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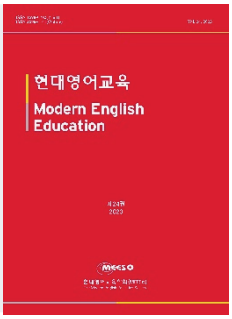

Analysis of Passives in English-to-Korean Machine Translation Systems' Output*

Chae-Eun Kim (Pusan National University)

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Chae-Eun Kim
Assistant Professor
Department of English Education
Pusan National University
alohachaeeun@pusan.ac.kr

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Abstract

Artificial intelligence (AI)-based tools for teaching and learning English as a foreign language have become increasingly functional, leading to the growing use of AI translators and chatbots in fields of English education and research. This study investigated the potential of English-to-Korean machine translators (MTs) as media of interactive language learning to support Korean EFL learners' reading comprehension development. Using translation data from research articles on English passives involving NP movement, this study evaluated how well two popular MTs could translate English passive sentences into Korean. This study analyzed MTs' output in two ways: (i) whether the product's meaning was accurate, and (ii) what type of Korean passive the product was. First, it calculated rates of semantically accurate and grammatically appropriate translations, both actives and passives produced by the two MTs. Second, it calculated rates of three different types of Korean passives produced by MTs. Results demonstrated that currently available English-to-Korean MTs could produce semantically correct translations at high rates in the form of Korean passives. Active voice constructions also showed significant rates. These findings suggest that MTs have strong potential as tools for English reading pedagogy.

INTRODUCTION

This work investigates how two machine translators (MTs), Google Translator and Naver Papago, translate English passives into Korean. English and Korean use different processes to construct passive voice structures. English passive structures are complex because they require NP movement, according to transformation grammar (Aarts, 2018; Shibatani, 1985), but the process by which they are produced is rule-based and fairly straightforward. Meanwhile, Korean employs three distinct

types of passives, which have the same deep structure as the counterpart actives, which makes the process of choosing and producing them somewhat more complex. Previous research has documented that second language (L2) learners show processing difficulties when they parse structures that manifest syntactically distinct features in their first language (L1) and the target L2 (VanPatten, 2014). Because of this, many EFL learners have difficulty processing English passive voice sentences (C. E. Kim, 2022).

MTs may be a useful tool for learners to check the meaning of L2 sentences they encounter and the correctness of L2 sentences they produce, and learners may be more likely to use MTs for this purpose with complex structures such as passive voice sentences. For this reason, this study analyzes what two popular MTs produce as output when translating passive voice content to demonstrate how reliable the MTs are for teaching and learning purposes.

In the last few decades, AI technologies have become easy to implement and use in educational settings. Among the most promising abilities of AI technology for language pedagogy are word recognition and sentence production as part of natural language processing. Google Translator (GT) and Naver Papago (NP) are both MTs based on AI that can produce written and spoken outcomes. In machine-based translation systems, readers can translate sentences in a target language to their native language, and vice versa. This process can be beneficial in the learning and teaching of foreign languages. Because of the rapid development of smartphone technology, MTs now offer chargeless translation information; therefore, learners' use of MTs as a language learning medium, and specifically as a self-learning tool, seems likely to continue to increase. However, for these purposes, learners need to know how reliable MTs are. While early iterations of MTs were not accurate enough to use as educational aids, their accuracy has increased tremendously in recent years, and AI-based MTs have fast become a supplementary instrument in educational settings (C. E. Kim, 2021, 2022). MTs are designed to self-learn new words, grammar patterns, and sentence patterns for translation. Hence, the insertion of repeated phrases and sentences by users enables the MTs to learn the patterns of languages and to offer results based on computer calculations; the bigger the database, the better the translations. In currently available MT systems, huge amounts of language data have been accumulated, and users can quickly receive the translated results of their queries. This article is organized as follows. Section 2 provides an overview of passive structures in English and Korean, and discusses problematic characteristics of MTs. Section 3 reports on the present study's analyses of how the two MTs translate English. passives into Korean. Section 4 summarizes the study's findings and concludes the article.

LITERATURE REVIEW

English Passives

English has two voices, active voice and passive voice, which indicate an event denoted by a transitive verb in different ways. In the active voice, the subject of a sentence is most often the agent, who/which is the doer of some action. In the passive voice, the undergoer of the action is placed in the subject position. Thus, sentences in the different voices have different constituents in the initial position, which changes the focus of the sentence (Celce-Murcia & Larsen Freeman, 1999). The passive is preferred when the patient takes a crucial role in the situation described by the verb, and the agent is defocused (Celce-Murcia & Larsen Freeman, 1999).

In the traditional view, 'be/get+V-en' is the prototypical English passive construction. The active voice is illustrated in (1a), in which *the filthy fume* is the direct object of the verb. In the passive sentence in (1b), however, the same argument, *the filthy fume*, functions as the subject of the passive structure.

(1a) The bus emitted a filthy fume.
(1b) A filthy fume was emitted by the bus.
(1c) A filthy fume was emitted. (Aarts, 2018)

English is generally considered to have two kinds of passives. First, long passives have a *by* phrase that represents the agent, as in (1b). Second, short passives, or agentless passives, do not bear a *by* phrase referring to an agent, as in (1c). The choice between the two types is highly associated with pragmatic intentions, particularly with reference to the status of information in the discourse and to the processing burden. In regard to the former, the notion of the Given-New Contract (Cowan, 2008) explains that whether or not discourse information has been evoked in the discourse determines the position of arguments within a sentence. In regard to the latter, the Principle of End Weight (Cowan, 2008) suggests that long, complex, and heavy NPs are placed at the ends of sentences to create less processing burden. According to Granger (1983) and Siewierska (1984),

get passives from examples such as *She got lost and Let's get started* do not allow an agent; therefore, there is no option to take an active voice. In addition, get-passives reflect the speaker's stylistic and regional distribution (Huddleston, 1984; Quirk et al., 1972). Therefore, in this work, agentive passives, which are transformationally associated with active voices, will be dealt with because defining the instances of get passive was controversial.

T. Chung (2014) explains that the deep or underlying structure of a passive is not spoken or seen in real conversation; for example, the underlying structure of (1b) would be (_ was emitted a filthy fume). To satisfy the condition that English sentences require a syntactic subject, the NP in the direct object position is moved to the subject position via transformational grammar (TG). Chung indicates that the decisive aspect of passivization is to demote the argument having an agent role by using the V-ed form (Baker, 1996; Biber et al., 1999).

Because passivization in English relies on the transitivity of the verb, English allows only transitive verbs to be employed in the passive voice. According to Cowan (2008), a verb that takes direct object(s) tends to possess semantic transitivity as a lexical feature. An active clause has the constituency structure [NP1 V NP2], while the passive form is [NP2 be V-en (by NP1)]. In other words, English passives rely on affectedness conditions, because the verb needs to have an effect on its NPs (direct object, indirect object). For example, verbs such as *break* or *move* have lexical meaning such that their direct objects are affected by the action of these verbs; whereas the direct objects of verbs such as *contain* or *last* are unaffected or less affected by the verbs' actions. English also has adjectival passives, as seen in (2). Most adjectival passives take psych verbs (e.g., *surprise, interest, please, impress*) and can be employed with prepositions other than *by* (e.g., *at, in, about, with*). Adjectival passives are not considered in the present study because they do not involve actions.

(2a) John was interested in English.
(2b) English interested John.
(2c) John seemed very interested in English.

Much SLA research has analyzed aspects of the L2 teaching and learning of English passives. However, most of the previous studies have focused on L2 learners' grammatical errors in producing English passive sentences. Some research has examined whether L2 learners employ semantic and discourse information in their use of passives in writing (Mathieson, 2017). To use passives appropriately, ESL/EFL learners must understand the core meaning of passives, the pragmatic significance of passives, and the role passives play in changing the focus of sentences.

Korean Passives

The examples in (3) show a Korean active sentence (3a) and a passive counterpart (3b). Many researchers have compared Korean passives to English passives (H. W. Byun, 2017; E. Kim, K. L. Ahn, & Jung, Y., 2011; S. A. Lee, 2010; K. S. Park, 2005; J. S. Park, 2017; H. M. Sohn, 2001). Overall, these studies indicate that Korean has a variety of passive structures, and thus the process of generating passives in Korean is somewhat more complex than the process of generating English passives.

(3a) soneyn-i soney-lul miless-ta
boy-Nom girl-Acc push-Pst
'The boy pushed the girl'
(3b) soney-ka soneyn-**eykey** mil-**li**-ess-ta
girl-Nom boy-Dat(passive) push-passive-Pst.
'The girl was pushed by the boy.'

According to K. Kim (2018), because Korean prefers animate nouns for subjects, whereas inanimate subjects are perfectly acceptable in English, the passive voice in Korean has different motivations than the English passive voice. This causes many human translators to prefer the active voice over the passive voice when translating from English to Korean. J. S. Park (2017) adopted K. S. Hong's (1992) categorization of types of Korean passives and epitomized them as shown in Table 1. As the table shows, Korean has three types of passives, which are distinguished by the choice of the verbal inflection: lexical, phrasal, and adversative passives.

First, lexical passives are created by including a passivizing morpheme, *-i*, *-hi*, *-li*, or *-ki*, in the verb root, as in (4). K. S. Hong (1992) examined 1,239 (100%) Korean verbs that can be used in active voice, and found that 233 (18.8%) can be turned into lexical passives and that these are fundamental verbs. With lexical passives, passivation changes the semantic roles of the arguments. Second, phrasal passives are formed by appending *-ci*, another passivizing morpheme, to the verb root,

as in (5). In phrasal passives and their counterpart actives, arguments keep the same semantic roles (K. S. Hong, 1992; J. Tchoe, 2018). For example, (5a) and (5b) are active and passive voice sentences, in both of which *kong* is the theme and *soney* is the agent. Third, adversative passives are derived from active structures in which a noun occurs with the light verb *-hata*, as in (6). The light verb is inflected as *-tanghata*, indicating adversity, to form this type of passive. The use of the adversative passive is motivated by speakers' wish to indicate that an action or event is displeasing, whereas the ordinary passive voice (i.e., the lexical and phrasal passives) is used in order to have a theme (undergoer) be the subject. The adversative passive, also called the indirect passive, indicates an adverse effect, which means that the person/entity that is the grammatical subject is negatively affected by the action. In addition, in all three passive types, the agent argument is usually marked by *-eykey*, which typically is a dative case marker in Korean; however, in passives, *-eykey* indicates the agent of the action denoted by the verb.

TABLE 1
Three Types of Korean Passives

Type of Passive	Description
Lexical	Add *-i, -hi, -li-, -ki* to the verb root
Phrasal	Add *-ci* to the verb root
Adversative	*-hata* in active voice is inflected to *-tanghata*

(4) Lexical passive
a. Soney-ka soneyn-ul mil-ess-ta
girl-Nom boy-Acc push-Pst.-Decl.
'The girl pushed the boy.'
b. Soney-ka soneyn-eykey mil-**li**-ess-ta
girl-Nom boy-Dat push-Pass.-Pst.-Decl
'The girl was pushed by the boy.'

(5) Phrasal passive
a. Soney-ka kong-ul mak-ass-ta
girl-Nom ball-Acc block-Pst.-Decl
'The girl blocked the ball.'
b. Kong-i soney- eyuyhay y mak-**aci**-ta
ball-Nom girl-by block-Pass.-Pst.-Decl
'The ball was blocked by the girl.'

(6) Adversative passive
a. Soney-ka soneyn-ul kamkum-hass-ta
girl-Nom boy-Acc confine-did-Decl.
'The girl confined the boy.'
b. Soneyn-un soney-eyuyhay kamkum-tanghayss-ta
boy-Nom girl-by confine-Pass.-Pst.-Decl.
'The boy was confined by the girl.'

According to many scholars (e.g., S. A. Lee, 2010; E. H. Won & S. Chin, 2021), inanimate subjects are frequent in English because non-agent subjects are as permissible as agent subjects, which is not the case in Korean. Hence, in English, in contrast to Korean, producing passives involves a quite simple, rule-based process, and the primary reason to use a passive is to convey speakers' intentions.

Problems of Machine Translator

According to B. H. Seo and S. Kim (2018), translation is the process of transmission of content of one language into a different language. The concept of MTs originated in the 1950s, with 'rule-based machine translation' (RBMT) that provided results by making connections between source texts and translated data. However, RBMTs had a finite number of sources for translation and could not learn from input.

The next mechanism was statistical machine translation (SMT), in which a text corpus was built to analyze the connections between source contexts and expected outcomes. However, the SMT requires time-consuming calculations, which limits its use. Furthermore, the SMT rarely identifies specific contexts for specific structures, and therefore cannot address pragmatic functions.

Little research to date has focused on analyzing the outcomes of MTs. This study takes a step toward addressing this gap by targeting the translation of the English passive voice into Korean. The primary goal of the study is to examine how well the English passive voice is translated into Korean sentences through major MTs, and to gauge their potential for use in Korean EFL contexts. The main reason the study focuses on the passive voice is that using the passive voice appropriately requires understanding its discourse functions, and relies on a kind of pragmatic ability that can enhance L2 learners' competence.

The present work therefore examines the accuracy of two MTs' results in English-to-Korean translations of English passives. The following research questions are addressed:

(1) Do the two MTs (GT and NP) provide accurate results in English-to-Korean translations of English passives?
(2) What kinds of errors do the two MTs make when they translate English passives into Korean passives?

THE STUDY

This section describes how the data were collected, translated, and analyzed.

Data Collection

A total of 200 English passive sentences were extracted from academic papers on English passives found in the Korean Citation Index as published papers within the last 10 years. In order to have reliable data, academic papers which discussed Korean and English passives were chosen for data collection. A total of 75 journal articles in the field of an SLA, linguistics, and language processing were used for translation. A total of 200 English passive examples were used for data coding and analysis. Then, GT and NP were used to translate the sentences into Korean, and the results were categorized.

Data Analysis

Every Korean product of the two MTs' translations of the English passives was analyzed to determine: (i) whether the product's meaning is accurate; and (ii) what type of Korean passive the product is. For instance, when English passive sentence was translated through GT and NP, possible outcomes were as follows: (1) semantically and grammatically accurate passive voice; (2) semantically and grammatically accurate passive voice; (3) semantically inaccurate results; and (4) grammatically inaccurate results. Thus, while checking the outputs from two MTs, it is important to indicate whether they are semantically and (or) grammatically accurate.

As various researchers have pointed out, the ability to choose one structure among possible language patterns in order to express the same meaning is an essential characteristic of human beings (MacDonald, 2013). Like humans, the two MTs show diverse outcomes; for example, they sometimes produce both active voice and passive voice sentences to deliver the same meaning. Because the translations are diverse, the analysis of the present work focuses on the semantic appropriateness of the MTs' output.

For each MT separately, the English passives along with the MT's translations were entered into an Excel sheet for coding and analysis. To establish reliability, the translations were analyzed by a native-Korean-speaking researcher, and then rechecked by the author, also a native Korean speaker. This data checking processing can provide about the reliability of the data (Krippendorff, 2011). The translations were analyzed twice, first for meaning and grammaticality and then to categorize them into the three types of Korean passives: lexical, phrasal, and adversative.

RESULTS

Two different analyses were conducted. The first analysis concerns the distribution of active and passive voice translations produced by the MTs, and their semantic accuracy. The second analysis focuses on the proportions of the three types of

Korean passives produced by the MTs.

GT and NP were utilized to translate the 200 English passive sentences into Korean, and the results are summarized in Table 2 and Table 3. The MTs' translations of all 200 passives were analyzed to answer the first research question. The first analysis checked all translations for accurate meaning, and found that NP outperformed GT in terms of accuracy by a narrow margin. The outcomes fall into four categories: (i) semantically and grammatically accurate passive voice, (ii) semantically and grammatically accurate active voice, (iii) semantically inaccurate, and (iv) grammatically inaccurate. All 200 of GT's products fit into these categories, but NP produced eight quasi-passives, which were excluded from the analysis. Thus, the total numbers for the data analysis differ for the two MTs (200 for GT vs. 192 for NP). Table 2 shows the proportions of semantically and grammatically accurate passive structures for each MT: 48.5% for GT and 70.83% for NP. Both MTs also produced substantial amounts of semantically and grammatically accurate active voice sentences: 33.5% for GT, and 21.87% for NP. Recall that Korean active and passive voice sentences share the same deep structure. An example of a semantically accurate active voice translation from GT is shown in (7).

(7) The ball was thrown by the boy.
GT: Ku soneyn-i kong-ul tency-ess-ta
that boy-Nom ball-Acc throw-Pst.-Decl.
'The boy threw the ball.'

On the other hand, small proportions of the results (6.5% for GT and 4.68% for NP) manifested semantically inaccurate outcomes, as illustrated by (8). In a semantically accurate lexical passive Korean translation for the English sentence in (8), the verb would include the inflection *-i*, resulting in *po-i-ta.*

(8) Harry was seen at Sherry's barbecue.
GT: hayli-nun sweyli-uy papeykhyu phathi-eyse po-ass-ta
Harry-Nom Sherry-Poss barbecue party-Loc see-Pst.-Decl.
'Harry saw somthing in Sherry's barbecue party.'

In addition to semantically inaccurate sentences, as in (8), the two MTs sometimes produced Korean output that was not incorrect in itself, but was not grammatically appropriate, as indicated in (9), where GT produced a relative clause rather than a complete sentence.

(9) A desk was made by Minho.
GT: Minho-ka mantun chayksang
Minho-Nom make-RC desk
'a desk that Minho made'

GT produced inappropriate structures, many of them relative clauses as in (9), for 11.5% of its products, which is quite a lot more than NP (2.6%). This finding is determined by assuming that GT includes accumulated English data more than NP. As both English relative clauses and passive structures involve past participle form, when English passives are translated into Korean, GT has more possibilities to recognize them as relative clauses.

TABLE 2
Korean Translations of English Passives: Rate of Semantically and Grammatically Accurate Translations Produced by the Two MTs

	GT	NP
Passive voice: semantically and grammatically accurate	48.5% (97/200)	70.83% (136/192)
Active voice: semantically and grammatically accurate	33.5% (67/200)	21.87% (42/192)
Semantically inaccurate	6.5% (13/200)	4.68% (9/192)
Grammatically inaccurate	11.5% (23/200)	2.6% (5/192)
Total	100% (200/200)	100% (192/192)

All in all, the first analysis indicates that both MTs translate English passives quite well, with sentences expressing the target meaning at rates of above 80%. However, NP translated English passives into Korean passives more often than GT. Possible assumption is that NP, which has more sensitivity to types of Korean passive, provides more advanced outputs than GT.

The data for the second analysis were all of the passive voice sentences produced by the two MTs. They were categorized as the three types of Korean passives. Although NP outperformed GT in producing more Korean passives overall, both MTs produced all three types of Korean passives with semantic accuracy.

Table 3 shows the distribution of the three types of Korean passives in the translations of the English passives.

TABLE 3
Percentages of Three Types of Korean Passives

Types of passives	GT	NP
Lexical	23.71% (23/97)	21.32% (29/136)
Phrasal	20.61% (20/97)	25.73% (35/136)
Adversative	55.67% (54/97)	52.94% (72/136)
Total	100% (97/97)	100% (136/136)

As indicated in the table, over half of all passives produced by the two MTs were translated into adversative passives (55.67% for GT; 52.94% for NP). Lexical passives and phrasal passives both appear much less frequently, at similar rates of lexical passives at 23.71% for GT and 21.32% for NP, and phrasal passives at 20.61% for GT and 25.73% for NP. All the passives produced by the two MTs were grammatical, and thus the accuracy of all three types was equally good.

The following examples show sentences produced by the MTs using each type of Korean passive. First, (10) illustrates the most frequent type, adversative passives, produced by both MTs. Both use the verbal form *toy-ta* (an inflected form of the light verb *hata*), which in this case GT added to the noun *iyaki* 'story', while NP added it to the verb *hoyca* 'talk'.

(10) The scandal was talked about for days.
GT: Sukhayntul-un myechiltongan iyaki-**toy-ess**-ta.
scandal-Top several-days-for story-Adversative pass.-Pst.-Decl
NP: Ku chwumwun-un myechiltongan hoyca-toy-ess-ta.
that scandal-Top several-days-for talk-Adversative pass.-Pst.-Decl

A lexical passive produced by GT is illustrated in (11). Recall that to form lexical passives, a morpheme, *-i*, *-hi*, *-li*, or *-ki*, is added to the verb root. In (11), *-li* is attached to the verb *tul-ta* (raise) to passivize it.

(11) when my hand wasn't raised
GT: nay son-i tul-**li**-ci anh-ass-ul ttay
my hand-Nom raise-Lexical pass. not-Pst. time

For the phrasal passives, the morpheme *-ci* is added to the verb root. (12) shows a case in which both MTs produced the same phrasal passive translation, with *-ci* attached to the verb *ponay-ta* (send).

(12) She was sent to Seoul.
GT: Kunye-nun sewul-lo ponay-**ci**-ess-ta.
she-Top Seoul-Loc send-Phrasal pass.-Pst.-Decl
NP: Kunye-nun sewul-lo ponay-ci-ess-ta.
she-Top Seoul-Loc send-Phrasal pass.-Pst.-Decl

DISCUSSION AND CONCLUSION

The purpose of the present study is to examine how English passives are translated into Korean passives through two MTs, Google Translator and Naver Papago. These MTs were used to translate 200 English passives. The results were examined to calculate their rates of semantic accuracy and the rate at which the outcomes were translated into the three types of Korean

passives. The four main findings of this study are discussed below.

The first main finding is that overall, both MTs translated the English passives into semantically correct Korean passives at adequately high rates: GT at 48.5% and NP at 70.83%. However, even when they did not produce passives, the MTs mostly provided sentences with the appropriate meanings, producing semantically accurate Korean active voice structures at rates of 33.5% for GT and 21.87% for NP. When these active voice sentences are included in the count of semantically correct translations, the accuracy rates are much higher: 82% for GT and 92.7% for NP. Korean and English are cross-linguistically divergent regarding the use of active and passive voice: Korean typically prefers to make use of active types of verbs and to place the agent subject in the sentence initial position (E. H. Won & S. Chin, 2021). Therefore, when translating the English passive, the discourse context needs to be scrutinized along with grammatical function. The MTs' high rates of semantic accuracy suggest that their output is largely discourse-appropriate.

Second, the 97 passives from GT and the 136 passives from NP break down into the three types of Korean passives at the following rates: for adversative passives, 55.67% for GT, 52.94% for NP; for phrasal passives, 20.61% for GT, 25.73% for NP; and for lexical passives, 23.71% for GT, 21.32% for NP.

Third, however, the two MTs produced some inappropriate responses, such as when they produced relative clauses modifying the head noun of the English passive. NP made this error at a low rate (2.6%); however, in GT the rate was much higher (11.5%). These erroneous products translate the meaning of individual words and are related to the meaning of the English input. However, they fail to provide the full meaning. Elsewhere, C. E. Kim (2022) has shown that MTs translating Korean passives into English also erroneously produce relative clauses.

Fourth, the results from the MTs are largely similar to the outcomes of translations by humans. Human language processing selects a particular structure among diverse possible structures, and in some contexts, humans use an avoidance strategy, choosing simpler structures over more complex ones. The MTs could be said to show the same behavior; for example, the MTs in this study often preferred to translate English passives not into Korean passives but into the simpler Korean actives. Similarly, C. E. Kim (2021) shows that MTs produce subject RCs over direct object RCs when translating direct object RCs.

In sum, English passives are mostly translated by the most popular MTs into semantically appropriate translations, most of which are passives, of all three Korean passive types. The MTs also show successful active voice translations of English passives. Previous findings on MTs just focused on how MTs and human translation showed different outputs (H.W. Byun, 2017). Recent works on MTs have investigated how MTs are adopted in EFL settings (H. K. Kim & S. Han, 2021). However, above all, it should be examined whether outputs of MTs are applicable in foreign language learning and teaching. This study demonstrated strong accuracy in translation data of English passives. It can be concluded that the two MTs possess a great amount of correct information on English passive structures, which leads to surprisingly accurate outcomes. However, the two MTs still produce inappropriate patterns at times.

Overall, the results indicated that MTs have high potential to be exploited as a language learning tool, both by instructors in teaching reading, and by learners as an independent learning tool. The results of this research suggest that educators and learners can use MTs with confidence, particularly when it comes to written discourse.

The findings of previous works on the translation of passives (by humans) have concentrated on the patterns of the translated output. In contrast, the present work analyzed whether English passives are correctly translated by MTs and into what kinds of Korean structures they tend to be translated by MTs. The findings have pedagogical implications, both because teachers and learners who use MTs need to know whether they are reliable, and because the MTs provide a variety of alternative structures. For EFL learners in middle and high school, EFL teachers need to understand English passive structures and how they are translated into Korean passives. English textbooks used in courses in Korean middle and high schools generally introduce only two structures, that is, active and passive voice versions with the same meaning, and the transformation process from active to passive is the focus of instruction. Yet it is important for L2 learners to acquire and understand the varied forms and functions of passives in English and Korean. Exposure to structural differences between L1 and L2 is crucial for EFL learners' grammatical development (Celce-Murcia & Larsen-Freeman, 1999; Quirk et al., 1972; VanPatten, 2014).

This study has some limitations. First, to improve the reliability of translation data on English to Korean passives, it is crucial to notice MTs' errors and to careful repair them in plenty of translation data. Therefore, future work is necessary on whether English passives encountered in EFL reading contexts are properly translated. Additionally, future study is warranted to develop effective pedagogical methods that best exploit the abilities of MTs to teach English structures such as passives to EFL learners.

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