

Processing of Ambiguous Sentences Among Kolibugan English Learners: A Cross-Linguistic Perspective

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Abstract

Resolving sentence ambiguity demands precision thus, this study examines the sentence processing strategies of Kolibugan secondary learners when interpreting syntactically ambiguous English sentences involving relative clause attachments. Employing a sequential explanatory design, 56 participants were grouped by English proficiency and assessed through comprehension tasks and follow-up interviews. Quantitative results show a consistent low attachment (LA) preference across groups, with stronger LA bias among low-proficiency learners. Qualitative findings indicate that learners heavily relied on L1-based strategies, including direct translation, linear parsing, and syntactic restructuring grounded in Kolibugan grammar. These outcomes align with the Garden Path Model and Shallow Structure Hypothesis illustrates the influence of L1 transfer and limited syntactic access in L2 processing. The study further emphasizes the adaptive nature of parsing behavior shaped by cognitive constraints, proficiency level, and language exposure. Recommendations include integrating metalinguistic awareness and comparative grammar approaches in English instruction. Furthermore, pedagogical implications stress the need for explicit syntactic awareness instruction and culturally responsive approaches tailored to underrepresented linguistic communities.

Keywords:

sentence parsing, syntactic ambiguity, Kolibugan, garden-path, shallow hypothesis

1 Introduction

The way second language (L2) learners make sense of syntactic ambiguity reveals more than just their grasp of grammar, it reflects the significance of parsing – the cognitive process of analyzing sentence structure. Parsing plays a critical role in disambiguating meaning through syntactic, lexical, and cognitive cues. In L2 acquisition, parsing becomes even more complex, as learners often draw on their first language (L1) processing strategies to interpret

ambiguous constructions in the target language (Juffs & Harrington, 1995).

One key area where this is evident is in syntactic attachment preferences. For instance, native speakers of English parse ambiguous construction by relying on syntactic structures. They tend to use automatic, structure-based strategies developed through extensive exposure allowing them to resolve ambiguity with ease. In contrast, non-native speakers often depend more on lexical or semantic cues such as word meaning or context. This approach frequently leads to misinterpretation of sentences with complex structures (Cuetos & Mitchell, 1988). These cross-linguistic differences, widely documented across major languages, underscore the effect of first language transfer in shaping L2 parsing behavior (Dussias, 2003). Despite these findings, most existing research remains limited to widely spoken languages such as Spanish, German, Chinese, and Japanese, leaving a substantial gap in our understanding of how learners from indigenous or typologically distinct L1 backgrounds process structural ambiguity in English (Yeh, 2011; Xu, 2024, Deng, et al., 2024).

The Philippines presents a particularly diverse linguistic landscape, yet research on syntactic processing in indigenous communities also remains scarce. Most Philippine-based SLA studies focus on major languages like Tagalog, Cebuano, and Ilocano, overlooking minority ethnolinguistic groups like Manobo, Surigaonon, Hinagaon ang Kolibugan (Suganob & Bacus, 2023). This gap results in a lack of inclusive data on how indigenous learners process English syntax. This is especially problematic given the country's poor English performance in global assessments. In the 2018 PISA, the Philippines ranked among the lowest in reading literacy, with over 80% of students failing to meet minimum proficiency (OECD, 2019). These statistics highlight systemic reading difficulties, which may be even more pronounced among marginalized learners like the Kolibugan, an indigenous group in Zamboanga Peninsula.

The Kolibugan people represent a culturally and linguistically distinct subgroup within the broader Sama ethnolinguistic cluster. Linguistically, the Kolibugan language exhibits significant divergence from both Standard Sama and the dominant regional languages such as Cebuano, Tausug, and Chavacano. It incorporates unique lexical items, phonological patterns, and grammatical features that set it apart, making it less mutually intelligible even with closely related Sama dialects (Lobel, 2013). This linguistic uniqueness contributes to challenges in both interethnic communication and formal education, especially in classrooms where instruction is delivered in English or Filipino—languages often unfamiliar to Kolibugan learners at home. Consequently, Kolibugan students frequently encounter barriers in literacy and comprehension due to limited exposure to the instructional language, highlighting the need for more inclusive and culturally responsive language policies in Philippine education (Tupas & Martin, 2017).

In Sirawai National High School (SNHS), results from the Philippine Informal Reading Inventory (Phil-IRI) Screening Test showed that 98.54% of Kolibugan junior high school students scored below grade-level expectations, wherein half of this traces to Grades 9 and 10 (SNHS, 2025). This test results indicate persistent literacy gap among Kolibugan learners at the upper secondary level and suggest that many of them struggle with fundamental reading comprehension skills. As outlined in Piaget's cognitive development theory, adolescents (around ages 14-16) begin to engage in formal operational thinking and are expected to demonstrate increased capacity for abstract thinking (Inhelder & Piaget, 1958). Similarly,

Cummins (1981) argued that learners in this stage are typically developing language skills needed for success called Cognitive Academic Language Proficiency (CALP). However, this was not the case among Kolibugan learners in SNHS. The aforementioned results clearly reveal a cognitive-linguistic disconnect, where students' cognitive potential is not translating into academic performance due to limited proficiency in the language of instruction. This gap highlights an urgent need for culturally and linguistically responsive interventions that bridge students' home language practices with academic literacy demands for an equitable access to learning.

Given these circumstances, this study seeks to examine how Kolibugan English learners process syntactically ambiguous sentences involving relative clause attachments. This also seeks to examine the extent to which L1 syntactic structures influence ambiguity resolution strategies in English and how these strategies vary according to learners' proficiency levels. In doing so, the study explores how cross-linguistic transfer operates in the sentence processing of learners whose first language diverges structurally from English.

Moreover, the findings of this study not only reinforce existing theories regarding L1 transfer and developmental processing in SLA, but also extend them by incorporating data from a linguistically marginalized group. By focusing on Kolibugan learners whose linguistic background is rarely represented in SLA literature, this research contributes to build a more inclusive and context-responsive understanding of L2 sentence processing. Importantly, the study provides actionable insights for educators working in multilingual and indigenous contexts, highlighting the importance of pedagogical strategies that address both structural and experiential aspects of learning English grammar.

Specifically, this study sought to address the following questions:

1. How do Kolibugan secondary learners with varying English proficiency levels differ in their interpretation of ambiguous English sentences?
2. Does proficiency level in English affect the ability of Kolibugan learners to accurately interpret syntactically ambiguous sentences?
3. To what extent do Kolibugan learners rely on L1-based interpretation strategies when processing syntactically ambiguous English sentences

1. 1 Theoretical Considerations

The present study adopts a multi-theoretical framework from psycholinguistics and second language acquisition, particularly those related to sentence processing and cross-linguistic influence.

First is the Garden Path Theory (Frazier & Rayner, 1982), which assumes that when we first hear or read a sentence, specifically ambiguous ones, our brain automatically chooses the simplest grammatical structure, without considering the broader or the context in general. This model operates based on parsing principles such as minimal attachment – prioritizes the

simplest possible syntactic structure, and late closure – attaches new constituents to the most recent phrase.

Aligned with the late closure strategy is the Recency parsing principle. In this concept, the parser tends to link new information to the most recent processed input, if grammatically possible.

1. *“They interviewed the brother of the doctor who moved to Canada.”*

The above sentence is ambiguous or confusing because the relative clause *“who moved to Canada”* can refer either to the first noun phrase (NP1), *“the brother”* or to the noun phrase attachment (NP2), who is *“the doctor”*.

According to Recency principle, the parser is most likely to attach the relative clause to the most recently processed noun phrase, which is the NP2. This results in the interpretation that *“it was the doctor who moved to Canada”*. Speakers of English, Romanian, Norwegian, Swedish, and Brazilian Portuguese prefer low attachment (LA) or attaching the relative clause to the NP2, reflecting the tendency to minimize cognitive overload (Darzhinova, et al., 2024).

On the other hand, some languages and English language learners prefer NP1 disambiguation called the interacting locality principle of Predicate proximity. This principle favors attachments that maintain closeness with the verb phrase (head of the predicate), rather than simply attaching to the most recent information or last noun mentioned. Native speakers of Russian, French, Spanish, German, Dutch, and Greek show a high-attachment preference (HA) or NP1 preference in parsing ambiguous relative clause attachments (Darzhinova, et al., 2024).

Looking back at example 1, *“interviewed the brother”* is the core verb phrase. Thus, in predicate proximity, the parser typically attaches the relative clause *“who moved to Canada”* to *“the brother”* (NP1) because this noun is part of the predicate head, *“interviewed”*. Despite *“the doctor”* being linearly closer to the relative clause, predicate proximity emphasizes structural relationships over surface-level proximity. Hence, interpretation would be *“it was the brother who moved to Canada”*.

Next, the Shallow structure hypothesis of Clahsen & Felser (2006) posits that learners, specifically those with lower English language proficiency, tend to construct shallower syntactic representations while processing sentences. They draw more heavily on word order, lexical or semantic cues and heuristic guessing strategies to construe sentence meaning. Hence L2 learners are more prone to misinterpretation, specifically those syntactically ambiguous sentences involving relative clauses and prepositional phrase attachments.

2. *“The principal congratulated the teacher of the student who wrote the report.”*

Some studies revealed that proficiency level holds significant importance in how learners resolve sentence ambiguity (Cheng, et al., 2021; Soares, et al., 2019). Lower-proficiency L2 learners may attach the relative clause *“who wrote the report”* to the more semantically salient noun (NP2) *“the student”* rather than considering the syntactic possibility that it could modify *“the teacher”*. This reliance on semantic plausibility illustrates learners’ preference for surface-level processing and linear interpretations (Clahsen & Felser, 2006a).

On the other hand, those with higher proficiency levels are more sensitive to syntactic constraints thus, capable of constructing deeper syntactic representations. So, in the above example, higher proficiency learners are more likely to consider possible attachments, “*the teacher*” (NP1) and “*the student*” (NP2) sites for the relative clause “*who wrote the report*” and use syntactic cues to determine the most grammatically appropriate interpretation. Hence, allowing for more accurate understanding of the sentence structure and meaning.

Lastly is the Cross-linguistic influence (CLI) (Odlin, 1989) in parsing. This refers to the influence of learners’ L1 on the mental process by which they analyze syntactic structure to derive meaning. In sentence processing, CLI highlights the dynamic interaction between existing linguistic knowledge and cognitive parsing mechanisms (Vasilyeva, et al., 2009; Schwieter, 2011). This interaction becomes especially salient when learners are confronted with syntactic ambiguities, such as relative clause attachment. Studies have shown that the parsing strategies learners adopt in L2 are often shaped by structural preferences established in their L1.

A number of factors mediate the extent and direction of CLI, including L2 proficiency, typological proximity between 1st and 2nd languages, and the amount and quality of language exposure (Jarvis & Pavlenko, 2008). For instance, highly proficient L2 speakers are more likely to develop parsing strategies that resemble those of native speakers, thereby reducing L1 interference (Cunnings, 2017). In contrast, lower-proficiency learners often default to L1-based processing routines, particularly in the absence of strong syntactic cues in the L2.

One prominent area where CLI is evident is in relative clause attachment preferences. In languages such as Spanish, French, and Russian, relative clauses tend to attach to the first noun phrase (NP1) in a complex noun phrase, reflecting a high attachment (HA) preference (Hemforth, 2015; Dussias, 2003). Speakers of these languages, when processing similar ambiguous structures in English, often transfer their L1 parsing preferences, leading to interpretations that favor NP1 attachment, despite English speakers typically showing a low attachment (LA) bias. This syntactic transfer can result in processing difficulties or misinterpretation when the L2 input does not align with the L1-based expectations.

Through these multi-theoretical perspectives, the study seeks to provide nuanced understanding of how Kolibugan learners resolve syntactic ambiguities and how their L1 shapes L2 processing. This framework not only allows for empirical exploration of parsing behavior but also informs pedagogical approaches aimed in improving syntactic awareness to reduce misinterpretation in L2 reading comprehension and grammar instruction among these underrepresented group, the Kolibugan.

2 Methodology

A sequential explanatory design was employed for this study to enable a robust and comprehensive analysis, integrating quantitative data on measurable differences in sentence interpretation with qualitative insights into the L1-based strategies employed by learners. This combination enhances the validity and depth of the findings by capturing both patterns and explanations behind them (Creswell & Plano Clark, 2018). In second language research, such integration is essential for understanding both performance and cognitive processes.

The study involved fifty-six (56) Grades 9 and 10 Kolibugan learners of Sirawai National High School, aged 15 to 17 years. All participants were native speakers of Kolibugan language and had been studying English formally since Grade 1. Kolibugan meaning, “mixed” – referring to their intermarriage with non-Muslim groups – are a subgroup of the Moro ethnic community in the Southern Philippines. Participants were selected through purposive stratified sampling and grouped according to their English proficiency, based on their average English grades from the previous school year. Learners with an average of 88–100 were classified under the high proficiency group (*A1*), while those with averages of 80–87 were assigned to the low proficiency group (*A2*). To ensure equal representation and manageable analysis, 28 participants were selected for each group, a total of 56 respondents. This approach aligns with accepted practices in educational research, particularly in descriptive and mixed-methods studies, where moderately sized samples are sufficient to detect meaningful differences (Creswell, 2012; Cohen, Manion, & Morrison, 2018). As noted by Teddlie and Yu (2007), stratified purposive sampling allows researchers to focus on “information-rich” cases without requiring a fully randomized sample.

To ensure anonymity and integrity of the results, participants were assigned code identifiers. They were not also informed of the grouping criteria or the specific aims of the study. Prior to data collection, formal approval was secured from the school principal, as well as informed consent from the parents or guardians of all respondents.

The instrument used was a paper-based questionnaire composed of 40 English sentences, 20 experimental and 20 filler items. Items and choices were randomly sequenced and constructed in such a way that there would be no discernable patterns in sentence structure, content or answer positions to prevent respondents from guessing the nature of the study. The experimental sentences, adapted from Felser et al. (2003), were constructed to be syntactically ambiguous, following the structure *NP-V-[NP1-P-NP2]-RC*, where *V* is a matrix verb, *P* a preposition, and *RC* a relative clause. Each sentence was followed by a comprehension question designed to reveal whether the respondent interpreted the relative clause as attaching to NP1 or NP2. To reduce predictability and potential test fatigue filler sentences were included.

Respondents read the sentences and answered the corresponding multiple-choice comprehension questions. Their responses were recorded and used to determine attachment preferences. Following this, short semi-structured interviews in their preferred language (Kolibugan, Filipino, or English) were conducted to 10 participants, selected through random lottery, with equal representation from both proficiency groups. Hsieh and Shannon (2015) reiterated that qualitative content analysis research does not prescribe a strict number of respondents or samples because it seeks to interpret meaning and not to generalize. Finally, all responses were audio-recorded and transcribed.

Quantitative data were statistically analyzed to address the first two research questions. Responses to the comprehension questions were numerically coded, with “1” representing High attachment (HA) and “2” representing Low attachment (LA). The frequencies and percentages of HA and LA responses were calculated for each proficiency group. To determine whether there was a statistically significant relationship between English proficiency (IV) and attachment preference (DV), a Chi-square test of independence was performed. The statistical data were the weight cases derived from the attachment frequencies

responses. Discussions on the results were anchored on Garden Path Theory and the Shallow Structure Hypothesis.

Finally, to address the third research question, qualitative data from the interviews were analyzed thematically. A coding procedure was employed to identify recurring patterns in participants' explanations, particularly those indicating the influence of their L1 on the parsing of ambiguous English sentences. The analysis focused on language transfer phenomena and the interpretive strategies used by learners across proficiency levels.

3. Results and Discussion

3.1 Syntactic Ambiguity Parsing Preferences Among Kolibugan L2 Learners

Table 1 Parsing Preferences Among Across Proficiency Levels

Proficiency Level	<i>n</i>	HA Preference (<i>n</i> , %)	LA Preference (<i>n</i> , %)	Total responses (20 items x <i>n</i>)
High	28	273 (48.75%)	287 (51.25%)	560 (100%)
Low	28	210 (37.5%)	350 (62.5%)	560 (100%)

Table 1 presents the parsing preferences of Kolibugan junior high school learners in resolving syntactic ambiguity involving relative clause attachment, categorized by English proficiency levels. Both groups showed a general preference for LA, though the degree varied significantly with proficiency. This supports the assumptions of Garden Path Model (Frazier & Rayner, 1982), particularly the Late closure strategy and Recency principle. This finding implies that respondents did not rely on the grammatical structure, like sentence hierarchy or syntax, when interpreting sentences. Instead, they paid more attention to the meaning of individual words, favoring lexical and semantic cues during processing as revealed in their responses. Felser (2016) argued that LA is cognitively less demanding, as it requires shorter retrieval distances within memory, thereby reducing working memory load during real-time parsing. Thus, the preference for LA among Kolibugan learners reflects a universal cognitive strategy among L2 learners for efficient processing of syntactic ambiguity and the limitations of syntactic processing in a non-native setting. This finding aligns with prior studies in psycholinguistics where speakers of Brazilian, Romanian, Portuguese and Norwegian (all L2 speakers of English), exhibit a clear bias for LA to reduce processing load (Darzhinova et al., 2024).

Notably, Kolibugan learners in the low proficiency group favored a stronger LA (NP2) attachment than learners in the high proficiency mirroring the parsing tendencies commonly observe among native English speakers. At first glance, this appears contradictory, as previous findings have suggested that low proficiency L2 learners prefer HA due to limited syntactic processing abilities (Dusias, 2003; Goad, Guzzo & White, 2021; Wang &

Singhapreecha, 2022). But analyzing closely, Kolibugan learners may have placed greater reliance on semantic and discourse-level cues rather than syntactic structure when resolving sentence ambiguities due to their limited command of syntactic representations in English. This is consistent with the Shallow structure hypothesis (Clahsen & Felser, 2006), which posits that low proficiency L2 learners build less and simpler syntactic representations during sentence parsing. Thus, in this context, the LA preference among low English proficiency Kolibugan learners functions as a compensatory strategy to reduce working memory demands, rather than indicating syntactic sophistication.

Furthermore, sociolinguistic factors likely contribute to this LA attachment phenomenon (Beatty-Martínez & Dussias, 2017). Outside formal education, Kolibugan learners are also exposed to localized Englishes, shaped by code-switching, local dialects and simplified syntax. This kind of environment limits access to syntactically rich input, such as involving multiple noun phrases and embedded clauses, thereby fostering heuristic, linear parsing strategies that prioritize meaning over structural analysis. Therefore, while their bias for LA superficially resembles that of native English speakers, the observed preference among low proficiency Kolibugan learners may be better understood as a byproduct of adaptive, resource-efficient processing influenced by cognitive constraints and sociolinguistic exposure (Clahsen & Felser, 2006; Dussias, 2003).

In the same vein, the relatively balanced HA and LA preferences in high proficiency group may suggest increased sensitivity among learners to competing syntactic parsing strategies – Recency and Predicate proximity. This means that as English proficiency level increases, parsing becomes flexible through the integration of linear and hierarchical cues during real-time processing, though not as efficient or automatic as native processing yet. Learners gain enhanced access to hierarchical syntactic representations and become more adept at utilizing structural and lexical-semantic cues in real-time parsing, allowing for reanalysis based not on strict linear processing, but of structural cues (Papadopoulou, 2005; Cheng, et al., 2021). This supports Cheng, et al., (2021) findings that advanced L2 learners gradually restructure their parsing systems to interpret input more like native English speakers.

A more in-depth look at Table 1 reveals that Predicate proximity (HA) parsing strategy is not dominant in either Kolibugan proficiency group. This suggests that L1 transfer, which is often hypothesized to influence HA syntactic parsing, may be minimal or perhaps non-contributory among this population. This implies that even at higher proficiency level, Kolibugan learners may not have fully internalized near-native like processing and instead continue to rely on Recency-based comprehension. Papadopoulou (2005) asserted that while L1 transfer plays a role in parsing, it is not the sole determinant; cognitive processing constraints and contextual conditions, particularly limited contact with complex L2 structures, can override L1-based strategies. Therefore, the lack of a strong Predicate Proximity bias suggests that Kolibugan learners have yet to fully develop native-like syntactic parsing mechanisms, irrespective of proficiency level. This highlights the significance of considering Kolibugan language (L1) typological influence and the quality of L2 input when analyzing attachment preferences.

Overall, these insights shed light on our understanding of how learners in linguistically and socio-culturally unique contexts, such as the Kolibugan community, develop parsing strategies that are functionally adaptive yet distinct from native-like syntactic processing.

3.2 Effect of English Proficiency on Attachment Preference

Table 2 Test of Independence on English Proficiency Level and Attachment Preference

Proficiency Level	<i>n</i>	Pearson χ^2 Value	df	p-value (2-sided)	Interpretation
High	28	14.448	1	0.000*	<i>Significant</i>
Low	28				

Table 2 presents the Chi-square test of independence result on the relationship between English proficiency level and parsing strategy preference. The table indicates a statistically significant association between the two variables among Kolibugan English learners. This means that Kolibugan learners with different English proficiency levels differ in how they interpret and resolve syntactic ambiguities, particularly in cases involving relative clause attachment.

The data further suggest that parsing preference is dependent upon proficiency level. Kolibugan learners with high English proficiency are more inclined to adopt LA bias, closely exhibits parsing strategies of native speakers. In contrast, Kolibugan learners with low English proficiency tend to parse ambiguous structures differently, potentially relying on heuristic cues, which may be attributed to constrained syntactic processing capacity.

These findings clearly support Clahsen and Felser's (2006) Shallow Structure Hypothesis, which argues that L2 learners with lower proficiency often rely more on lexico-semantic and pragmatic cues in sentences, thus tend to construct shallower syntactic interpretations. Recent cognitive-psycholinguistic research by Xu (2004) demonstrated that lower proficiency Chinese learners under-utilized syntactic processing by favoring more on semantic than structural cues – like that of Garden-path. Additionally, Dussias (2003) reported that L2 learners' parsing preferences can differ significantly from those of native speakers. L2 Spanish-English bilinguals, for instance, showed relative clause attachment patterns influenced by L2 input and frequency, rather than by native-like syntactic processing strategies.

Correspondingly, Hopp's (2006) investigation on German-English bilinguals showed that learners with higher proficiency were more adept at recognizing sentence structure and using appropriate attachment strategies in their second language. Complementing these findings, Fujita and Cunnings (2023) also concluded that highly proficient L2 English learners engaged in syntactic interpretations with minimal interference thus, parse sentences like that of native speakers. Furthermore, Papadopoulou & Clahsen (2003) found that advanced multilinguals resolve relative clause ambiguities using target-consistent syntactic cues instead of default strategies. Together, these studies support the present findings that parsing preference varies according to proficiency level.

However, as Papadopoulou (2005) emphasized that L2 current processing strategies are flexible and adaptable depending on the specific demands of the input. Similarly, Hopp (2006) stressed that with increased proficiency, L2 learners may gradually structure their syntactic

representations to parse ambiguous inputs more like native speakers. To attain this, immersion in a L2 environment is necessary as it provides sustained exposure to naturalistic input and varied syntactic constructions, thereby facilitating reorganization of parsing strategies toward more target-like processing (Dussias & Sagarra, 2007).

All these clearly suggest that language exposure, processing experience and proficiency are key determinants in how ambiguous sentences are resolved. In this light, parsing strategies should be viewed as dynamic and developmentally sensitive, evolving in response to the learner's increasing interaction with authentic linguistic input and cognitive engagement with the L2.

3.3 Extent of L1-Based Interpretation Among Kolibugan Learners

The interview data suggest that the majority of Kolibugan L2 learners exhibited L1-based interpretation, indicating a considerable reliance on native parsing strategies across multiple processing tasks. While not all learners explicitly translate or structure their understanding based on their L1, many responses, at least to a considerably extent, show patterns of L1 influence like syntactic transfer, lexical reliance and fallback strategies tied to their native linguistic framework.

3.3.1 Direct translation attempts

Several Kolibugan learners admitted to directly translating ambiguous English sentences into their L1 as a coping strategy during parsing, even when such translation led to more confusion.

(1) *"I read again and again or just translate it to my language."*

(2) *"Yes, I translated it hoping to understand."*

These responses reflect cross-linguistic mediation, a common strategy among bilinguals, including Kolibugan learners, when dealing with complex L2 syntax (Odlin, 1989; Koda, 2005). Instead of resolving ambiguity through bottom-up process, parsing becomes top-down, meaning driven process as learners tried to bridge comprehension gaps by relying on familiar linguistic structures of their native language. However, such reliance may not always yield accurate interpretations, as is often the case with syntactically ambiguous constructions (Dussias, 2003). This further leads to learners incorrectly assigning thematic roles or misidentify clause boundaries, resulting in distorted interpretations of the L2 input. Moreover, the phrase *"hoping to understand"* in the second response implies expectation but not certainty, suggesting that the learner viewed L1 translation as a tentative aid rather than a reliable solution.

3.3.2 Surface cues

Other learners also applied Kolibugan syntactic rules, like agent-first (subject-verb-object) word order, syntax mapping and or linear proximity when processing the inputs.

- (3) *“In Kolibugan, we say the doer of the action first.”*
- (4) *“Yes, the words can be constructed (in Kolibugan) but the word placement changes.”*
- (5) *The last clause of the sentence gave me a hint.*
- (6) *The phrase “who was reading the book” comes right after “the singer”, so I assumed it was the singer doing the reading.*

The preference for agent-first order, as noted in the third response, illustrates how they apply familiar L1 structures to interpret ambiguous L2 input. This aligns with the Shallow Structure Hypothesis (Clahsen & Felser, 2006) and supports Odlin’s (1989) view that structural similarities between L1 and L2 influence sentence processing.

Notably, the fourth interview response points out the syntactic mismatch between Kolibugan and English, revealing how learners rely on familiar L1 structures when translating L2 input. As Jiang (2004) explains, L2 learners often fall back on L1 morphosyntax when faced with unfamiliar sentence patterns. While the learner’s awareness of word order differences suggests metalinguistic insight, it also reflects limited processing capacity, as they may lack the automaticity to suppress L1-based parsing. This is an indicative of syntactic transfer, where L1 grammar influences L2 processing (Gass & Selinker, 2008), potentially hindering accurate comprehension despite lexical understanding.

In addition, responses 5 and 6 suggest that learners interpret meaning based on the immediate surface structure of the sentence rather than engaging in hierarchical structure analysis. This processing strategy prioritizes speed and comprehensibility especially if the parser has limited working memory capacity. The use of adjacency (*“last clause”*) and clause order (*“comes right after”*) becomes fallback strategy consistent with LA bias indicating shallow processing strategies (Clahsen & Felser, 2006).

These responses further strengthened the claim in table 1 that the observed LA attachment preference among Kolibugan learners, irrespective of proficiency level, does not imply native-like parsing. Rather, it reflects a surface-level outcome driven by deeper underlying constraints, including L1 interference and reliance on semantic cues.

3.3.3 Sentence reconstruction in L1

The way learners reconstructed the sentence in Kolibugan further demonstrates how they understand sentence meaning through L1 structures.

- (7) *“Kosunan nog libun og photographer nog singer nog solyan mog basa nog libro.”*
- (8) *“Kosunan nog libun koyon og photographer nog mogkokalang yanin na og migbassa nog libro.”*
- (9) *“Kilalahan nog libun nog migbassa nog libro og photographer nog singer.”*
- (10) *“Kilala nog libun og photographer nog singer na migbasa nog libro.”*

In these excerpts, translations reflect different clausal alignment and focus strategies perhaps as evident from the varying word order in the four sentences. This variation indicates

that learners are applying internalized rules of Kolibugan to restructure the sentence for clarity.

For instance, in example 9, the learner foregrounded “*libun nog migbassa nog libro*” (presumably “*the woman who read the book*”) as the main referent. Although the exact grammatical structure of Kolibugan language is not fully outlined here, the reconstructions reveal a preferred linear order that attempts to clarify who is doing what to whom. This indicates a possible preference for assigning the agent role to topical referents early in the sentence to help resolve ambiguity. This supports the idea of L1-based parsing, where learners default to native grammar constraints and word-order strategies to interpret complex L2 input (Odlin, 1989; Papadopoulou, 2005).

Furthermore, in all the sentences, the verb “*kosuna/kilalahan*” (meaning “knew”) appears at the beginning, followed by “*libun*” (meaning “the woman”), indicating a verb-fronting pattern in Kolibugan grammar that learners appear to transfer to their L2 processing. This illustrates L1-based syntactic transfer, where learners do not merely translate English sentences word for word, but instead rearrange clause elements to align with the grammatical and discourse patterns of their native language (Odlin, 1989; Jarvis & Pavlenko, 2008). This implies that L2 syntactic parsing is strongly influenced by L1 structural patterns, especially when learners have limited proficiency in the L2.

These varying reconstructions reveal how learners reshape L2 into familiar grammatical patterns that are cognitively accessible highlighting the need for targeted instruction and exposure to diverse L2 syntactic structures to develop more efficient parsing strategies (Hopp, 2006; MacManus & Marsden, 2019). In addition, further research is warranted to explore the typological features of the Kolibugan language, which may provide deeper insights into the nature and extent of syntactic transfer.

Taken all the evidence together, it becomes clear that Kolibugan learners process English through deeply ingrained L1 frameworks. Their parsing is not merely a linguistic task but a reflection of how their mind leans on the familiar to make sense of the unfamiliar. Whether through direct translation, reliance on surface cues, or syntactic reconstruction in Kolibugan, their parsing behavior reveals a consistent pattern of L1-mediated interpretation. These findings reinforce the core claim of cross-linguistic influence that L1 structures can significantly shape L2 processing, especially in contexts where syntactic ambiguity demands resolution strategies beyond lexical decoding (Odlin, 1989).

4 Conclusion

A key finding across Kolibugan high and low proficiency groups is the dominant bias for Low Attachment (LA). This finding reveals that L2 parsing is not a linear trajectory toward native-like competence but a nuanced interaction process of cognitive efficiency, linguistic exposure, and L1 influence. While high proficiency learners demonstrated an emerging sensitivity to hierarchical structure as evident to a more balanced use of syntactic cues, low proficiency learners depended more on heuristic strategies such as linear proximity and L1-based constructions. Interview responses further reinforced these claims, showing clear patterns of direct translation, syntactic transfer, and sentence restructuring – clear proof on

cross-linguistic influence processing. Furthermore, this research reaffirms that parsing strategies evolve with increased language exposure and cognitive engagement. Together, these results highlight that parsing among Kolibugan learners is a dynamic, adaptive process shaped by cognitive limitations, sociolinguistic environment, and native language influence. As such, L2 processing should not be viewed merely as a reflection of linguistic deficit but as a strategic adjustment to available cognitive and linguistic resources.

Along this, English teachers in Sirawai National High School may embed contextualized grammar lessons on complex structures to promote syntactic awareness, thereby reducing overreliance on heuristic linear proximity. They may also scaffold reading comprehension using cognitive strategies such as Think-aloud, PBL with texts or reciprocal teaching to gradually shift Kolibugan learners from lexical decoding to hierarchical syntactic analysis. Syntactic mapping techniques like text diagramming and the use of graphic organizers when teaching may also provide accessible representations of sentence hierarchy that supports parsing accuracy. Further, to strengthened processing automacy, frequent exposure to the target language using multimedia content, authentic texts and digital apps and platforms in classes may provide learners rich linguistic output and real-life L2 use to avoid cognitive deficit. Additionally, strategic use of Kolibugan language may also bridge understanding of complex L2 structure. However, these recommendations will only be possible if English teachers are equipped with professional training on L1-L2 parsing influences for them to design more responsive instructional strategies.

Further studies are recommended to explore the grammatical aspects, word order and structural patters of the Kolibugan language and how the interaction of these features influences the interpretation and processing of English sentences among Kolibugan L2 learners.

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