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TRANSLATING ENGLISH -ED REDUCED RELATIVE CLAUSES INTO INDONESIAN: CORPUS EVIDENCE AND PEDAGOGICAL IMPLICATIONS

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Abstract
The translation of reduced relative clauses from English to Indonesian is problematic because this construction exists in English but lacks a direct equivalent in Indonesian**.** This study investigates how -ed reduced relative clauses (RRCs) are realised in English and rendered into Indonesian by Google Translate, focusing on structural change, syntactic function, and modifier type. Using CQPWeb with the query "_NN +ed_VVN," we extracted 285 sentences containing -ed RRCs from the Present-day English corpus. Results show that Indonesian translations consistently re-expand English RRCs into full clauses introduced by the obligatory relativiser *yang*, regardless of syntactic position (SS, OS, iOS, OPS, CS). This re-expansion preserves the syntactic role of the head noun but sometimes shifts modifier type due to lexical or predicate differences. These findings extend prior descriptions of Indonesian relativisation with corpus-based evidence from MT output and highlight typological constraints influencing how neural MT systems handle clause reduction. From the pedagogical perspective, the results highlight the need for explicit instruction on structural differences between English and Indonesian relative clauses, particularly the non-optional use of *yang,* in EFL learning. Integrating corpus-based MT examples into teaching could help learners process texts and improve translation accuracy.

Keywords: cross-linguistic analysis, EFL pedagogy, Indonesian syntax, machine translation, reduced relative clauses

Introduction
Many non-native speakers of English find it difficult to acquire English reduced relative clauses, as there is a substantial difference in clause construction across languages (Sutrisno & Denistia, 2024). Their recent study observed that these challenges are not merely a matter of grammatical form but also of processing load, particularly when learners' first language lacks structural features that enable clause reduction. They argue that in the case of Indonesian learners, the absence of finite–non-finite verb distinction makes English reduced relative clauses doubly challenging—first as a comprehension issue in reading and listening, and second as

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a production and translation difficulty. Their findings highlight that successful acquisition requires targeted pedagogical strategies and explicit cross-linguistic comparison to bridge structural gaps.

The differences between English and learners' mother tongues, along with the complex grammatical attributes of the reduced form, are sources of difficulty for non-native English speakers (Cho & Lee, 2016; Marefat & Rahmany, 2009). For instance, Thai English learners (Phoocharoensil & Simargool, 2010) and Persian learners of English (Abdolmanafi & Rahmani, 2012) also encounter similar problems. In the context of Indonesian EFL learners, these challenges are compounded by the absence of direct structural equivalents for English reduced relative clauses, making them difficult both grammatically and in translation. Unfortunately, very little research on reduced relative clauses is available in the Indonesian context, since this topic is relatively understudied.

English relative pronouns (e.g., who, which, and that) have argument status; meaning that their presence functions to replace noun elements or noun phrases in subordinate clauses (Dalilan, 2003). In English, reduced relative clauses are not marked by relative pronouns such as "who", "which", or "that", and typically involve the omission of "be" (Frank, 1972). The replaced elements occupy the position of the subject, direct object, and indirect object or object of a preposition.

It is possible to turn a relative clause into a reduced relative clause in English, because the language allows non-finite verbs headed by past participles (Quirk & Greenbaum, 1972), as shown in the following examples.

1. a. Houses which are owned by absentee landlords will be confiscated.
   b. Houses owned by absentee landlords will be confiscated.

2. a. The police rounded up men who are known to have been in the building at that time.
   b. The police rounded up men known to have been in the building at that time.

Sentence 1.b is the reduced form of Sentence 1.a. In the reduction, the relative pronoun "which" and the word "are" are omitted. Though the relative pronoun has been reduced, the function of the non-finite "owned" remains the same as the original form "which are owned", namely modifying the subject "Houses". Similar to Sentence 1.b, Sentence 2.b is also the reduction of Sentence 2.a, with the relative pronoun "who" and be "are" dropped. The function of the reduced clause remains the same, namely as the reduced clause modifying object, "men." As the reduced relative clause has the function to modify nouns, in its realization, it can modify the subject, object, complement, or any function which the noun category can fill.

Unlike English, Indonesian does not have finite and non-finite verbs. These two essential factors are necessary for the reduction to be made possible. In the Indonesian language, there is a relative pronoun *yang*, which functions similarly to 'which' in English (Sutrisno & Denistia, 2024). However, Agustina (2009) argued that the word '*yang'* cannot fully replace English words such as "who", "which", or "that", as the word '*yang'* is not a relative pronoun; it is a ligature with no argument status. In Indonesian, where non-finite verbs and verb tenses do not exist, turning a relative clause into a reduced relative clause would not be possible. An

Indonesian relative clause is marked by the relative *yang*, which is equivalent to *which, who*, or *that*. The following are examples of relative clauses in the Indonesian language.

3.	*Kucing merah*	*yang dikejar*	*olehmu*	*itu*
	Cat red	which chase (passive)	by you	the/that

adalah kucing saya.
is cat my

The red cat which was chased by someone is my cat

4.	*Buku*	*yang ditulis*	*oleh*	*ayah saya*
	The book	which write (passive)	by	father my

laku keras.
sell hard

The book which was written by my father sells well.

In Sentence (3), the relative pronoun *yang,* which is followed by the passive verb *'dikejar',* cannot be omitted. Thus, the relative clause in the sentence cannot be changed into a reduced relative clause as in English. It holds to Sentence (4). The word '*yang',* which is followed by the passive verb '*ditulis',* cannot be omitted. It must stay in the sentence. Thus, the translation of English reduced relative clauses into Indonesian will not strictly follow the construction of such a reduced form. The construction of the reduced form will be turned to its complete form of the relative clause because there is no catalyst, such as a finite or nonfinite verb, that helps turn the entire relative clause to its reduced form.

Concerning the difference in nature between English and Indonesian relative clauses, it is essential to determine methods and materials that help analyze the construction of English reduced relative clauses and the construction of their translation in the Indonesian language. While contrastive studies of full relative clauses between English and Indonesian exist (e.g., Dalilan, 2003); Sutrisno & Denistia, 2024)), research that specifically focuses on reduced relative clauses, particularly those in the *-ed* participle form, remains scarce. This scarcity leaves a gap in linguistic description and practical guidance for translation and teaching. From a pedagogical standpoint, addressing this gap requires a contrastive analysis between English and Indonesian, as proposed in classical works on contrastive linguistics (e.g., James, 1890; Lado, 1957). Such an approach can reveal systematic differences and similarities between the two languages, allowing teachers and translators to anticipate potential areas of difficulty.

Given the identified research gap, the study addresses the following research questions: (1) What are the patterns of syntactic function in English *-ed* reduced relative clauses found in the corpus? (2) How are these clauses translated into Indonesian, and what changes in modifier type occur in the translation process?

This article aims to fill the gap in existing knowledge, enabling non-native speakers of English, especially those with Indonesian as their native language, to understand how English relative clause are reduced and how these are translated into Indonesian using Google Translate. In other words, this study seeks to describe the syntactic functions of *-ed* reduced relative clauses in English and examine how these constructions are rendered into Indonesian by Google Translate, with particular attention to syntactic function and structural form changes.

Theoretical Framework

This section provides the conceptual framework of relative clauses and their reduction, as well as related elements, such as embedded sentence. For this research, understanding the interplay between relative clauses, reduced forms, and embedded sentences is essential for two reasons: (1) it clarifies the linguistic mechanism by which reduction occurs in English but not in Indonesian, and (2) it provides a theoretical basis for analysing translation shifts when reduced relative clauses are rendered from English into Indonesian**.**

A relative clause (henceforth RC) is a type of subordinate clause that modifies a noun or a noun phrase and is typically introduced by a relative pronoun such as *who*, *which*, or *that* in English (Celce-Murcia & Larsen-Freeman, 1983; Quirk & Greenbaum, 1972). It functions adjectivally, providing additional descriptive or identifying information about the noun it modifies.

An embedded sentence refers to a clause that is syntactically placed within another clause, functioning as one of its constituents (Downing & Locke, 2006). In the case of relative clauses, the embedded sentence is structurally dependent on the main clause but retains its own subject and predicate. For example, in "The book that my father wrote is popular", the clause "that my father wrote" is an embedded sentence functioning as a postmodifier of the noun *book*.

A reduced relative clause (henceforth RRC) is a shortened form of a full relative clause in which certain grammatical elements—typically the relative pronoun and the verb *be*—are omitted without altering the core meaning or syntactic function (Frank, 1972; Master, 2002). The reduction process often involves a non-finite verb form, such as a present participle (*-ing*) or a past participle (*-ed*), as in *The article published this year* from the full form *The article that was published this year*.

In typological terms, English permits such reductions because it distinguishes between finite and non-finite verbs, whereas Indonesian does not. In Indonesian, there is no morphological marking for tense, aspect, or finiteness, and relative clauses are generally formed with the ligature *yang* (Agustina, 2009). This structural difference means that English RRCs cannot be reproduced in Indonesian without re-expanding them into full relative clauses.

The concept of "modifying X" in this study refers to the syntactic function of the head noun being modified by the RRC. Following Celce-Murcia and Larsen-Freeman (1983), these functions can include subject (S), object (O), complement (C), and object of a preposition (OP). In corpus-based analysis, identifying the modifying function is essential for determining how RRCs integrate into larger sentence structures and whether their syntactic role changes in translation.

Method

The English data was drawn from the Present-day English corpus in CQPWeb (Hardie, 2012), accessed on September 7, 2022, with the query input "_NN +ed_VVN" to retrieve sentences containing "nouns modified by -ed reduced clauses". The results were then manually verified to ensure they were constructions with an -ed participle in reduced clauses. In total, our database consisted of 285 observations of English sentences paired with their Indonesian translations. The capability of Google Translate has been proven to provide more linguistic richness than earlier algorithms, which were limited to phrase-based translation (Koehn & Knowles, 2017; Sutrisno, 2020); and more recent evaluations also confirm the improved handling of syntactic complexity in neural MT systems (Murtisari et al., 2024; Sutrisno, 2025). Therefore, we translated the data from English to Indonesian using Google Translate (https://translate.google.com, accessed on September 23, 2022).

We fed our data into the Indonesian Morphological Tagger (MorphInd) and Indonesian Part of Speech Tagger (https://github.com/andryluthfi/indonesian-postag) to run the tagging process (Larasati et al., 2011). The programs then tagged each word in the data with its part-of-speech label and grammatical role. MorphInd's overall accuracy in non-compound words is 84.6%, with a precision of 0.98, and a recall of 0.82 with the Indonesian *PE-* and *PEN-* corpus (Denistia & Baayen, 2019; Denistia et al., 2022; Denistia & Baayen, 2022). To illustrate, below is an excerpt from our dataset showing raw and tagged versions in English and Indonesian.

English sentence:
"Markey said in a statement issued by his office."

English tagged sentence:
"Markey_NP said_VVD in_II a_AT statement_NN issued_VVN by_II his_APPGE office_NN ._."

Indonesian sentence:
"Kata Markey dalam sebuah pernyataan yang dikeluarkan oleh kantornya."

Indonesian tagged sentence:
"Kata_NN_Markey_NNP_dalam_IN_sebuah_X_pernyataan_NN_yan g_SC_dikeluarkan_VB_oleh_IN_kantor_NN_nya_PRP_._Z_"

After tagging, we segmented each sentence into three parts —the context preceding the query item, the query item itself, and the context following it—so that syntactic environments could be compared across English and Indonesian versions. We used concordance for data segmentation, one of the techniques in a corpus linguistics approach. In concordance, the target word (i.e., English reduced clause and its Indonesian translation) is presented at the centre of a context of words – a format commonly known by Key Word in Context (KWIC), providing each one with its immediate before-and-after context within a text (Gries, 2006; Tribble, 2010). Table 1 presents an example of the concordance of the target words

"statement issued" and its Indonesian translation. By doing so, we can analyse a side-by-side comparison of the syntactic behaviour of the English reduced clause structure against its Indonesian equivalents.

Table 1. Example of English and Indonesian data, broken down by its context

ContextBefore	QueryItem	ContextAfter
Markey said in a	statement issued	by his office
Kata Markey dalam sebuah	*pernyataan yang dikeluarkan*	*oleh kantornya*

In this study, we collected reduced forms derived from passive constructions. For example, the sentence "The article that was published this year is interesting" would be made into a reduced clause, "The article published this year is interesting." The relative clause "that was published this year" and its reduced form "published this year" have the same function-they both postmodify the head noun "article" and together form part of the larger noun phrase functioning as the subject of the main clause. In other words, a reduced relative clause does not serve as the subject by itself, but as part of a noun phrase that may occupy subject, object, complement, or other syntactic positions.

In relativisation terms, the reduced relative clause might occur in a noun phrase functioning as the subject, object, object of a preposition, or complement. For example, when modifying a subject, the reduced relative clause is embedded within the subject NP and corresponds to the subject role in the embedded clause (SS). Similarly, when modifying an object, it is embedded within the object NP and corresponds to the subject role in the embedded clause (OS). This also applies to cases where the head noun is a complement (CS) or object of a preposition (OPS).

To make the classification more straightforward, relative clauses can be categorised into four types based on the grammatical role of the head noun in both the main and embedded clauses (Celce-Murcia & Larsen-Freeman, 1983; Cho & Lee, 2016):

1. SS means subject in both clauses. For instance, in the sentence "The man who lives next door is a doctor", "The man" is the subject in both the main and relative clauses.
2. OS means subject in the relative clause and object in the main clause. For instance, "the woman" in the sentence, "I met the woman who helped me".
3. SO means object in the relative clause and subject in the main clause. For instance, "the student" as in "The student whom the teacher praised won a prize".
4. OO means object in both clauses. For instance, "the boy" as in "I saw the boy whom she mentioned".

This classification helps identify which clause types can undergo reduction—especially in English passive constructions (e.g., *The boy mentioned yesterday*).

In addition to these four standard categories, our dataset also included occurrences that required a more fine-grained classification (Keenan & Comrie, 1977), namely Complement (CS), Indirect Object (iOS), and Object of Preposition (OPS). These labels reflect the specific syntactic functions of the head noun in both English and Indonesian sentences. For example, an -ed reduced clause may modify a head noun functioning as the indirect object (iOS), as in "the students given extra

tasks"; as a complement (CS), as in "the issue considered important"; or as the object of a preposition (OPS), as in "the section sponsored by the committee." Incorporating these categories allows us to align the theoretical framework with the actual distribution of syntactic functions observed in our corpus and to maintain consistency between the Method and Findings sections.

Manual inspection was conducted to provide the feature ModifyingX, which characterises the syntactic position modified by the -ed reduced clause. Our data showed that the -ed reduced relative clause is embedded in Subject, Object, Complement, or any other syntactic function filled with a noun category. It is consistent with Frank (1972, p. 277), a reduced relative clause or otherwise reduced adjective clause is a reduced clause that functions as an adjective whose main function is to modify a preceding noun or pronoun. Thus, when we refer to an -ed reduced relative clause "in the subject position", we mean the noun phrase containing it functions as the subject in the main clause, not that the reduced clause itself is the subject. (see Celce-Murcia & Larsen-Freeman, 1983, pp. 360–371).

The database also provides a Note column, in which we marked the changing modifier and the information from which journal the sentence was taken. The information on the changing modifier was filled with the 'TRUE/FALSE' value (TRUE if the information in the EnglishModifyingX column differs from the information in IndModifyingX; otherwise, the value would be FALSE). EnglishModifyingX consists of the modifying complement, modifying object, modifying object of a complement, modifying object of a preposition, and modifying subject. In contrast, IndModifyingX yields the modifying complement, modifying object, modifying object of a preposition, modifying object of a complement, modifying subject, modifying subject or object of a preposition.

We ran the Indonesian tagger and processed the data using R version 3.4.3 programming language in R Studio (R Core Team, 2017; R Development Core Team, 2009). The dataset generated and analyzed in this study is available online at https://osf.io/rcp6b/.

Findings and Discussion

Findings

Indonesians use '*yang'* to translate reduced relative clauses in all positions. Our corpus shows this pattern consistently across clause types—whether full or reduced and whether SS, OS, iOS, OPS, or CS. This observation is consistent with Mileh and Pidada's (2023), and Verhaar's (1986) claim that '*yang*' is an obligatory element of Indonesian relative clauses. Structurally, Indonesian does not permit the omission of a relativizer-equivalent where English allows reduction, so English reduced relative clauses (RRCs) are typically re-expanded in translation. This tendency aligns with Cilibrasi et al.'s (2019) observation that speakers of languages without explicit morphological marking for finiteness or agreement rely heavily on overt relativisation for processing complex syntax. In the Indonesian–English translation context, the obligatory *'yang*' also serves a practical role: preserving clarity, avoiding pragmatic ambiguity, and ensuring natural information flow—especially when clauses contain complex or polysemous terms.

English -ed reduced clause

Our observation of 285 sentences with reduced relative clauses reveals that 99 (34.73%) reduced forms modify head nouns functioning as the subject of the main clause (SS), 90 (31.57%) modifying head nouns functioning as the direct object OS), 56 (19.64%) modify objects of prepositions (OPS) and 14 (4.91%) modify indirect objects (iOS). In all these cases, the RRC functions as the subject of the embedded clause, mirroring the syntactic role of the head noun in the main clause. This uniformity suggests that structural position in English tends to be preserved in translation, even when morphological reduction is not possible in Indonesian.

Indonesians use '*yang'* to translate the reduced relative clauses in any position as an obligatory element in the Indonesian relative clause (Mileh & Pidada, 2023; Verhaar, 1986). Our corpus shows this pattern consistently across clause types—whether full or reduced and whether SS, OS, iOS, OPS, or CS. However, it is essential to note that SO and OO types, while part of the theoretical classification of relative clauses, did not occur in our dataset. This absence is due to the fact that -ed reduced relative clauses typically derive from passive constructions, which more readily produce SS, OS, iOS, OPS, and CS patterns rather than SO or OO. Therefore, the lack of SO and OO reflects the structural constraints of English -ed participial reduction rather than a limitation of the data.

(5)

English					
Context before	: Markey	said	in	a	
	NP	VVD	II	AT	
Query item	: statement	issued			
	NN	VVN			
Context after	: by	his	office		
	II	APPGE	NN		
Indonesian					
Context before	: *Kata*	*Markey*	*dalam*	*sebuah*	
	NN	NNP	IN	X	
Query item	: *pernyataan*	*yang*	*dikeluarkan*		
	NN	SC	VB		
Context after	: *oleh*	*kantornya*			
	IN	NN	PRP		

In Sentence (5), the -ed reduced clause "statement issued" is categorized as OPS because of its position as the object of the preposition "in". This can be seen in the following context breakdown. In the tagged query-item, which is the focus of our discussion, we observe the construction of NN + VVN, which is the linguistic annotation for "statement issued". The presence of VVN means that the word "issued" is non-finite. There is no relation between the subject, verb, tense, or number as in a finite verb. The finite regular verb for the past tense is symbolized with VVD as in the word "said" in the context-before.

Following our framework, the term "reduced relative clause" refers to the participial construction together with its head noun, allowing us to treat "statement issued" or "section sponsored" as reduced forms directly comparable to Indonesian translations, which often restructure NP boundaries while retaining the same modifier relationship. The English reduced relative clause is translated into '*pernyataan yang dikeluarkan*', and we observe the annotation of the translated version in Indonesian, namely NN SC and VB. Including the NP head in our analysis also reflects the translation outcome, where, for example, "section" is rendered as '*pendidikan'*, forming a new NP with '*khusus*' and the relative clause '*yang disponsori'*. This shift in NP composition is discussed as part of the translation process rather than a grammatical reanalysis. The presence of the relative '*yang*', annotated as SC, cannot be omitted. If it is dropped, the grammatical structure becomes unacceptable. Hence, the reduction is not enabled.

(6)
English
Context before : A special educational
AT JJ JJ

Query item : section sponsored
NN VVN

Context after :
by the anti-defamation league also will be included in the..
II AT NN NN RR VM VB VVN II AT..

Indonesian
Context before : *Bagian*
NN

Query item : *pendidikan khusus yang disponsori*
NN JJ SC VB

Context after *:*
oleh liga anti-pencemaran nama baik juga akan disertakan dalam..
IN NNP NNP NNP NNP RB IN X IN

In Sentence (6), the reduced clause, namely "section sponsored", acts as the subject of the embedded sentence. "Section sponsored" derives from 'section which was sponsored'. Following the analytical framework outlined in the Theoretical Framework section, the term "reduced relative clause*"* here includes both the participial phrase and its head noun (cf. Frank, 1972; Master, 2002). While some authors define reduced adjective clauses as consisting only of the participial phrase, including the head noun enables a direct, structure-to-structure comparison with Indonesian equivalents, which often reorganize NP boundaries. In the source language, the headword of the reduced clause is 'section'. In contrast, in the translated version, the headword is '*pendidikan*' (education), not '*bagian*'(section), which functions as number marking (Sneddon et al., 2010).

In our analysis, headword refers to the central noun within the NP that determines agreement and modification (cf. Quirk et al., 1985), not merely the output of corpus parsing. This shift from "section" to *pendidikan* reflects a translation choice that restructures the NP while preserving the overall modifier relationship: the Indonesian adjective phrase "*yang disponsori"* still modifies the entire NP, albeit in a different internal order**.** The current neural MT output reflects this reorganization because the GNMT model does not rely on phrase-based parsing (Koehn & Knowles, 2017) but uses context-sensitive alignment through hidden layers. Consequently, the grammatical function of the adjective phrase remains equivalent across languages, while the NP's lexical head and internal order change due to translation norms in Indonesian.

The change in the headword as the focal point of the reduced relative clause from "section" in the source language to '*pendidikan*' in the target language is acceptable. In this instance, the words '*bagian*' (section) and '*pendidikan*' (education) form a coinage '*bagian pendidikan*', clearly showing which section is being discussed. When the headword is modified by the relative pronoun '*yang*', it opens a clause construction. Later, the word *'yang'* cannot be omitted when a relative clause is formed. The omission of the word '*yang*' will result in a different grammatical construction. This again reflects the processing principles noted by Cilibrasi et al. (2019), where explicit relativisation facilitates parsing when the head noun's identity is altered or restructured in translation.

Sentences (5) and (6) show evidence that the reduced relative clause in both sentences acts as the subject of the embedded sentence, which is identical to the syntactic function of its headword. In sentence one, the syntactic function of the headword is the Object of the Preposition. Therefore, the reduced clause is the subject of the embedded sentence, which is identical to the Object of the Preposition of the main clause. In sentence (6), the syntactic function of the headword is the Subject. Hence, the reduced clause is the subject of the embedded sentence, which is identical to the subject of the main clause. The reason is that English, as the source language, has finite and non-finite verbs. It also has tenses and numbers, making it possible for finite verbs to turn into non-finite verbs. Conversely, the Indonesian language does not have tenses and numbers, making it impossible to turn the relative clause into a reduced relative clause. In this situation, the Indonesian language uses the relative pronoun '*yang'* to form its relative clause. This supports Vincent et al.'s (2022) cross-linguistic finding that extraction and dependency relations in relative clauses are constrained differently across languages, shaping the morphosyntactic strategies available in translation.

Changing modifier in the -ed reduced clause's translation

Based on our observation of 285 pieces of data, as shown in Figure 1, both English-reduced clauses and Indonesian translations modify parts of the sentences with almost similar frequency. A chi-square test indicates that the ratios of modifying X for both English and Indonesian are proportional ($\chi^2_{(4)} = 0.46, p > 0.1$). This statistical similarity suggests that syntactic roles are largely preserved while morphological reduction is lost in translation. Indonesian, however, is more varied in its modifiers because certain combinations, such as subject/object of preposition

or object/complement, occur with equal frequency, reflecting Indonesian's more flexible predicate structure.

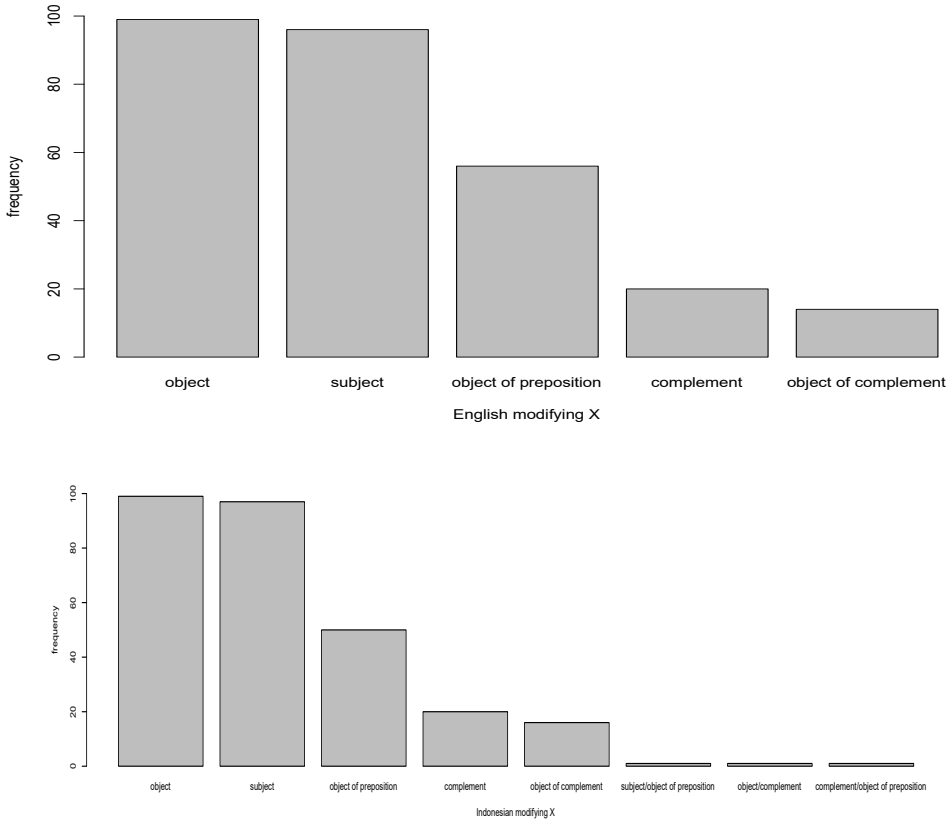


Figure 1. Comparison of modifying X function for reduced clause (upper panel) and its Indonesian translation (lower panel)

Our data also show the changing modifier from the source to the target language when constructing the relative clauses in the translated version. There are 96 SS in English and 97 SS in the translated version, meaning 1 (0.3%) change from SS to another syntactic function. In addition, we found 56 OPS in the source language and 50 OPS in the target language, or 6 (2.1%) changes found; 14 iOS in the source language and 16 in the target language, indicating 2 (0.7%) changes found. Other syntactic functions like OS and CS share the same construction. Such small shifts suggest that the core syntactic mapping remains stable, though lexical or structural adjustments in translation can cause minor reassignments. Examples of the change of the modifier can be seen in Table 2.

Table 2. Sentence sample[1] that contains a change of modifying X in an -ed reduced clause and its Indonesian translation

English -ed clause	Indonesian translation	Changing modifier
I 've been awake but simply lacking awareness of *this mega-project spearheaded by North America 's SuperCorridor Coalition.*	*Saya sudah bangun tetapi hanya kurang menyadari mega-proyek ini yang dipelopori oleh SuperCorridor Coalition.*	(OPS to OS)

English -ed clause	Indonesian translation	Changing modifier
I am a progressive, *African American academic committed to battling racial inequality.*	*Saya seorang akademisi Afrika-Amerika progresif yang berkomitmen untuk memerangi ketidaksetaraan rasial.*	(CS to SS)
The wicked Queen has *a black crow-like bird perched on a human skull*.	*Ratu yang jahat memiliki seekor burung hitam seperti burung gagak yang bertengger di atas tengkorak manusia.*	(OS to CS)

[1] We acknowledge that the above GT output sounds less natural compared to a more idiomatic rendering (e.g., "*kurang menyadari mega proyek yang dipelopori oleh SCC ini*"). However, this translation is reproduced verbatim from Google Translate to maintain the authenticity of the dataset and to allow syntactic analysis of the reduced relative clause. Our study does not involve post-editing for fluency, and such instances are retained as part of the empirical evidence.

The relative clause in the original sentence is in the position of the Object of the Preposition (cf. Table 2, row 1). It acts as the subject embedded in the sentence, which is identical to the object of the preposition of the main clause. In the translated version, the relative clause is in the position of an object, meaning that the relative clause acts as the subject embedded in the sentence, which is identical to the object of the main clause. This change results from a lexical category shift: the English noun "awareness" (requiring the preposition "of") becomes the verb '*menyadari'* in Indonesian, which directly takes an object.

Another example of the modifier change can be seen in Table 2 (row 2). In the source language, the relative clause is in the position of the Object of the Complement. Meanwhile, in the translation version, the relative clause is in the subject's position. This can be explained by the fact that every sentence in English must have a verb, while in the Indonesian language, it is not a must, meaning that a verb can be absent in an Indonesian sentence. For example, "She beautiful" is ungrammatical in English, but *'Dia cantik'* is grammatical in Indonesian due to the absence of a copula requirement.

The S-form reduction in the source language (cf. Table 2, row 3), "a black crow-like bird perched", is in the position of OS. It stands after the verb "has". In translation, *'burung gagak yang bertengger'* is preceded by *'seperti'* (like), shifting the syntactic role from OS in English to CS in Indonesian.

Discussion

Translating English reduced relative clauses into Indonesian is difficult due to the lack of a direct equivalent construction. This study analysed how Google Translate renders English -ed reduced relative clauses into Indonesian, focusing on their structure and function. Using a corpus of 285 English sentences, the translations were produced by Google Translate and syntactically tagged for analysis.

The primary objective of this study was to investigate the Indonesian translation structure of English reduced clauses with the -ed form. We did this by analysing the occurrences of -ed relative clauses and observing the Indonesian translation. Our investigation revealed that -ed relative clauses are commonly employed as subject and object clauses. The position of nouns as subjects and objects in many sentences is explained by relative clauses, which operate as noun

modifiers, and aligns with the research conducted by Cho and Lee (2016) and Master (2002).

Generally, we found notable differences between our findings on OS and SS versus those reported by Cho and Lee (2016). They reported OS as much higher than SS, whereas our results showed 34.73% SS and 31.57% OS. This difference arises because our study follows Master's (2002) category, where objects, namely OPS and iOS, are counted separately. Otherwise, when combined, object related clauses reaches 56.12%, exceeding SS.

The English -ed reduced clauses undergo some changes when translated into Indonesian. The changing modifier in the translated version occurs due to cross-linguistic syntactic differences, particularly in predicate structure and realisation. In Indonesian syntax, there are no finite and non-finite verbs. Our data provides further evidence that the use of *'yang'* is necessary as a grammatical anchor to maintain clause–head cohesion and ensure clarity in the absence of morphological reduction, as stated by Verhaar (1986). These outcomes are also consistent with Cilibrasi et al. (2019)'s findings that languages without inflectional morphology for tense and agreement rely more heavily on explicit relativisation cues when processing complex syntax. In the case of Indonesian, such cues appear essential when the head noun is restructured or when NP boundaries change, as they help maintain clause–head cohesion. Moreover, our findings resonate with Vincent et al. (2022), who show that cross-linguistic similarities in the environments that facilitate extraction are constrained by language-specific morphosyntax. In Indonesian, the lack of finite/non-finite contrasts and verbal inflection prevents the kind of reduction possible in English, making *yang*-marked clauses the default strategy.

In the case of the number of each relative clause type, which undergoes some changes in the translated version, especially in SS, OPS, and iOS, several linguistic factors may explain these patterns. First, both languages have the same Subject+Verb+Object construction in their sentences. However, English and Indonesian are different in terms of predicates. In English, a predicate must be a verb. By contrast, the Indonesian language allows a predicate from any word category, whether a verb, noun, nominal phrase, number, or prepositional phrase (Ramlan, 1985, p. 105). Thus, in a nominal sentence like "She is beautiful", the construction of the English sentence is formed of Pronoun+linking Verb+Adjective. In contrast, in Indonesian, the sentence will read '*Dia cantik'* or "She beautiful" without a linking verb. Second, the word *yang* in the Indonesian language is similar to the English relative pronouns 'that', 'which', and 'who', but at the same time, it can also be a connective ligature. As a relative pronoun, the presence of 'yang' is obligatory, but as a connective ligature, the presence of *'yang'* is optional (Mileh & Pidada, 2023). Sometimes, in standing phrases of high phrasal compactness, relativizing *'yang'* can be omitted, too (Verhaar, 1986). Third, there is no such conjugation in Indonesian as in English. The Indonesian language does not have tenses, nor such agreement of subject and verb, subject and numbers (singular/plural). Finite and non-finite verbs do not exist in Indonesian syntax. These differences affect the translation of relative clauses from English to Indonesian. From a processing perspective, these factors align with Cilibrasi et al.'s (2019) and Vincent et al.'s (2022) findings that typological constraints on dependency relations directly shape how MT systems render RRCs, making '*yang*'-marked clauses the default translation strategy.

Furthermore, our findings highlight the importance of explicitly teaching the structural differences between English reduced clauses and their Indonesian equivalents, particularly the obligatory use of "*yang,"* at early and intermediate levels of EFL learning. From a pedagogical perspective, teachers should prioritise raising learners' awareness of how English reduction strategies operate and how these differ from Indonesian syntax, to help them process authentic texts efficiently and avoid misinterpretations. Integrating corpus-based examples into instruction could also familiarize learners with authentic usage patterns, bridging the gap between classroom input and real-world reading or translation tasks.

Conclusion

This study investigates the challenges of translating English -ed reduced relative clauses into Indonesian, a language lacking a direct equivalent, by analysing Google Translate outputs from a corpus of 285 sentences. The findings confirm that these clauses are predominantly expanded into full, *yang*-marked relative clauses in Indonesian. Indonesian uses some strategies to maintain clause-head cohesion due to the language's absence of finite/non-finite verb distinctions. Our findings on English-Indonesian typological differences have implications for translation. In machine translation contexts, such as with Google Translate, the absence of structural equivalence for English reduced relative clauses in Indonesian often results in the expansion of reduced forms into full relative clauses. This process not only alters syntactic compactness but may also influence information flow and textual cohesion. Therefore, understanding these differences is essential for applied linguistics and translation studies, providing insights into cross-linguistic processing and potential strategies for rendering English-reduced relative clauses into natural Indonesian. To add value, our study's contribution lies in linking corpus-based evidence with practical teaching implications, thereby enabling language educators to incorporate explicit instruction and targeted exercises on reduced relative clauses into their curriculum.

While this study has provided corpus-based evidence for practical implications for machine translation post-editing and EFL pedagogy, its limitation lies in its reliance on a written corpus, which may not capture the full spectrum of usage across all genres or spoken language. Consequently, future research should expand the dataset to include diverse textual genres and spoken corpora and employ experimental methods to test comprehension.

Glossary

English annotation	
APPGE	possessive pronoun
AT	article
II	general preposition
JJ	general adjective
NN	common noun
NP	proper noun
RR	general adverb
VB	be, base form
VM	modal auxiliary
VVD	past tense of lexical verb
VVN	past participle of lexical verb

Indonesian annotation	
IN	preposition
JJ	adjective
NN	noun
NNP	proper noun
PRP	preposition
RB	adverb
SC	subordinating conjunction
VB	verb
X	unknown

References

Abdolmanafi, S., & Rahmani, Z. (2012). An investigation of the learnability of relative clauses by EFL learners. *World Journal of English Language*, *2*(3), 29–37. http://dx.doi.org/10.5430/wjel.v2n3p29

Abu-El-Haija, S., Kothari, N., Lee, J., Natsev, P., Toderici, G., Varadarajan, B., & Vijayanarasimhan, S. (2016). YouTube-8M: A large-scale video classification benchmark. *CoRR*, *abs/1609.08675*. https://doi.org/10.48550/arXiv.1609.08675

Agustina. (2009). *Klausa relatif: Perspektif baru dalam gramatika deskriptif Bahasa Indonesia* [Relative clauses: A new perspective in descriptive grammar of Indonesian]. Pustaka Reka Cipta.

Celce-Murcia, M., & Larsen-Freeman, D. (1983). *The grammar book: An ESL/EFL teacher's course.* Heinle and Heinle.

Cho, D. W., & Lee, K. (2016). English relative clauses in science and engineering journal papers: A comparative corpus-based study for pedagogical purposes. *Ampersand*, *3*, 61–70. https://doi.org/10.1016/j.amper.2016.03.002

Cilibrasi, L., Adani, F., & Tsimpli, I. (2019). Reading as a predictor of complex syntax. The case of relative clauses. *Frontiers in Psychology*, *10*, Article 1450. https://doi.org/10.3389/fpsyg.2019.01450

Dalilan. (2003). *Klausa relatif Bahasa Inggris dan Bahasa Indonesia: Analisis kontrastif strategi perelatifan, fungsi, dan karakteristik alat perelatif* [Relative clauses in English and Indonesian: A contrastive analysis of relativization strategies, functions, and characteristics of relativization devices.]. Universitas Gadjah Mada.

Denistia, K., & Baayen, H. (2019). The Indonesian prefixes PE- and PEN-: A study in productivity and allomorphy. *Morphology*, *29*(3), 384–407. https://doi.org/10.1007/s11525-019-09340-7

Denistia, K., & Baayen, H. (2022). The morphology of Indonesian: Data and quantitative modeling. In C. Shei & S. Li (Eds.), *The Routledge handbook of Asian linguistics* (pp. 605–634). Routledge. https://doi.org/10.4324/9781003090205

Denistia, K., Shafaei-Bajestan, E., & Baayen, H. (2022). Exploring semantic differences between the Indonesian prefixes PE- and PEN- using a vector space model. *Corpus Linguistics and Linguistic Theory*, *18*(3), 573–598. https://doi.org/10.1515/cllt-2020-0023

Deveci, T., & Nunn, R. (2018). Use of relative clauses in humanities and social sciences research articles: A case study. *Linguistics and Literature Studies*, *6*(1), 17–26. http://dx.doi.org/10.13189/lls.2018.060103

Downing, A., & Locke, P. (2006). *English grammar: A university course* (2nd ed). Routledge.

Frank, M. (1972). *Modern English: A practical reference guide*. Prentice-Hall. Inc.

Gries, S. Th. (2006). Cognitive determinants of subtractive word-formation processes: A corpus-based perspective. *Cognitive Linguistics*, *17*(4), 535-558. http://dx.doi.org/10.1515/COG.2006.017

Hardie, A. (2012). CQPweb - Combining power, flexibility and usability in a corpus analysis tool. *International Journal of Corpus Linguistics*, *17*(3), 380–409.

James, W. (1890). *The principles of psychology*. Dover Publications.

Keenan, E. L., & Comrie, B. (1977). Noun phrase accessibility and universal grammar. *Linguistic Inquiry*, *8*(1), 63–99.

Koehn, P., & Knowles, R. (2017). Six challenges for neural machine translation. *Proceedings of the First Workshop on Neural Machine Translation*, 28–39, Vancouver. Association for Computational Linguistics. https://doi.org/10.18653/v1/W17-3204

Lado, R. (1957). *Linguistics across cultures: Applied linguistics for language teachers*. University of Michigan Press.

Larasati, S.D., Kuboň, V., & Zeman, D. (2011). Indonesian Morphology Tool (MorphInd): Towards an Indonesian Corpus. In C. Mahlow & M. Piotrowski (Eds.), *Systems and frameworks for computational morphology (SFCM 2011). Communications in Computer and Information Science, vol 100* (pp. 119-129). Springer. https://doi.org/10.1007/978-3-642-23138-4_8

Marefat, H., & Rahmany, R. (2009). Acquisition of English relative clauses by Persian EFL learners. *Journal of Language and Linguistics Study*, *5*(2), 21-48.

Master, P. (2002). Relative clause reduction in technical research articles. In E. Hinkel & S. Fotos (Eds.), *New perspectives on grammar teaching in second language classrooms* (pp. 201–231). Lawrence Erlbaum.

Mileh, I. N., & Pidada, I. B. A. (2023). Yang dalam bahasa Indonesia ["Yang" in Indonesian]. *KULTURISTIK: Jurnal Bahasa dan Budaya*, *7*(1), 10-17.

Murtisari, E. T., Kristianto, A. K., & Bonar, G. (2024). Self-directed use of machine translation among language learners: Does it lead to disruptive L2 avoidance? *Foreign Language Annals*, *57*(4), 1094–1114. https://doi.org/10.1111/flan.12768

Phoocharoensil, S., & Simargool, N. (2010). English relativization and learners' problems. *Pan-Pacific Association of Applied Linguistics*, *14*(1), 109–129.

Quirk, R., & Greenbaum. (1972). *A grammar of contemporary English*. Longman.

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language*. Longman.

R Core Team. (2017). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org

R Development Core Team. (2009). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. http://www.R-project.org

Ramlan, M. (1985). *Morfologi: Suatu tinjuan deskriptif* [Morphology: A descriptive review]. CV Karyono.

Sneddon, J. N., Adelaar, A., Djenar, D. N., & Ewing, M. C. (2010). *Indonesian: A comprehensive grammar* (2nd ed). Routledge.

Sutrisno, A. (2020). The accuracy and shortcomings of google translate translating English sentences to Indonesian. *Education Quarterly Reviews*, *3*(4), 555–568. https://doi.org/10.31014/aior.1993.03.04.161

Sutrisno, A. (2025). Inter-sentential translation and language perspective in neural machine translation: Insights from ChatGPT as a tansformer-based model. *Asia Pacific Translation and Intercultural Studies*, *12*(1), 81–94. https://doi.org/10.1080/23306343.2025.2485609

Sutrisno, A., & Denistia, K. (2024). The use of English relative clauses by Indonesian authors: A case study in business, engineering, and science journal articles. *Journal of Language and Literature*, *24*(2), 510–522. https://doi.org/10.24071/joll.v24i2.9097

Tribble, C. (2010). What are concordances and how are they used? In A. O'Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 167–183). Routledge.

Tse, P., & Hyland, K. (2010). Claiming a territory: Relative clauses in journal descriptions. *Journal of Pragmatics*, *42*, 1880–1889. https://doi.org/10.1016/j.pragma.2009.12.025

Verhaar, J. W. M. (1986). *Pengantar linguistik* [Introduction to linguistics]. Gadjah Mada University Press.

Vincent, J. W., Sichel, I., & Wagers, M. W. (2022). Extraction from English RCs and cross-linguistic similarities in the environments that facilitate extraction. *Languages*, *7*(2), Article 117. https://doi.org/10.3390/languages7020117

Wiechmann, D. (2015). *Understanding relative clauses: A usage-based view on the processing of complex constructions*. De Gruyter.