional phrase *di balik perbedaan-perbedaan fisik semacam itu*.

⁴ Hoey 2005.

- (5) ST *Een spreker zegt wat hij van iets vindt*
 art. speaker say what pron.3sing.m. prep. something thinks
- TT *Seorang penutur menyatakan pendapatnya tentang sesuatu*
 art. speaker state thought.def. prep. something
- ‘A speaker says what he thinks about something.’
- (6) ST *de dieperliggende waarden die achter dergelijke, uiterlijke verschillen schuilgaan*
 art. deep underlying norm.plu. rel.pron. prep. such physical difference.plu. hide
- TT *nilai-nilai yang lebih dalam [...] di balik perbedaan-perbedaan fisik semacam itu*
 norm.plu. rel.pron. more deep prep. behind difference.plu. physical a sort of that
- ‘the deep underlying norms which lurk behind such physical differences’

A predicate also acquires an additional element, forming either a prepositional phrase or another verbal phrase. In (7) the prepositional phrase *dalam keadaan* is an addition and the verb *digambarkan* in (8) is also additional.

- (7) ST *In 1778 drong de lutherse predikant Jan Hooijman bij de Raad van Indië daarop aan, omdat hij vond dat de opvoeding van de kinderen ‘ten uitersten bedorven’ was.*
 prep. 1778 push.past art. luther minister Jan Hooijman prep. art. Council prep. Indie about it prep. because pron.3sing.m. opine.past that art. education prep. art. children prep. most spoile.part. aux.pas.past
- TT *Pada 1778 pendeta Luther Jan Hooijman mendesak Dewan Hindia-Belanda mengenai sekolah campuran itu karena dia berpendapat bahwa pendidikan anak-anak ‘dalam keadaan rusak’.*
 prep. 1778 push.past luther Jan Hooijman push Council Indie-Dutch⁵ about school mix that because he opine conj. education child.plu. prep. condition broken
- ‘In 1778 the Lutheran Minister, Jan Hooijman, importuned the Council of the Indies because he thought that the education of the children in [the mixed school] “was extremely bad”.’

⁵ The name Dutch East Indies is officially used since 1816, after independent Dutch control was restored (Sunjayadi 2017: 38).

- (8) ST Zo gaat in alle drie romans de oude
so go prep. all three novel.plu. art. old
oosterse wereld voorgoed ten onder.
east world forever prep. under
- TT Dalam ketiga novel, dunia Timur lama digambarkan hilang
prep. three novel world East long di-depict disappeared
untuk selamanya.
forever
- ‘In all three novels, the old world of the East disappears forever.’

The forms of voice shift on the lexical level found in the data of this research are summarized in Figure 3.

Figure 3. Summary of verbal shift.

Sometimes, the shift influences the propositional meaning a little bit, making the aspectual meaning slightly different. The predicate in (8) *gaat ... ten onder* ‘goes under/sinks’, for example, has a dynamic meaning in the ST but in the TT *hilang* ‘disappears’ has a static meaning. The additional verb *digambarkan* ‘to be depicted’ does not describe the process of the disappearance of the Eastern world, but offers additional information about what is depicted in the three novels. However, the main meaning of the whole sentence is still delivered.

On the lexical level, a voice shift is caused by the divergent valency of the verb in the ST and in the TT. The existence of arguments is determined by verb valency; therefore, the differences can lead to a voice shift.

- (9)

ST

Het gebouw waarin de school was *gevestigd*,
art. building rel.adv. art. school aux.pas.past establish.part.
- TT

Bangunan tempat sekolah itu *berada*,
Building place school that exist

‘The building in which the school was located,’

A predicate with two valencies, like the verb *vestigen* ‘to establish’ in clause (9), for instance, can be translated as a predicate with one valency like *berada*, and *vice-versa*. These data of verbs translated with different valencies (Val) are summarized in Table 5.

Dutch		Indonesian		
		Val 1	Val 2	
agentive	Val 1	patientive	√	√
	Val 2		√	√
	Val 3		√	√
patientive	Val 1	agentive	√	√
	Val 2		√	√

Table 5. The number of arguments in a clause.

Voice shift can cause an aspectual meaning shift. However, sometimes maintaining the aspectual meaning which plays a role in forming a clause might even cause a voice shift. In Indonesian, certain prefixes have certain aspectual meanings. ST predicates which are made the equivalent of *ter*-prefixed verbs take the form of present and past tenses, perfect and imperfect. However, when a continuative aspectual meaning is emphasized in a clause, the ST verb is not made equivalent to the *ter*-prefixed verb but to the *ber*-prefixed verb.

- (10)

ST

De *mate* waarin dat *gebeurt*, *verschilt* overigens *per* *deel*,
art. size rel.adv. that happen differ moreover prep. part
- TT

Skala *terjadinya* *hal* *tersebut* *berbeda* dalam *setiap* *bagian*,
scale occurrence thing mentioned differ prep. each part

‘The scale in which this occurs differs per part/section,’
- (11)

ST

Dat *gebeurde* *ook* *nu*
that happen.past also now
- TT

Itu *pun* *berlangsung* *saat* *itu*.
that even take place time that

‘This also happened now.’

For example, the verb *gebeuren* 'happen' in is made equivalent to the *ter*-prefixed verb as in (10), unless used in a sentence which has a continuative aspectual meaning, then *gebeuren* is translated with the *ber*-verb in (11).

Voice also shifts because of collocation and colligation. Collocative words are so called because of their high frequency of occurring together.

- (12) ST *Drie jaar na de stichting van Batavia in 1619*
 three year prep. art. establishing perp. Batavia prep. 1619
kwam er ook een school in deze Oostindische hoofdstad
 come.past adv. also art. school prep. this East Indie capital city
- TT *Tiga tahun setelah berdirinya Batavia, pada tahun 1619*
 three year after establishment Batavia prep. year 1619
didirikan pula sebuah sekolah di ibukota Hindia-Belanda ini.
 establish also art. school prep. capital city Indie-Dutch this
- 'Three years after the establishment of Batavia, a school was also founded in the East Indian capital in 1619.'

In Indonesian, there is in fact a formal correspondence for the word *kwam*, namely *datang* 'come'. However, *sekolah* 'school' has its own collocation, namely *didirikan* 'establish'.

Furthermore, equivalence also has its own colligation or grammatical characteristics, for instance, the word *blijken*.

- (13) ST *Dat de schoolmeesters goed hun best deden,*
 that art. school teacher.plu. good pos.3plu. best do.past.plu
blijkt uit het voorstel van gouverneur-generaal
 appear prep. art. proposal prep. governor general
Antonio van Diemen (1636-1645).
Antonio van Diemen (1636-1645).
- TT *Bahwa para guru sekolah itu sudah melakukan yang terbaik,*
 that art.plu. teacher school that already do rel.pron. best
dapat diketahui dari usulan Gubernur Jenderal
 can di-know prep. proposal Governor General
Antonio van Diemen (1636-1645).
Antonio van Diemen (1636-1645).
- 'That the teachers of the school did their best is clearly shown by the proposal of Governor-General Antonio van Diemen (1636-1645).'

The verb *blijken* can be said to be a fact signifier. In Indonesian, the signifier generally takes the form of a verb with a patientive voice. The verb *blijken*, which appears sixteen times in the corpus, is almost always translated with the patientive voice with either *di*- or *ter*- prefixes. Six times, the verb *blijken* is made equivalent to *ternyata* 'appear', four times to *terlihat* 'seen', to *diketahui*

'known' and *terbukti* 'proven' twice respectively, once with *tampak* 'seem' and once it is not translated.

B. GRAMMATICAL LEVEL

On the grammatical level, a voice shift is caused by the grammatical differences between Dutch and Indonesian. In Indonesian, an object cannot be fronted, while in Dutch object fronting is very commonly found in the inverted structure of the main clause, relative clauses and in interrogative sentences. In Dutch, a constituent which becomes a topic can be fronted, including object/patient, without having to change the voice.

- (14) ST *Het motto voor zijn bundel ontleende*
 art. moto prep. pos.3sing.m. bundle borrow.past
Steendam aan psalm 148 vers 7 en 12:
 Steendam prep. psalm 148 vers 7 and 12

- TT *Moto dari kumpulan syairnya dipinjam*
 moto prep. bundle poem-pos3sing.m. di-borrow
Steendam dari mazmur 148 ayat 7 dan 12
 Steendam prep. psalm 148 vers 7 and 12

'The motto of his poetry anthology was borrowed by Steendam from Psalm 148, verses 7 and 12.'

In the ST, the clause begins with an object as the patient and the subject comes after the verb. In Indonesian, if a clause begins with a patient, there are two possible structures resulting in different use of prefix as in the following clauses.

- (14) a. *Moto dari kumpulan syairnya dipinjam Steendam.*
 b. *Moto dari kumpulan syairnya Steendam pinjam.*

The clause in (14b) is a typically informal structure and not commonly found in Indonesian academic texts. In the corpus, a structure as (14b), patient – agent – bare verb with the agent in the form of noun, does not exist. This structure is found only with the agent in the form of pronouns as in (15).

- (15) ST *Daarbij putten zij rijkelijk uit het oude*
 thereby draw pron.3plu. plenty prep. art. old
oriëntalistische discourse.
 orientalist discourse

- TT *Hal ini mereka gali dari wacana orientalis kuno.*
 matter this pron.3plu. dig prep. discourse orientalist archaica
 'Thereby they drew heavily on the old orientalist discourse.'

In Dutch, a relative clause is marked by a relative pronoun or pronominal adverb. If a phrase refers to an antecedent governed by a preposition, the relative clause is inserted with a pronominal adverb *waar* (= *wat*) as in sentence (16). Indonesian does not have this structure. In Indonesian, a relative clause can only be inserted by using the word *yang* 'that/which' with an antecedent which functions as a subject within that relative clause. Therefore, one problem in translation can be solved by a voice shift. In the corpus, more than 30% (32 out of 95) clauses with relative adverbs *waar* + preposition undergo a clause structure shift involving a voice.

The relative clause in (16) is translated by making *yang* as the equivalent of *waarop* and making the antecedent an argument function as the patient of the predicate in the relative clause. Since an object cannot be fronted in Indonesian, the voice shifts to a patientive.

- (16) ST *waar eenvoudige boeren het land bewerken op*
rel.adv. simple farmer.plu. art. land cultivate prep.
dezelfde manier waarop hun voorouders dat
same method rel.adv. pos.3plu. ancestor.plu. rel.pron.
op al eeuwenlang hebben gedaan.
prep. already century.plu.-long aux. do.part.
- TT *Di sana para petani menggarap tanah dengan cara*
that art. plu. farmer meng-cultivate land prep. method
yang telah dilakukan nenek moyang mereka selama
rel.pron. already di-do ancestor pos.3plu. during
berabad-abad.
ber-century.plu.
- 'There, the farmers cultivate the land using the same methods their ancestors have followed for centuries.'

The clause with *waar* + preposition is translated with a clause and the relative adverb is translated as a conjunction as in the clause in (17) in which *waardoor* is translated as *sehingga*.

- (17) ST *Vlaanderen en Nederland worden zo veel mogelijk*
Flanders and Netherland aux.pas. so much possible
gezamenlijk behandeld, of in ieder geval parallel en
together handle.part. or prep. each case parallel and
gelijkwaardig, waardoor identieke verschijnselen aan het
equivalent rel.adv. identic phenomenon.plu. prep. art.
licht komen, [...]
light come

TT *Flandria dan Belanda sebanyak mungkin secara*
 Flanders and Netherland as much possible in a manner
bersama-sama dibahas, atau setidaknya diusahakan dibahas
 together di-discuss or at least di-make effort di-discuss
secara paralel dan berimbang, sehingga ciri-ciri
 in a manner parallel and equivalent so that characteristic
yang identik terlihat, [...]
 rel.pron. identic ter-see

‘Flanders and the Netherlands are discussed together as much as possible, or at least efforts are made to discuss them in parallel and as equals, so that the identical characteristics can be clearly distinguished, [...]

In the corpus, relative clauses with prepositions are sometimes not translated as relative clauses, but are changed into phrases as in the example (10), in which the clause *waarin dat gebeurt* is translated as *terjadinya hal tersebut*.

C. TEXTUAL LEVEL

On the textual level, a voice shift occurs to keep the word order the same as the ST. Word order determines the information flow which becomes a tool for cohesion. Therefore in general, the first phrase order in the TT does not undergo a shift. Out of 3,085 clauses, 2,440 clauses in the TT (79.1%) retain the first phrase order, the same as those in the ST, and 1,362 of 1,634 sentences in TT (83.4%) retain the first phrase order, the same as that in the ST (see Table 6).

Unit	Same first phrase		Total	
Clauses	2,440	79,1%	3,085	100%
Sentence	1,362	83,4%	1,634	100%

Table 6. The same first phrase in clauses and sentences.

The retention of the word order in the first sentence at the beginning of a paragraph is even higher, namely 88.6% (225 of 254 sentences). Retention of the voice in the first sentence at the beginning of a paragraph is rather low. Out of 254 sentences at the beginning of a paragraph, only 111 sentences (43.7%) do not undergo a voice shift. If the quantification is focused only on the verbal predicates, the percentage of sentences which do not undergo a voice shift is 66% (111 of 168 sentences). In other words, fifty-seven (33.9%) sentences undergo a voice shift. Meanwhile, 151 of 168 (89.9%) sentences in the ST are translated into the TT using the same word order (see Table 7).

Belanda yang digdaya di rimba raya Atjeh.
 Netherland rel.pron. powerful prep. jungle great Aceh

'The central story is the six years in which Dhien led her guerrillas against the powerful Dutch army in the wild mountain jungle of Aceh.'

Furthermore, another form which causes a voice shift is predicate fronting. This structure is a marked structure, especially in Indonesian. However, in (19) the structure is maintained in the TT. In its translation, the structure undergoes a voice shift to keep the word order following the principle of "end-focus", the older information preceding the newer and of "end-weight", the newer information with a higher value is at the end (Greenbaum and Quirk 1990).

- (19) ST *Bedoeld is dat de aangesprokene dan niet van*
 mean.part. aux.pas. that art. addressee then neg. prep.
Marokkaanse, Turkse of Antilliaanse afkomst is
 Moroccan Turkish atau Antillean origin aux.
en waarschijnlijk ook dat de aangesprokene
 and probably also that art. addressee
geaccepteerd wordt.
 accept.part. aux.pas.

- TT *Maksudnya adalah bahwa yang diajak bicara bukanlah*
 intention.def. aux. that rel.pron. di-ask talk neg.
orang yang berasal dari Maroko, Turki atau
 person rel.pron. originate prep. Morocco Turkey or
Antilian dan barangkali juga berarti yang diajak
 Antilles and probably also mean rel.pron. di-ask
bicara diterima.
 talk di-accept

'What is meant is not that the person addressed whether of Moroccan, Turkish or Antillian descent, and that the addressee is probably accepted.'

Besides information structure, text cohesion must also be maintained. The elimination of an argument can be said to be a form of ellipsis which causes a voice shift. However, referent and conjunction can function as a cohesion tool which retains the textual meaning even though it undergoes a voice shift. The voice shift in (5) occurs with an accompanying unit shift. The clause *wat hij van vindt* is translated to *pendapatnya tentang hal itu*. The use of a referent is kept to maintain the text cohesion. In (17), a conjunction *sehingga* is used to maintain the meaning or causer expressed by the relative adverb *waardoor*. Besides its part in a lexical chain, text cohesion is also embodied in a parallel chain. The word order is indeed very important in a text. However, sometimes the voice is maintained while the word order can shift if the voice form is a parallel chain.

- (20) ST *De Nederlandse landmeter en cartograaf in onderkoopmansrang Jacob de Bucquoy (1693-1772) had voor zijn vertrek naar Oost-Indië reken- en wiskundeles gegeven₁ en boekhoudingen gecontroleerd₂. In zijn reisverhaal Zestien jaarige reize naa de Indiën schrijft₃ De Bucquoy hoe hij 's nachts zijn kennis opfriste₄ voor zijn lessen in rekenen, geometrie en andere disciplines van de wiskunde. **De meetinstrumenten maakte**₅ **hij zelf**. Aanvankelijk schreef₆ hij zelf zijn leerstof maar kocht₇ die later bij openbare verkopeningen of venduties van particuliere bibliotheken.*
- TT *Ahli ukur dan kartograf Belanda, Jacob De Buckquoy (1693-1772) sebelum keberangkatannya ke Hindia-Timur memberikan₁ pelajaran berhitung dan mengawasi₂ pembukuan. Dalam cerita perjalanannya, Zestien jaarige reize naa de Indiën De Bucquoy menulis₃ bagaimana dia pada malam hari mengulang kembali₄ pelajaran-pelajaran berhitung, geometri dan disiplin ilmu pasti lainnya. **Dia pun membuat**₅ **alat ukur sendiri**. Awalnya dia menulis₆ sendiri bahan ajarnya tetapi kemudian dia membeli₇ di penjualan umum atau pelelangan di perpustakaan swasta.*

As can be seen in the example (20), the parallel of agentive voice is maintained even though the word order in this sentence is shifted at the fifth verb, namely *membuat* 'to make'. The sentence in the ST begins with an object/patient of the verb *maakte*. In Indonesian, beginning a sentence with a patient will generate a patientive voice. Therefore, to maintain the voice, the sentence begins with the agent *dia* resulting word order shift.

5. VOICE SHIFT, TRANSLATION STRATEGY, AND EQUIVALENCE

Dutch agentive clauses are generally equivalent to *meng-* and *ber-*prefixed agentive verbs, with a probability of 0.669. Agentive clauses are more equivalent to canonical agentive clauses with *meng-*prefixed verbs, with a probability of 0.527. Dutch patientive clauses are generally equivalent to canonical patientive clauses with *di-*prefixed verbs, with a probability of 0.710. Under certain conditions, a voice can shift from agentive into patientive.

The differences in grammatical rules between the SL and the TL require a translator to apply a strategy. Translation strategy is related to problem-solving as a process which includes the understanding of surface structure of the ST as a deep structure and the deep structure reformulation of the TT, implemented by a certain technique which influences a micro unit (Molina and Albir 2002: 499). One of the techniques which can be applied is a voice shift. Shifting the voice carries a less risk of meaning shifts than changing the word order, since a shift in word order causes a shift in thematic and information structure which exerts influence on the textual level.

In Dutch, agent backgrounding can be done in both the agentive and patientive voice. Dutch agentive clauses can begin with a theme with any semantic function without affecting the voice form. In Indonesian, clauses which begin with patients must have the patientive voice. The patientive voice is a syntactic category which functions to diminish the agency degree. In Dutch, that function can also be taken over by the use of agent in the form of

indefinite pronouns. In Indonesian, the use of the patientive voice in scientific texts is more frequent than the use of indefinite pronouns.

Furthermore, the verbal affix in Indonesian, which is closely related to voice, has various functions. A verbal affix is also related to the number of participants and word order as the main elements in a text. Therefore, it is important to retain both elements.

A voice shift can be caused directly by a linguistic limitation in the TL, for instance, a difference in a verb valency. If a number of arguments in the TT is more than the available information, this can cause a voice shift from agentive to patientive. However, Figure 4 illustrated that a voice shift can also be caused by a linguistic limitation which is resolved by resorting to a solution which causes another linguistic limitation requiring a voice shift. A limitation in relative adverbs, for example, can be solved by eliminating the preposition so that the constituent which is not an argument shifts into an argument. This can raise another problem, if the argument has a semantic function as a patient. Since an object in Indonesian cannot be fronted, the patient can take a syntactic function as a subject so that the voice must be patientive.

Figure 4. Causes of voice shift.

Scientific texts are generally translated using a communicative method (Colina 2015: 14) which emphasizes the proper delivery of the message to the readers by preserving accuracy. When a translator faces a translation problem, the translation strategy which should be implemented is to preserve the message in the ST by prioritizing the TT. A voice shift is the result of translation strategy implementation. If the voice form in the ST cannot be maintained, a translator should shift the voice. As Chesterman (2010) states, *shift* is the only strategy used by a translator to manipulate textual material to achieve the goal of translation which can be applied in reproducing or reformulating a text.

The problem of the lexical meaning of the ST which is not completely the same as its equivalent in the TT arises from an incomplete meaning component (Catford 1965), as is also the case in the equivalence of structure component. The same structure does not always have the same meaning component (see Figure 5).

Figure 5. Diagram of meaning structure component.

Hence Baker (1993: 236) states that questioning how an equivalence can be achieved is no longer important but what is important is questioning what kind of equivalence can be achieved in what context.

Communicative method emphasizes the message proper delivery to the readers by preserving accuracy. Therefore, simplification and explication can be clearly regarded as a part of the translation strategy mentioned by Baker (2011) theoretically (without empirical proof) and can be said to be one of universal signs in translation (Baker 1993). This research has resulted empirical proofs. Missing voice caused by the shift of a clause into a phrase is a form of message simplification. Voice shift as the result of an abstract-concrete shift is a form of explication. Voice shift occurs in conjunction with explication and simplification so that the meaning of a message can be more easily understood. A complex sentence structure is simplified by a nominalization which resolves a conflict of syntactic and discourse function without changing the main meaning since cohesion is still maintained.

6. CONCLUSION

Voice in Indonesian is closely related to affixes. The use of an affix in Indonesian not only influences aspectual meanings and verb valency on the lexical level, it is also related to voice and word order on the grammatical level, as this exerts influence on the textual level. In the translation of a ST, the three levels interact to build the meaning of the TT and consequently they influence the form of voice in the SL.

A voice shift is the result of translation strategy implementation used to solve a problem arising in translation. This strategy is functional and adapts to the need in a certain context. The maintenance of word order in a clause is more important in translation than voice because the first constituent is an important element in the information flow on the textual level. However, voice parallelism should be maintained if it is important on the textual level.

A voice shift causes a meaning shift. Verb aspectual meaning and argument, which give a description of nuances affecting a condition or event, change with the voice shift. However, the meaning of the main clause does not change. A condition or event and its participants stays the same. A voice shift which accompanies the elimination or addition of arguments does not cause a shift in meaning because it is always based on the context, so that the number of arguments is compensated in the referent. Therefore, the clause meaning of the TT is equivalent to that of the ST. Grammatically speaking, a shift is considered to be inequivalent in form, but remains equivalent in terms of meaning. In translation, scientific texts which apply a communicative method must achieve equivalence which prioritizes appropriate contexts on the textual level so that the content and form can be accepted.

LIST OF ABBREVIATIONS

1	:	first person	part.	:	participle
2	:	second person	pas.	:	passive
3	:	third person	plu.	:	plural
adj.	:	adjective	pos.	:	possessive
adv.	:	adverb	PP	:	proposition phrase
AP	:	adjective phrase	prep.	:	preposition
art.	:	article	pron.	:	pronoun
aux.	:	auxiliary	rel.	:	relative
conj.	:	conjunction	S	:	subject
def.	:	definite	sing.	:	singular
f.	:	feminine	SL	:	source language
m.	:	masculine	ST	:	source text
n.	:	noun	TL	:	target language
neg.	:	negation	TT	:	target text
NP	:	noun phrase	V	:	verb
NvP	:	non-verbal predicates	Val	:	valency
O	:	object	VP	:	verb phrase
P	:	phrases	WP	:	without prefix

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