

Article

Filipino Children's Acquisition of Nominal and Verbal Markers in L1 and L2 Tagalog

Aireen Barrios ^{1,*}  and Rowena Garcia ^{2,3,4} ¹ Department of English and Applied Linguistics, De La Salle University, Manila 2401, Philippines² Department of Linguistics, University of Potsdam, 14476 Potsdam, Germany³ Language Development Department, Max Planck Institute for Psycholinguistics, 6525 XD Nijmegen, The Netherlands⁴ Department of Speech Pathology, University of the Philippines Manila, Manila 1000, Philippines

* Correspondence: aireen.arnuco@dlsu.edu.ph

Abstract: Western Austronesian languages, like Tagalog, have unique, complex voice systems that require the correct combinations of verbal and nominal markers, raising many questions about their learnability. In this article, we review the experimental and observational studies on both the L1 and L2 acquisition of Tagalog. The reviewed studies reveal error patterns that reflect the complex nature of the Tagalog voice system. The main goal of the article is to present a full picture of commission errors in young Filipino children's expression of causation and agency in Tagalog by describing patterns of nominal marking and voice marking in L1 Tagalog and L2 Tagalog. It also aims to provide an overview of existing research, as well as characterize research on nominal and verbal acquisition, specifically in terms of research problems, data sources, and methodology. Additionally, we discuss the research gaps in at least fifty years' worth of studies in the area from the 1960's to the present, as well as ideas for future research to advance the state of the art.

Keywords: Tagalog; verbal marking; nominal marking; acquisition; Western Austronesian; voice system



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1. Introduction

Children commit production errors as they acquire language. There is general agreement that in the first year of life, children make many errors in phonology, lexicon, and grammar. These errors can be divided into two broad types: (1) omission errors, where children produce less language material than adults, and (2) commission errors, where children produce more language material than adults or incorrectly use language material (McCauley et al. 2021).

A close look at morphology reveals that children make errors in nominal and verbal inflection. For example, typically developing English-speaking children show errors in producing the past tense of verbs, albeit only minimally (Marchman et al. 1999, testing 6;3–12;2 children; Marshall and van der Lely 2012, testing 5;4–8;5 children). Errors include the omission of past tense inflection (e.g., “meet” instead of “met”), the overgeneralization of a suffix for regular verbs (e.g., “hitted” instead of “hit”, “threwed” instead of “threw”), and suffixation of a past tense form (e.g., “wonneed” instead of “won”). As these incorrect forms are not heard in the input that children receive, the fact that children are able to generate these forms reflects their growing skills in morphological production.

Most of the debate on the acquisition of inflectional morphology centers on whether it is based on rules or analogy. The dual-route account (e.g., Hartshorne and Ullman 2006; Pinker and Ullman 2002; Prasada and Pinker 1993) posits that irregular verbs, such as *threw*, are stored in the lexicon in clusters or “neighborhoods” of phonologically similar verbs (e.g., *throw/threw* and *blow/blew*); while regular past tense forms, on the other hand, are not stored but are formed by applying a default rule of adding *-ed*. In other words, irregular

verbs are learned in a rote fashion, while regular verbs are learned and retrieved through rules. When a stored irregular verb cannot be retrieved (for example, by children), the default rule becomes involved (Prasada and Pinker 1993), resulting in overgeneralization errors, such as *throwed* and *blowed*.

In contrast, a single-route approach (e.g., Bybee and Slobin 1982; Bybee and Moder 1983; McClelland and Patterson 2002; Tomasello 2009) argues that instead of generalizing using rules, speakers use prototypes or schemas from whole words. In these approaches, lexical associations are formed, and morphological patterns (*throw/throw* and *blow/blew*) emerge from the connections between words that have similar phonological or semantic characteristics. New verbs are fitted into the already formed schemas, and productivity is dependent on the type of frequency of a particular schema, as well as its openness to accepting new forms (Krajewski et al. 2011). Specifically, because of the high-type frequency of the regular schema in English, children tend to form a VERBed slot-and-frame pattern, resulting in overgeneralization errors. In contrast, the comparatively low-type frequency of irregular patterns leads to few overgeneralizations given this pattern (e.g., *beep* → **bept*).

More recently, it has been argued that it is not simply a competition between rules and analogy, as the different acquisition approaches involve varying degrees of both (see Granlund et al. 2019 for an extensive discussion of the various approaches). In any case, most of these approaches have only been tested on more straightforward morphological systems, such as English and German, and it is only recently that there are more studies on complex systems such as Polish, Finnish, and Estonian (Engelmann et al. 2019; Vihman et al. 2021). Investigating Estonian noun inflection, Vihman et al. conclude that proficiency in productive noun marking is due to analogy over a large array of examples. This is based on their finding that the neighborhood density of the children's responses increased with age. Moreover, children preferred using the more frequent but less transparent patterns instead of simply resorting to the pattern that required fewer stem changes. Similarly, Engelmann et al. conclude that their data on Polish and Finnish can be accounted for by a model that involves "rote storage and phonological analogy, as opposed to formal symbolic rules".

Studies involving children who speak more than one language also suggest that they might have difficulties in nominal and verbal morphology, reflecting factors at work related to bilingual (or multilingual) situations. Spanish–English bilingual children's use of past tense morphology is behind monolingual children's (Jacobson and Livert 2010). Comparing raw scores in Castilla-Earls et al. (2020, monolinguals) and Castilla-Earls et al. (2021, Spanish–English bilinguals), 5-year-old bilinguals seem to make more mistakes in inflecting Spanish verbs, articles, and plural marking compared to monolinguals. Mandarin-dominant English–Mandarin bilingual children also do not seem to inflect English verbs for tense even at age 6 to 8, while English-dominant children show a similar but delayed pattern of verbal inflection acquisition compared to English monolinguals (Brebner et al. 2016).

In this paper, we aim to present a fuller picture of commission errors made by Filipino children by presenting a review of the literature. We discuss patterns of nominal and verbal marking errors gathered from experimental and naturalistic studies on both first language (L1) and second language (L2) acquisition of Tagalog among Filipino children, commencing in the 1980's to the present. The review is a sequel to Gonzalez's (1986) state-of-the-art paper on child language studies in the Philippines almost three decades earlier. Specifically, this paper focuses on errors in verbal and nominal marking in Tagalog, a major language in the Philippines but an understudied language in this respect. A Western Austronesian language, Tagalog has a complex voice system that requires the correct combinations of verbal and nominal markers. The morphosyntax of Philippine languages has been described as "notoriously difficult to describe adequately" (Reid 1981). Different sets of prefixes, infixes, and suffixes that have been called voice marking, case marking, or focus marking occur on the verb to highlight or bring the subject into focus. Errors in the current review show many patterns in how nouns and verbs are marked by children, raising intriguing questions about how the correct forms are learned. Additionally, we relate these

error patterns to findings in other languages and discuss their implications on proposed theories of inflectional morphology acquisition.

1.1. Properties of Tagalog

Tagalog is a Malayo-Polynesian Austronesian language from the Philippines, with more than 23 million first-language (L1) speakers and 52 million second-language speakers (L2) (Eberhard et al. 2022). It is considered a symmetrical voice language as it has more than one basic transitive form that is equally marked (Chen and McDonnell 2019; Foley 1998; Himmelmann 2005; Riesberg 2014). Moreover, across the voice alternations, no argument is demoted to an oblique (Riesberg and Primus 2015).

A basic Tagalog sentence is commonly predicate-initial, and the predicate is typically a verb that is marked for voice, aspect, and mood. The subject is marked by *ang*, and non-subject arguments and adjuncts which are not personal names are marked by *ng* (1–4) or *sa*. Instead of *ang*, *ng*, and *sa*, personal names are marked by *si*, *ni*, and *kay*, respectively. Pronouns also have different *ang*, *ng*, and *sa* forms¹.

(1)	H<um>i~hila	ng	babae	ang	lalaki
	<AV>IPFV~pull	GEN	girl	SBJ	boy
	“The boy is pulling a girl.”				
(2)	H<in>i~hila	ng	babae	ang	lalaki
	<PV>IPFV~hila	GEN	girl	SBJ	boy
	“The/A girl is pulling the boy.”				
(3)	H<um>i~hila	ang	lalaki	ng	babae
	<AV>IPFV~hila	SBJ	boy	GEN	girl
	“The boy is pulling a girl.”				
(4)	H<in>i~hila	ang	lalaki	ng	babae
	<PV>IPFV~hila	SBJ	boy	GEN	girl
	“The/A girl is pulling the boy.”				

An interesting feature of Tagalog is that the voice marking on the verb assigns the arguments’ thematic roles (Himmelmann 2005). In 1 and 3, the agent voice infix <um> marks the subject and the *ang*-phrase is the agent; while in 2 and 4, the patient voice infix <in> marks the *ang*-phrase as the patient. The post-verbal arguments have a relatively free position, resulting in agent-initial (e.g., 2, 3) and patient-initial utterances (e.g., 1, 4) in both voices. In the agent voice (i.e., the subject is the agent), the verb can be marked by the infix <um> or the prefixes *mag-* and *maN-*. Other voices, which Himmelmann (2005) refers to collectively as undergoer voices, have a non-agent subject. These voices can be divided into the patient voice (suffix *-in*, where the subject is the patient), conveyance voice (prefix *i-*, where the subject is a beneficiary, instrument, or displaced theme), and locative voice (the suffix *-an*, the subject is a location or goal). Aside from learning when to use each voice, children also need to learn which specific markings within each voice can be used with each lexical verb.

Voice marking is also fused with aspect and mood marking (see Table 1, based on Himmelmann 2005). The perfective aspect is unmarked, while the imperfective aspect is marked by a consonant–vowel (CV) reduplication. In the agent voice *mag-* or *maN-* verbs, realis mood is marked by substituting the voice markers *mag-* and *maN-* with *nag-* and *naN-*, respectively. In the agent voice <um> verbs, <um> itself is absent in verbs in non-realis imperfective. In the patient voice, realis mood has the infix <in> and drops the suffix *-in*.

Aside from the different agent and patient voice forms described above, there are also other markers that a Tagalog speaker can use. Dynamic verbs, which are those with a volitional agent, also have potentive and stative counterparts. Potentive is used for involuntary actions (“I accidentally left the key”), actions with an unintended outcome (“I sent the wrong form”), and achievements (“I passed the test.”). Stative is used to express the state of an entity. Potentive and stative verbs are marked by *maka-* (non-realis) /*naka-* (realis) in the agent voice (e.g., potentive: *nakalunok* “to accidentally swallow”, stative: *nakagalit* “capable of making someone angry”), and *ma-* (non-realis) /*na-* (realis) in the

patient voice (potentive: *nalunok*, stative: *nagalit*) (see (Himmelman 2005) for the complete paradigm).

Table 1. Voice, aspect, and mood paradigm for *kain* “eat”, based on Himmelman (2005).

	Agent Voice	Patient Voice	Locative Voice	Conveyance Voice
Non-realis/ Perfective	K<um>ain	Kain-in	Kain-an	I-kain
Non-realis/ Imperfective	Ka~kain	Ka~kain-in	Ka~kain-an	I-ka~kain
Realis Perfective	K<um>ain	K<in>ain	K<in>ain-an	I-k<in>ain
Realis Imperfective	K<um>a~kain	K<in>a~kain	K<in>a~kain-an	I-k<in>a~kain

Note. Recent perfective: *ka-ka~kain*.

All these possible combinations present a unique challenge to a child learning Tagalog as an L1 and an L2. Looking at Tagalog-speaking children’s marking of nouns and verbs and the errors that they make provides insight into how they acquire this complex grammatical system.

1.2. Tagalog Use

Tagalog is spoken as an L1 in most of central and southern Luzon, particularly in Manila and the provinces of Bulacan, Cavite, Laguna, Quezon, and Batangas, as well as on the island of Mindoro. Its dialects include Lubang, Manila, Marinduque, Bataan, Batangas, Bulacan, Puray, Tanay-Paete, and Tayabas (Eberhard et al. 2022). It is used widely for communication, particularly in the domains of work and mass media.

Republic Act No. 10533, also known as the Enhanced Basic Education Act of 2013, a comprehensive basic education law, mandates the use of Tagalog² and English as subjects with a focus on oral fluency starting in the first grade in the K-12 curriculum. From the fourth to the sixth grade, Tagalog and English are gradually introduced as languages of instruction. Both become primary languages of instruction in junior and senior high school. Meanwhile, at kindergarten, 5-year-olds are introduced to the alphabet, numbers, shapes, and colors through games and songs in their mother tongue. Tagalog is one of the twelve mother tongue languages introduced during the school year 2012–2013. The other eleven are Bahasa Sug, Bikol, Cebuano, Chabacano, Hiligaynon, Iloko, Kapampangan, Maguindanaoan, Meranao, Pangasinense, and Waray. Other local languages in succeeding school years were added, totaling 19 mother tongues at present (Official Gazette of the Republic of the Philippines 2022).

The use of Tagalog in the country is widespread. Historically, bilingual education in the Philippines starting in 1974 mandated the use of English in mathematics and science and Tagalog as a medium of instruction in all other subjects. The inclusion of Tagalog in the bilingual education curriculum across all levels led to its intellectualization and its spread as a national lingua franca beyond Tagalog-speaking regions (Tupas and Martin 2016). Today, under the Mother Tongue-Based Multilingual Education system, Tagalog-speaking regions use the following Tagalog dialects as mother tongues: Batangas Tagalog, Bulacan Tagalog, Marinduque Tagalog, and standard Tagalog (Metila et al. 2016). Meanwhile, over half of the total population of one hundred million people in the Philippines are L2 speakers of Tagalog. In non-native Tagalog-speaking regions in the Philippines, particularly in northern Luzon, Visayas, and Mindanao, children learn to speak Tagalog either simultaneously with their mother tongue or sequentially as a second language. Given this context, the study of Tagalog becomes even more important. The sheer size of the population that speaks Tagalog as an L1 or L2 prompts one to ask what errors child acquirers of Tagalog as an L1 or L2 commit and what these errors can possibly suggest. This review would also benefit other Philippine languages (or Philippine-type languages) with the same voice marking system as well as inform general theories on the acquisition of inflectional morphology.

2. Materials and Methods

We searched the following databases from the beginning of their records until 2022: De La Salle University (DLSU) library, Ateneo de Manila University (ADMU) library, University of the Philippines Diliman (UPD) library, Philippine Journal of Linguistics (PJL), Pubmed, ScienceDirect, and the American Psychological Association (APA). We searched for Tagalog AND child AND acquisition within the title or keywords. For DLSU, we searched within the subject because there were many irrelevant hits when looking within keywords. For PJL, we used OR as the Boolean operator. This search resulted in 31 reports with 4 duplicates (see Figure 1 for the PRISMA flowchart). The records were then screened based on their titles if they focused on (1) Tagalog, (2) children's acquisition, and (3) morphosyntax. The 10 that passed the screening were then assessed for full eligibility (i.e., focusing on nominal and verbal errors in production), removing a total of 4 papers (2 without a description of production errors, 2 focusing on comprehension), which resulted in 6 papers.

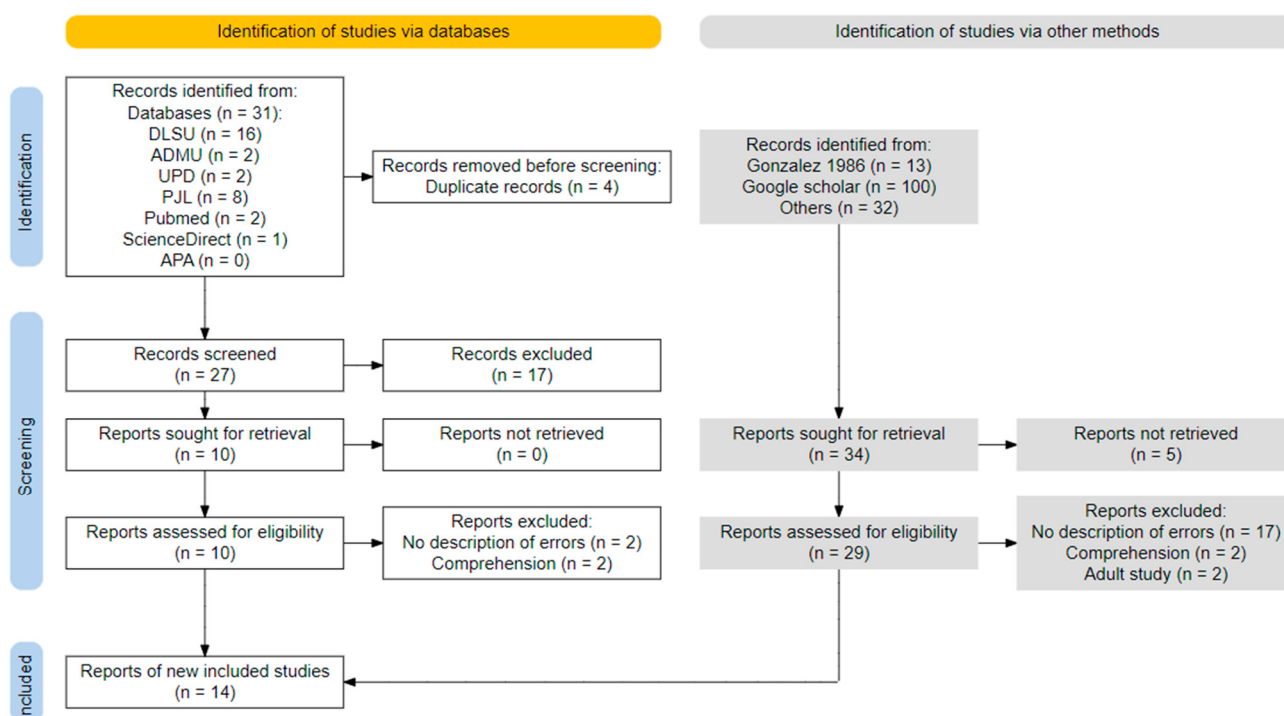


Figure 1. A PRISMA flowchart of manuscript selection.

We also searched for the relevant references mentioned in Gonzalez (1986, 13 total based on the topic mentioned in the article) but were not able to retrieve 5. We also searched the University of the Philippines Manila's internal list of theses and faculty manuscripts until 2020 and found 8 that focus on Tagalog child acquisition (based on the title and short description). Searching the DLSU unpublished manuscripts showed 21 relevant papers. We also had access to 2 datasets (Barrios and Bernardo 2012; Garcia 2021) and one personally received unpublished manuscript. We also screened the first 100 hits of Tagalog AND child AND acquisition in Google Scholar. Removing the duplicate articles from the databases (15), we assessed 27 studies in total. We removed a total of 21 papers (17 without a description of errors, 2 focusing on comprehension, and 2 focusing only on adults), resulting in 8 papers. Overall, we analyzed 14 papers from databases and other sources.

For Garcia's (2021) dataset, which is a semi-naturalistic corpus, the software R (version 4.2.3, R Core Team 2016) was used to identify children's utterances with a verb and at least one argument, as these were already tagged in the corpus. These utterances were then manually screened for errors. Other verb errors were identified through an automated

search for “[*]”, which is how inflection errors were tagged in the corpus. All productions in the picture description task of Barrios and Bernardo (2012) were manually examined.

3. Results

3.1. Tagalog L1 Studies

3.1.1. Nominal Marking

Our understanding of the development of Tagalog-speaking children’s marking of nouns comes from naturalistic and semi-naturalistic observations, as well as experiments. The observational studies are presented first, followed by the experimental studies.

The youngest participants were those observed by Gonzalez (1984), who tape-recorded conversations of two children (starting at 5 mos. (ARG) and 15 mos. (RRG)) and their family for a half hour every week for 37 months, as well as wrote diary entries of observations focusing on new features and emerging patterns. Structured tasks were also minimally used to elicit aspects and voice markings on the verb from ARG at the age of 3. Looking at the noun marking of the children, Gonzalez reported ARG’s use of the *ang* marking at the age of 1;03, *ang* forms of deictic pronouns at 1;06, *ang* forms of personal pronouns at 1;09, and *si* marking at 2.1. Typically, these referred to the proto-patients (e.g., patient, goal, beneficiary).

In terms of errors, ARG mistakenly used two *ang* phrases (*ang* pronoun and *ang* phrase noun; 5a) instead of marking the noun with an *ng* marker as in (5b), at the age of 2;08 in a structured task. The use of two *ang* phrases was also observed in ditransitives as in (6a) and produced at the age of 2;04. There should have only been one *ang* form pronoun, and the rest should have been *ng* forms (6b). The same was also observed in a ditransitive utterance with full noun phrases produced at 3;02 (7a), where the first marker should have been an *ng* marker as in 7b. It must be noted that the frequency of occurrence of these errors was not reported.

(5a)	*S<um>akay	kami	ang	kabayo			
	<AV>ride.PFV	1.PL.EX.SBJ	SBJ	horse			
	“We rode a horse.”						
(5b)	S<um>akay	kami	ng	kabayo			
	<AV>ride.PFV	1.PL.EX.SBJ	GEN	horse			
	“We rode a horse.”						
(6a)	*Bigy-an	mo	ako	ito			
	Give-LV.INF	2SG.GEN	SBJ	PRX.SBJ			
	“Give me this.”						
(6b)	Bigy-an	mo	ako	nito			
	Give-LV.INF	2SG.GEN	SBJ	PRX.GEN			
	“Give me this.”						
(7a)	*B<in>igay	‘yung	lalaki	sa	babae	ang	libro
	<PV>give.PFV	SBJ	boy	DAT	girl	SBJ	book
	“The boy gave the book to a/the girl.”						
(7b)	B<in>igay	nung	lalaki	sa	babae	ang	libro
	<PV>give.PFV	GEN	boy	DAT	girl	SBJ	book
	“The boy gave the book to a/the girl.”						

More recently, a semi-naturalistic corpus of one-hour interactions of 20 child–guardian pairs was collected by Garcia (2021), see Garcia and Kidd (2022) for a multivariate corpus analysis of child-directed and children’s speech. There were 20 children aged 2;0 to 4;0, and they were filmed while interacting with their guardians using the toys and books that the researchers provided. In verbal utterances with at least one argument (869), we found that 10% had noun marking errors. These were all omission errors except for two instances of the use of “ikaw” instead of “ka” (8a). Both “ikaw” and “ka” are *ang* forms but “ikaw” is used only in topicalizations. Notably, guardians were also observed to be using this construction instead of the grammatical one (8b). The rest of the errors involved dropping either the *ang* marker/*ang* forms (59%) or *ng* marker/*ng* forms (18%), both *ang* and *ng* (1%),

or the *sa* marker (1%). Others also did not have voice marking on the verb, so it is difficult to determine what should have been the marker of the nouns (21%).

- (8a) *Kain na ikaw baby?
eat already 2.SG.SBJ baby
“(Do you want to) eat already, baby?”
- (8b) Kain ka na baby?
eat 2.SG.SBJ already baby
“(Do you want to) eat already, baby?”

Moving to experimental studies, Bautista (1983) presented an example from a picture description task focusing on word order, where children aged 2;7–4;6 made errors by using *ang* for both nouns (9)³, similar to what was reported by Gonzalez (1984). It is unclear if all 6% mentioned as having errors had the double *ang* error. Note that this double *ang* is different from fronting, which is considered grammatical (and also reported by Bautista, (10)).

- (9) *Nag-ba~batuk-an ang pulis iyong bata
AV.IPFV~hit on the head-REC SBJ policeman/woman SBJ child
“The policeman/woman and child are hitting each other on the head.”
- (10) Iyong dalaga g<in>u~gupit-an iyong bata
SBJ maiden <PV>IPFV~cut-LV SBJ child
“The maiden, she is giving the child a haircut.”

Testing older children (4;11–5;9) in a picture description task, Tanaka (2016) reported that 9% of the 213 analyzed responses had errors either in nominal marking or in the voice marking of the verb. Similar to Gonzalez (1984) and Bautista (1983), double *ang* errors were observed (although the actual number was not reported). Interestingly, double *ng* errors were also reported (personal communication, 14 April 2021, (11)). Tanaka also reported reversal errors, i.e., the use of *ang* for *ng*, and vice versa (12). Note, however, that this error can also be thought of as a voice marking error. If the verb on (12) had the infix <in> instead, then the noun markers would be correct. The use of *sa* instead of *ng* was also observed (13).

- (11) *P<in>i~pitas ng bulaklak ng babae
<PV>IPFV~pick GEN flower GEN girl
“The/a girl is picking a/the flower.”
- (12) *Y<um>a~yakap ng lalaki ‘yung babae
<AV>IPFV~hug GEN boy SBJ girl
“The girl is hugging a boy” to describe a picture where a boy is hugging a girl.
- (13) *P<in>u~push ang lalaki sa babae
<PV>IPFV~push SBJ boy DAT girl
“The boy is being pushed towards the girl” to describe a picture where a girl is pushing a boy.

Combining a picture description task with a sentence completion task (an agent voice- or patient voice-marked verb was provided), Garcia et al. (2018) reported that 17% of the nouns produced by 5-year-old Tagalog-speaking children had the wrong marking, while for the 7-year-olds, it was 14%. In the 5-year-olds, 66% of the errors were in the agent voice, while it was 52% for the 7-year-olds. The majority of the 5-year-old’s errors were reversals of *ang* and *ng* (63% of the errors given an agent voice verb prompt, 42% for the patient voice prompt), and they also reported the use of double *ang* (16% for the agent voice, 35% for the patient voice), and double *ng* (14% for the agent voice, 12% for the patient voice), similar to what was observed by Tanaka (2016). They also reported that some of the children omitted the marker in one of the arguments (5-year-olds: 8% for the agent voice, 11% for the patient voice; 7-year-olds: 7% for both voices), similar to the findings from Garcia’s (2021) semi-naturalistic corpus. Using a similar task but focusing on reflexive actions (e.g., *kinakamot ng lalaki ang kanyang sarili* “the boy is scratching himself”), Bondoc et al. (2019) also reported that 3;2 to 6;1 of the children produced a reversal of *ang* and *ng* errors in both the agent voice (4.16% of responses given an agent voice prompt) and patient voice (4.35% of the responses given a patient voice prompt). They also reported missing nominal markers in the agent voice (4.16% of responses were given an agent voice prompt).

Using the same task as Garcia et al. (2018) but with the addition of priming of word order, Garcia and Kidd (2020) also found in two experiments that 3-, 5-, and 7-year-old Tagalog-speaking children made noun marking errors in verbal utterances. In both experiments, the accuracy in noun marking increased with age: from 3-year-olds, 17–24%, 5-year-olds, 55–59%, and 7-year-olds, 93–95%. Similar to what Garcia et al. (2018) found, 5- and 7-year-olds showed higher accuracy in the patient voice condition than in the agent voice. The majority of errors made by the 3-year-olds was omitting one of the noun markers (average of 55%), while the 5- and 7-year-olds used the wrong marker for at least one of the arguments. In line with the previous studies, the 5-year-olds were reported to use double *ang* (average of 19%) and double *ng* (average of 19%)⁴, as well as reverse the *ang* and *ng* markers (average of 39%). The latter is also the bulk of the few errors from the 7-year-olds. These reversal errors were observed more in the agent voice than the patient voice.

Most of the studies report children's use of double *ang*, double *ng* and a reversal of the *ang* and *ng* markers. It seems, however, that these were mostly observed in structured or experimental tasks, as there were mostly omission errors in Garcia's (2021) semi-naturalistic dataset. Structural tasks require more than what the children need in naturalistic conversations (e.g., producing two full noun phrases, which is not common in naturalistic speech, as reported in Garcia and Kidd 2022), so it is possible that we see the commission errors mostly in more complex tasks. Alternatively, it could be that the error rates are higher in less frequent structures (Aguado-Orea and Pine 2015). Garcia et al. (2018) also mentioned that the reversal noun marking errors produced by their participants could have been due to the design of the experiment. It was probable that children anticipated a particular voice for a given picture and could not overwrite this prediction upon hearing another voice marked verb, which they were supposed to use, resulting in the reversal of the markers. More specifically, it seems that children predicted the more frequent patient voice; therefore, they made more reversals of the noun markers when given an agent voice verb.

Moreover, there is evidence that omission errors are more common in younger children, while commission errors are more frequent in older children. This result suggests that children around 3 years of age still have difficulties in marking both nouns in transitive sentences, while 5- and 7-year-olds know that the noun markers are obligatory, but they have not yet fully mastered the use of the *ang* and *ng* markers.

3.1.2. Voice Marking on the Verb

Based on Marzan's (2013) corpus of naturalistic observations, Marzan et al. (2014) reported that 1;2–3;7 of the children used uninflected verbs more frequently than inflected verbs. However, when the verbs were marked, the inflection used was adult-like 95% of the time. They also reported that the substitution of verb markers was minimal (1%).

In Garcia (2021)'s semi-naturalistic corpus, 80% of the verbs produced by children with a mean length of utterance in morphemes (MLU)⁵ of less than 2 were not inflected for voice. For the children with an MLU greater than 2, only 33% were not inflected for voice. Aside from not inflecting the verbs with voice, children also produced 58 other voice marking errors (4 from the MLU < 2 group, and the remaining 55 were from MLU > 2). There were more errors from those with a higher MLU because they were the ones who were trying to inflect the verb with a voice more frequently. Half of these errors involved an incorrect undergoer voice marking, either due to an additional locative voice marker, e.g., *kinabitan* instead of *kinabit*; a missing a locative marker, e.g., *hinawak* instead of *hinawakan*; the use of the locative instead of the patient voice, e.g., *lalanggaman* instead of *lalanggamin*; or the use of two undergoer voice markers that cannot be combined, e.g., *kinukunin* instead of *kinukuha* and *ilalagyan* instead of *lalagyan*. There were also instances of a change in voice (33%), e.g., the agent voice *magluluto* to the potentive patient voice *maluluto*, the patient voice *kakainin* to the agent voice *kakain*, and the agent voice *lumubog* to the potentive locative voice *nalubugan*. There was also an error involving changing a potentive locative voice *nadumiha*n to a dynamic locative voice *dumiha*n. The remaining 20% were from the use of the wrong agent voice marker 10 times, e.g., *nanghubad* instead of *naghubad*.

Sometimes, this did not result in a different meaning, but it was judged as an incorrect agent voice marker to use, e.g., *nag-uubo* instead of *umuubo*. A summary of the production patterns and errors can be found in Table 2.

Table 2. A summary of the L1 and L2 errors in Tagalog reported in previous work.

	Observed in L1	Observed in L2	Observed in Both
Nominal marking			
General findings	Higher accuracy in the patient voice than in the agent voice	Use of <i>sa</i> instead of <i>ng</i> (Cebuano)	
Errors	Double <i>ng</i> errors		Double <i>ang</i> errors Reversal errors
Verbal marking			
General findings	Higher accuracy in the patient voice than in the agent voice	Frequent use of the agent voice <i>mag-</i> (Chabacano)	
Change of voice	Use of the agent voice instead of the patient voice		Use of the patient voice instead of the agent voice
Change of voice and dynamic/potentive status	Use of the agent voice instead of the stative patient voice, use of the stative patient voice instead of the agent voice, use of the potentive locative voice for the agent voice, use of the dynamic locative voice for the potentive locative voice		Use of the potentive patient voice instead of the dynamic agent voice (Chabacano)
Use of incorrect undergoer marker	Additional locative voice marker, missing locative marker, use of the locative instead of the patient voice, use of two undergoer markers that cannot be combined, use of the patient voice instead of locative, the locative voice instead of the conveyance voice	Use of the conveyance voice instead of the patient voice (Chabacano)	
Use of incorrect agent voice marker	Use of prefix <i>nag-</i> instead of <i><um></i> , use of <i>nang-</i> instead of <i>nag-</i>	Use of prefix <i><um></i> instead of prefix <i>nag-</i> (Chabacano)	
Morphophonological change	Use of prefix <i>ni-</i> instead of the patient voice infix <i><in></i>		
Other errors		Combining the agent voice <i>nag-</i> with locative <i>-an</i> (Chabacano)	

Gonzalez (1984) also observed verb inflection errors between ages 3;1 and 3;5. Similar to Garcia's (2021) corpus, the children showed the use of the wrong undergoer voice marker, e.g., the patient voice *alisin* instead of the locative voice *alisan*, the additional locative voice *tinawagan* instead of the patient voice *tinawag*; the locative voice *sinulatan* instead of the conveyance voice *isusulat*, and of two undergoer voice markers that cannot be combined, e.g., *ginagamitin* instead of *ginagamit* and *sinasabihin* instead of *sinasabi*. Changes in voice were also observed, e.g., the agent voice *kakain* to the patient voice *kakainin*, the patient voice *kinakain* to the agent voice *kumakain*, and the stative patient voice *natatakot* to the agent voice *tumatakot* (although *nananakot* is the preferred agent voice form). There were also observations of the wrong agent voice marker, e.g., *magsakay* instead of *sumakay*, *nagliligo* instead of *naliligo*, and *naggagawa* instead of *gumagawa*.

From a slightly older age range (3;6 to 3;9) to Gonzalez (1984), Oestman (1974) also noted commission errors in spontaneous verb productions of one child (the other participant mostly repeated utterances and seem to have made omission errors instead). As in the other studies, the child produced the stative patient voice instead of the agent voice, e.g., *natatae* instead of *nagtatae*; the agent voice instead of the patient voice, e.g., *kakagat* instead of *kakagatin*; and the potentive patient voice instead of the dynamic agent voice, e.g., *nasulat* instead of *nagsulat*. Interestingly, there were also several errors in using the prefix *ni-* instead

of the infix <in>, e.g., *nipaliguan* instead of *pinaliguan*; even if this change is only expected in root words that begin with /l, w, and j/.

Using a picture description and sentence completion task, Segalowitz and Galang (1978) found that 3-, 5-, and 7-year-old children were equally accurate in marking the verb with the agent voice and the patient voice. However, in a similar task, Galang (1982) found that 3-, 5-, 7-, and 8-year-old children were more accurate in marking the verb with the patient voice than the agent voice. She also reported that a few children used only the base form of the verbs instead of the agent voice, and other children often substituted the patient voice marking for the agent voice. For the undergoer voice, there were also instances of the use of the patient voice *-in* instead of the locative *-an* (e.g., *hawakin* instead of *hawakan*).

Using a relative clause imitation task, Tanaka (2016) reported 5-year-olds' productions that had thematic role reversals. For example, because of the incorrect use of the patient voice in (14), the *teacher* becomes the patient to mean that "teacher who is being written by a book." The verb should have been in the agent voice. The opposite substitution was observed more often—the agent voice was incorrectly used for the patient voice in (15). In a picture description experiment, Tanaka also reported 31 of these reversal errors. Such reversal errors were also reported by Bondoc et al. (2018) in children aged 6;4 to 7;2.

- (14) *titser na s<in>u~sulat ng libro
 teacher LIN <PV>IPFV~write GEN book
 "teacher who is being written by a book" to describe a teacher who is writing a book.
- (15) *artista-ng nag-ha~hanap ng titser
 actor-LIN AV-IPFV~search GEN teacher
 "actor who is looking for a teacher" to describe a picture showing a teacher who is looking for an actor.

These errors in naturalistic and structured tasks show that the children have yet to master Tagalog's complex voice marking system. Overall, in their spontaneous productions, children showed errors, which involved voice changes (across the agent and undergoer voices, or within the undergoer voices), and the use of an incorrect marker under the correct voice category. There were also instances of the use of potentive forms instead of dynamic forms. Several of the voice changes seemed to be due to simply omitting a marker or phoneme, which happens to be the form for another voice, e.g., the patient voice *kakainin* to the agent voice *kakain* and the agent voice *magluluto* to the potentive patient voice *maluluto*. Some of the errors show the use of prefixes instead of infixes, e.g., *magsakay* instead of *sumakay* and *nipaliguan* instead of *pinaliguan* (as argued by Oestman 1974). However, others are clearly from the use of the wrong marker, e.g., the patient voice *alisin* instead of the locative voice *alisan*. We currently do not have data on the frequencies of these undergoer markers per se in order to be able to say whether these errors were due to the higher frequency of the produced marker. However, frequencies alone will not be able to explain children's use of markers that cannot be combined.

In the structured tasks, there were also more errors observed in the less frequent agent voice compared to the patient voice in simple sentences. However, this was not the case in relative clauses, where they found more errors in the patient voice than in the agent voice. This finding also seems to be related to frequency, as the agent voice is more frequent in relative clauses, which is probably because of semantic prominence or the preference for the head noun to be an agent (see Tanaka 2016 for a discussion).

3.2. L2 Studies

3.2.1. Nominal Marking

Data involving older L2 Tagalog learners suggest that noun marking accuracy improves with age. Barrios and Bernardo (2012) report that in one group of children aged 7–8 years who were learning Tagalog as an L2 from a Cebuano L1 background, grammaticality judgments of transitive and intransitive sentences and picture descriptions of transitive and intransitive actions showed generally accurate responses. These children and both their parents spoke Cebuano at home, as reported in the parent's self-report. Cebuano

is also widely used in the city and across the entire province. Thus, it can be said that the children were fluent in Cebuano when they were tested in Tagalog. Results of a picture description task show that out of 50 children, very few Cebuano children committed errors in marking the noun in transitive and intransitive sentences. Only one instance of the use of double *ang* was noted in the data (16). There were also only three instances where there were noun marker reversals, such as the use of *ang* for the agent and *ng* for the patient when it should have been the other way around given the voice marking on the verb (17, this instance can also be considered as a voice marking error since if the verb had been in the agent voice, the noun markings would be considered correct).

- (16) *g<in>u~guyod ang babae at lalaki ang trak
 <PV>IPFV~drag SBJ girl and boy SBJ truck
 “The girl and the boy are dragging the truck.”
- (17) *h<in>ila ang babae at lalaki ng trak
 <PV>PFV.pull SBJ girl and boy GEN truck
 “The girl and the boy got pulled by the truck” to describe a picture showing a girl and a boy pulling a truck.

Nine instances of the use of the marker *sa* (also a non-subject marker in Cebuano) to mark the patient were found in the data (18). Although *sa* is a non-subject marker, the constructions require an *ng* non-subject marker instead. It is important to note that in Cebuano, the marker *sa* functions like the Tagalog *ng*, indicating that the error observed in the experiment could be due to the transfer of L1 properties to the L2.

- (18) *b<in>asag ang bote sa lalaki
 <PV>PFV.break SBJ bottle DAT man
 “The bottle was broken on the man” to describe a picture showing a man breaking a bottle.

By the age of 7–8 years, Cebuano children who are learning Tagalog as a second language made minimal errors in Tagalog noun marking. L2 data suggest that accuracy in noun marking develops with age; that is, by the time Cebuano children reach the primary grades, they may have already mastered the voice system in Cebuano such that when they begin to learn Tagalog formally in school, assigning markers to nouns would not be such a problem for them.

This is not the case for children who are learning Tagalog as an L2 from an L1 background that is typologically different. In Chabacano, the intransitive subject has the same grammatical relation coding as the transitive subject, while the transitive object is distinct. Consider these two sentences: *ya kay el muher* “the woman fell” and *ya kome el muher kunel mangga* “the woman ate the mango”. In both the intransitive and the transitive sentences, the intransitive subject and the transitive subject *el muher* “the woman” comes from the nominative case, while the transitive object *kunel mangga* “the mango” comes from another—the accusative case. Nolasco (2005) describes Chabacano to be morphologically accusative. Barrios and Bernardo (2012) report that Chabacano L1 learners exhibited several noun marking errors in picture descriptions, and they significantly underperformed in grammaticality judgments of sentences in transitive and intransitive conditions compared to the Cebuano group of children. These errors were reported to be due to negative transfer from their accusative L1 to the L2, which has a symmetrical voice system.

A qualitative examination of the patterns of incorrect noun marking combinations in the Chabacano picture description data recorded for both intransitive and transitive constructions reveals patterns of noun marking use that are different from the Cebuano data. Noteworthy is the error pattern of using a double *ang* marking for both arguments in the transitive sentence, which (19) occurred in 20 instances. Here, we see that both the agent and the patient are marked by *ang*. The use of *ang* to mark both arguments is also seen in (20), which has a patient-initial order.

- (19) *b<in>asag ang bata ang bote
 <PV>PFV.break SBJ child SBJ bottle
 “The child broke the bottle.”

- (20) *b<in>a~bali ang papel si Al-Al at si babae
 <PV>IPFV~break SBJ paper SBJ Al-Al and SBJ girl
 “Al-Al and the girl are breaking the paper.”

There were also a number of double *ang* errors in the agent voice such as **nagititira ang lalake ang bola* “the boy was throwing a/the ball” (twenty-one instances), **humihila ang kotse si Mark at si Jennylyn* (nine instances), and **naghala si Jemelyn at Mark ang kotse* “Jemelyn and Mark pulled the car” (one instance). In these examples, the nominative case marking is incorrectly assigned to both subject and non-subject nouns. The Cebuano-speaking children did not exhibit such an error.

3.2.2. Voice Marking on the Verb

Older children acquiring Tagalog as an L2 generally used inflected verbs in picture descriptions. Among the Cebuano participants, only one instance of uninflected verb use was noted, as in the example **pindot ni Jennylyn ang doorbell* instead of *pinindot ni Jennylyn ang doorbell* “Jennylyn pressed the doorbell”. Another instance showed the use of the inflected Cebuano form *gipahawa* “make go away” instead of the Tagalog *pinaalis*. Meanwhile, Chabacano-speaking children also inflected Tagalog verbs, which is remarkable since their L1 verbal system lacks voice marking. Tense and aspect in Chabacano are indicated by three pre-verbal markers—*ya* (past/perfective), *ta* (imperfective, present, progressive, habitual or iterative actions), and *ay* (future) (Rubino 2008). To compensate for a lack of voice marking on the verb, Chabacano employs the *man* affix and other auxiliary verbs such as *ase* “make”, *manda* “order”, and *dale* “give” to produce new verbs (Nolasco 2005), as well as the periphrastic construction through the stative verb *puede* “can” to express the potentive mode (Rubino 2008). Picture descriptions in Barrios and Bernardo (2012) show that Chabacano children inflected their verbs, albeit incorrectly, most of the time. The affixes used were *nag-* (*nag-* in the perfective aspect), *<in>*, and *<um>*. The prefix *nag-* appears to be the most frequently used affix on the verb describing a transitive action, as shown in a good number of responses (e.g., 21). The prefix *nag-* was also attached to root verbs in the L1 (22) and root verbs from English, resulting in borrowings, such as (23). One participant used *nag-* and the suffix *-an*, resulting in a further error: both the agent voice and patient voice markings were used in the same verb (24).

- (21) *Nag-su~sunog ang babae at lalaki ang libro
 AV-IPFV~burn SBJ girl and boy SBJ book
 “The girl and the boy are burning the book.”
- (22) *Nag-rompe ang papel ang lalaki at ang babae
 AV-PFV.tear SBJ paper SBJ boy and SBJ girl
 “The girl and the boy tore the paper.”
- (23) *Nag-erase ang bata ang blackboard
 AV-PFV.erase SBJ child SBJ blackboard
 “The child erased the blackboard.”
- (24) *Nag-bu~buka~an ang pinto si Jennylyn
 AV-IPFV~open-LV SBJ door SBJ Jennylyn
 “Jennylyn is opening the door.”

The use of the infix *<in>*, such as (25), shows a reversal of the arguments such that it is the patient or the object that causes an action on the agent. We see quite a number of verbs with the infix *<in>*, which were used incorrectly because of the reversal of the noun markers. These can also be considered noun marking errors instead.

- (25) *T<in>u~tulak sila ng dyip
 <PV>IPFV~push 3.PL.SBJ GEN jeep
 “They are being pushed by the jeep” to describe a picture showing that a jeep is being pushed.

The infix *<um>* appeared only three times in the data, suggesting that it is not as preferred or as accessible as *nag-* and *<in>* (26). Interestingly, in the agent voice, native Tagalog speakers would not inflect the verb “sunog” in (26) with *<um>*, but with *nag-* instead.

- (26) *S<um>unog ang isang bata ang aklat
 <AV>PFV.burn SBJ one-LIN child SBJ book
 “The child burned a book.”

Five instances in the Chabacano data also show the use of the verbal prefix *na-* attached to the root of the transitive verb, as shown in (27). The resulting verb changes the meaning of the sentence into something that is unintentional or unexpected and does not capture the action as depicted in the stimuli. Given the marking of the nouns, we surmise that the child may have intended to use the prefix *nag-* but instead used *na-*, resulting in a change of voice from the agent voice to the potentive patient voice.

- (27) *Na-punit ako ng papel
 POTPV-PFV.tear 1.SG.SBJ GEN paper
 “I was torn by the paper” to describe a picture showing a child tearing a piece of paper.

Finally, there were also errors that were innovative or idiosyncratic, specifically the use of new affixes or a combination of affixes. In (28), the child appears to use a conveyance voice marker instead of the patient voice infix *<in>*.

- (28) *I-ni-sunog ang bata ng isang libro
 CV-PFV.burn SBJ child GEN one-LIN book
 “The child was burned a book” to describe a picture showing a child burning a book.

Overall, picture descriptions by 7–8-year-old Cebuano and Chabacano children acquiring L2 Tagalog reveal that verb inflection is evident in picture descriptions of L2 acquirers of Tagalog. Very few of the participants produced descriptions of a transitive or an intransitive action from picture stimuli with no inflection. This suggests that as children age, their ability to use affixation is developed as well. Next, the kinds of affixes used on the verb varied significantly on the type of L1 background. The kinds of affixes used on verbs were more varied among L2 acquirers of Tagalog whose L1 is typologically different from L2, compared to L2 acquirers of Tagalog whose L1 is typologically similar to Tagalog. Lastly, children whose L1 differed typologically from L2 also produced more errors in verbal marking, compared to their counterparts.

This L2 study shows that older school-aged children generally demonstrate better accuracy in marking the arguments, particularly in picture descriptions of transitive and intransitive actions. At 7–8 years, Cebuano L1 children produced very minimal errors, such as the use of *ang* to mark both arguments and very few reversals of *ang* and *ng* in the patient voice. There were also minimal instances where the genitive case marking for the subject in the patient voice was *sa* instead of *ng*. However, Cebuano *sa* functions like the Tagalog *ng*, so only the form of the noun marker is incorrect and not its case. In verbal inflection, these Cebuano children generally inflected their verbs with voice. There were very few times where errors occurred in both noun marking and verb inflection, supporting the finding that morphological accuracy increases as age increases, as reported in cross-linguistic studies focusing on inflectional morphology (Vihman et al. 2021; Granlund et al. 2019).

The results from the same study revealed a contrast among a group of 7–8-year-old school-aged children with comparable picture naming abilities as the Cebuano group but who came from a typologically accusative L1 system. They consistently underperformed in both grammatical judgments and picture descriptions of transitive and intransitive actions. If errors drop with age, they are expected to perform not too differently from their Cebuano peers and with high accuracy, but data show that these Chabacano-speaking children overgeneralized the marker *ang*. These double *ang* errors were observed in both the agent and patient voices. In verb inflection, they were more productive than their Cebuano peers, but they often used affixes incorrectly. They used the affix *mag-* very frequently on transitive verbs, possibly as a result of their exposure to the use of *mag-* verbs in school. They also resorted to borrowing, using the affixes *mag-*, *<in>*, and other affixes in their resources to attach to a root verb from Tagalog, English, or from their L1, sometimes resulting in creative constructions of the verb. The data suggest that Chabacano children attempt to use verb inflections incorrectly, as these interact with the voice that is absent in their L1.

Table 2 summarizes the nominal and verbal marking errors in both L1 and L2 Tagalog.

4. Discussion

Data from sentence completion experiments focusing on word order acquisition show that L1 Tagalog-speaking children commit errors in case marking of nouns when describing transitive actions; and unsurprisingly, the number of these errors drops with age (Garcia et al. 2018; Garcia and Kidd 2020), which is in line with findings in other languages (Granlund et al. 2019; Vihman et al. 2021). Interestingly, most of the 3-year-olds' errors consisted of omitting at least one noun marker, but most of the errors of the 5-year-olds and the few from the 7-year-olds were reversals of the noun markers (i.e., the use of the *ang* for *ng* and vice-versa). In L2 acquisition of Tagalog, 7–8-year-old Cebuano learners of Tagalog show high accuracy in noun marking, similar to their 7-year-old L1 speaking counterparts (Barrios and Bernardo 2012). These L2 speakers committed errors only on the form of the marker per se; that is, they tended to use *sa*, which is the Cebuano equivalent for the Tagalog genitive *ng* (for example, *binasag ang bote sa lalake* “the boy broke the bottle”). In contrast, this is not what was found among L2 learners of Tagalog whose L1 is typologically different from Tagalog. A group of 7–8-year-old L1 Chabacano-speaking children used *ang* for both arguments instead of the more typical pattern from younger L1 speakers, which concerned omitting one marker.

What appears to be a common commission error between young L1 acquirers of Tagalog and L2 learners of Tagalog from a typologically different L1 background is the overgeneralization of the *ang*, as well as the reversal of *ang* and *ng* markers. Additionally, the studies show that errors seem to be related to voice. Specifically, noun marker reversals were observed more in the agent voice than in the patient voice. Moreover, Garcia et al. (2018) found that in sentence completion experiments where children were provided with a voice marked verb, 5- and 7-year-olds incorrectly repeated the voice marked verb in 7% and 8% of the total trials, respectively; and more importantly, the majority of these incorrect repetitions were repeating an agent voice verb as a patient voice verb. With regard to verbal morphology, L1 Tagalog-speaking 2–4-year-olds produced not only non-voice-inflected verbs or root verbs (i.e., without voice nor aspect), but also errors, such as the use of two markers that cannot be combined or an incorrect form of the voice marker (i.e., use of the prefix agent voice marker instead of the infix agent voice marker based on Garcia's (2021) data). It seems to be the case that some of the voice changes were simply due to the other voice having fewer morphemes, which means that these are omission errors instead. Meanwhile, L2 learners of Tagalog consistently used inflected verbs in the production tasks (note, however, that they were older), whether or not these were correct. As they grow up, learners appear to overcome the lack of sophistication in their production of inflected verbs and they tend to use inflection even if these are incorrectly used, notably in the L2 group whose L1 verbal system is simpler than L2.

The current findings seem to support the single-route approach to morphological acquisition (Bybee and Slobin 1982; Bybee and Moder 1983; McClelland and Patterson 2002; Tomasello 2009). In particular, for noun marker reversals, one can argue that because of the high frequency of the undergoer voice noun mapping (i.e., the subject is not an agent), children form an *ng* agent *ang* patient pattern, resulting in errors when they are forced to use the agent voice. Younger L1 Tagalog-speaking children's use of double *ang* errors also seems to be due to frequency. *Ang* is the most common noun marker given that it is also present in intransitives where there is only one argument. This is in line with studies showing that commission errors in noun marking involve the replacement of low-frequency target forms with their higher-frequency forms (Dąbrowska 2008; Dąbrowska and Szczerbiński 2006; Dąbrowska and Tomasello 2008; Savičičūtė et al. 2018). Gonzalez (1984) also surmised that the 2;8 children in his sample were possibly overwhelmed by so many rules at one time in their proper sequence, such that the children resorted to the most common noun marker *ang*.

These findings are in line with evidence from recent cross-linguistic studies in Estonian, Finnish, Lithuanian, and Polish (Engelmann et al. 2019; Granlund et al. 2019; Savičiūtė et al. 2018), which support an analogy-based connectionist or exemplar approach. These studies provide support that input properties, specifically word form frequency and phonological neighborhood density, affect morphological inflection accuracy among children. Moreover, these studies on morphologically rich languages do not support the rigid rule-based view. For example, responses from Estonian-speaking children did not show a reliance on a default pattern among many viable declension classes (Vihman et al. 2021). For Tagalog, however, further research and analyses are needed to establish the link between type frequency and phonological neighborhood density to errors in morphological inflection. Currently, we only have a broad count for the frequency of the agent voice and undergoer voices in general (and, therefore, whether *ang* is usually a subject or not). However, we do not have counts of which lexical verbs usually occur with a particular voice. Additionally, we do not have frequencies of how often each particular affix occurs in verbs. Therefore, we cannot say whether these errors were only happening in a particular set of verbs (e.g., phonologically similar verbs, or highly frequent verbs). Aside from corpus analyses, more controlled experiments should be performed in the future, such as modulating the age of the children, phonological density, and type frequency, as was performed in other studies (for example, Engelmann et al. 2019; Granlund et al. 2019; Savičiūtė et al. 2018; Vihman et al. 2021).

Regarding the difference in the performance of the L2 speakers of Tagalog, we observed that children whose L1 and L2 are typologically different demonstrate more difficulty in nominal and verbal marking compared to L2 learners, whose L1 shares the same typological structure as L2. Given that the Cebuano children and the Chabacano children were comparable in vocabulary scores and age and only differed on L1 background, we can probably point to a negative transfer of the L1 accusative background to account for the errors in the Chabacano group. As there is no voice marking of the verb in Chabacano and there is no need for mapping the voice marking on the verb and the noun markers, it is probably harder for L1 Chabacano children to learn this Tagalog system. Notwithstanding, the data points are quite limited to make a conclusive claim. More studies and more data on the acquisition of L2 Tagalog are needed.

These analyses of existing data on child language acquisition of noun and verbal markings in L1 and L2 Tagalog yield interesting patterns, such as those discussed earlier, but they also reveal gaps in the literature. First, there is an obvious lack of longitudinal studies involving children acquiring a first language. Most of the data come from elicitations through experimental studies or naturalistic data recorded in short hours or periods. In his review, Gonzalez (1986) emphasized the need to conduct studies following a longitudinal design to support cross-sectional studies involving specific language groups with varied sample sizes.

Second, the need for day-long recordings to develop a corpus or corpora of Filipino child language acquisition in Tagalog and other Philippine languages is necessary in order to complement existing measures and data. Current literature featuring long-format speech environment recordings offers valuable data on child and adult communicative behavior as participants go about in daily life using devices, such as the LENA recording device (Casillas and Cristia 2019).

Third, there is a growing phenomenon of children residing in the metropolis, particularly in Metro Manila and many cities across the archipelago, who are acquiring English as a first language and not Tagalog or the nominated mother tongue in the region. Gonzalez observed in 1989 that English is acquired as an L1 in Metro Manila by a small but stable minority of households that belong to the middle and upper socioeconomic classes, and that this number is increasing (Gonzalez 1989). The blended modality of schools at present has provided us the opportunity to observe this phenomenon among young school-aged children in a Metro Manila school. Many young school-aged learners are observed to be more dominant in English and are struggling in the Tagalog subject and in subjects

where Tagalog is the medium of instruction, such as Araling Panlipunan (social studies). Children's acquisition of L2 Tagalog from an L1 English background would be a rich area for study.

Finally, as mentioned in the previous subsection, more experimental studies focusing on commission errors can be conducted more systematically on early acquirers of Tagalog. As of now, the error patterns appear to be similar, but the methods through which they were obtained are different. There is also a need to conduct more studies on the acquisition of inflectional morphology among L2 acquirers of Tagalog.

5. Conclusions

This paper discusses patterns of Filipino children's commission errors gathered from experimental and observational studies on both L1 and L2 acquisition of Tagalog. Children who are acquiring Tagalog as their first language and as a language other than their mother tongue demonstrate production errors in nominal marking and verbal marking, particularly the overgeneralization of the *ang* marker, the reversal of *ang* and *ng* markers, and the use of incorrect voice markers. Linguistic typology also appears to affect proficiency in these areas. These error patterns provide insights into how children learn Tagalog's complex grammatical system and seem to support single-route approaches to inflectional morphology acquisition. Further studies on language errors among wider multilingual contexts in the country, including the acquisition of Tagalog from a dominant L1 English background, could provide greater insights.

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Notes

- ¹ AV signifies the agent voice, PV the patient voice, LV for locative voice, CV for conveyance voice, POTPV for potentive patient voice, SBJ for subject, GEN for genitive, DAT for dative, 1 first person, 2 second person, 3 third person, SG singular, PL plural, EX exclusive, INF infinitive, PFV perfective, IPFV imperfective, LIN linker, REC reciprocal, and PRX proximal.
- ² Filipino, which is primarily based on Tagalog, is constitutionally mandated as the Philippine national language (Eberhard et al. 2022). In the Philippine educational system, the language is referred to as Filipino.
- ³ As pointed out by an anonymous reviewer, it could be the case that the noun markers were not incorrect, but a conjunction was simply missing given the reciprocal verb. However, based on the other examples in the paper, the picture probably depicted only one entity performing the action, instead of both policeman and boy; so the verb should probably not have been in the reciprocal form. Unfortunately, we were not able to access the actual stimuli.
- ⁴ Considering the data from both experiments in Garcia and Kidd (2020), it does not seem to be the case that there were more double-*ang* than double-*ng* errors in general. However, it seems that there were slightly more *ang*-errors in the patient voice than in the agent voice (Exp. 1: 5% of total productions in AV were double-*ang*, while it was 10% for PV; Exp. 2: 4% double-*ang* in AV, 6% in PV). Then again, the bulk of the errors in the agent voice were reversal errors, i.e., use of *ang* instead of *ng* and vice versa; and overall, there was also higher accuracy in noun-marking in the patient voice than in the agent voice. In L2, there were considerably more double-*ang* errors by the Chabacano-speaking children than their Cebuano comparison group as discussed in Section 3.2.
- ⁵ The authors counted the number of morphemes in 100 intelligible utterances produced by the children from the 30th minute mark of the recording or from the whole recording, if needed. Crucially, in this calculation, even utterances without verbs were included.

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