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DEPARTMENT OF MODERN LANGUAGES

THE ACQUISITION OF ENGLISH MORPHO-SYNTAX BY INDONESIAN-SPEAKING CHILD L2 LEARNERS

A longitudinal case study

BY

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Abstract

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This dissertation is a longitudinal case study of two child L2 learners of English. The main purpose of the study is to investigate how the absence of six inflectional morphemes in L1 would affect the production of relevant properties in learner's L2. Spontaneous data covering a period of 12 months were collected from two different subjects who were 2;3 and 8;4 years old at the commencement of the study.

The main theoretical issues addressed in this dissertation include morphological and syntactic interface, particularly with regards to missing surface morphological inflections. In addition, the issue of L1 influence in L2 acquisition is also thoroughly evaluated. Research findings reveal that the two child L2 subjects frequently produce errors which reflect problems with the mapping of surface morphology, consistent with the Missing Surface Inflection Hypothesis (Prévost & White, 2000; Haznedar & Schwartz, 1997). Data also expose that errors continue to appear although the subjects already show a certain extent of syntax knowledge. With regards to L1 influence, it has been found that L1 plays an important role in influencing the way learners apply certain rules in L2 production. In particular, this is reflected in the error patterns they produce with regards to morphological properties that are not overtly exhibited in their L1 system.

The results of the study provide an important contribution to the existing findings in the field, especially within the area of inflectional morphology. In particular, the study presents a new set of data from child L2 learners who come from L1 backgrounds that has rarely been discussed or researched before. It also strengthens currently existing proposals supporting *syntax-before-morphology* view (i.e., Haznedar & Schwartz, 1997). Furthermore, findings of the present study reinforce the general assumption that the absence of certain morphological properties results in problems with the production of corresponding features in the target language.

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Declaration of Authorship

MASRIZAL

THE ACQUISITION OF ENGLISH MORPHO-SYNTAX BY INDONESIAN-SPEAKING CHILD L2 LEARNERS

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

October 30th, 2019

Acknowledgements

To my life-coach, my father Mahmud Harun, and my mother Fauziah: because I owe it all to you. Many thanks!

It all began in a beautiful autumn day in Southampton, when I realised that I was at the starting point of the most advanced level of education everyone would be undertaking. For me, pursuing a this degree is not just a career requirement, but it is also an important and rare opportunity to improve self capacity and meet a large number of qualified individuals in the academia. Yet, it did not take a long time for me to realize that the road ahead of me would be one of the most challenging experiences of my life. As I am typing this paragraph, this particular project took approximately 3.5 years, and I am now approaching the end of it to begin a new phase of the future.

Many people have been involved along the way, and I would like to announce special recognitions for their involvements in the creation of this masterpiece. Firstly, I would like to express my sincere gratitude to my main supervisor Prof. Roumyana Slabakova for her continuous support of my study, motivation, immense knowledge, and her patience in reading countless drafts and offering valuable suggestions. I would not have continued and finished this project without her guidance. Special appreciation is also due to my second supervisor, Dr. Glynn Hicks, for his critical ideas and encouraging feedback during the initial stage of my study.

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This thesis is of course a special present for my patient and encouraging wife, Izzatil Isma, and our two little prince(s), Shofie and Qaeshar. Without their patience and encouragement, this project would have been extremely difficult to accomplish. Last but not least, I would like to thank my entire family: my parents in law and to my brothers and sisters (and in laws) for supporting me spiritually throughout the entire process of this work and my life in general.

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Chapter 1: Introduction

1.1 Background of the Problem

Second language acquisition (SLA), whether in naturalistic, instructed, or mixed settings (Ellis, 2008), has been part of human activity for a long time and is becoming more critical since the need to master a second and additional language is also increasing. Currently, billions of people around the world are born and live as bilinguals or multilinguals, outnumbering those who only hold monolingual status. According to Doughty and Long (2008), for example, around 1-2 billion people speak and use English as their official second language in their respective countries. This far surpasses the number of English native speakers who are only around 300 - 400 million around the world.

This fact of bilingualism has given impetus to different studies investigating how humans interact with each other in different languages. As a result, linguists have developed an area of research which is specifically directed to understanding how the brain works in regards to language learning and acquisition. Through different approaches, they have tried to study how children and adults acquire languages both naturalistically and through explicit instruction. Cognitive and sociocultural approaches are two central viewpoints that aim at describing how a language is acquired and developed by human beings. Cognitive approaches to SLA discuss the processes in the human brain that make language acquisition possible. An example of a topic in this regard is how paying attention to a language affects learners' ability to learn it. In opposition to cognitive approaches, sociocultural approaches tend to view language acquisition from a social context or perspective. They specifically deal with how different factors such as connection to an L2 community and gender influence language acquisition.

One of the well-established approaches to SLA is known as the generative approach, whose development was a result of Noam Chomsky's (1981b) initiative of generative linguistics. In his older publications, Chomsky (1957, 1959) argued that *"only the study of the linguistic system in the mind/brain of individual speakers can lead to an explanation of the most striking property of human language, its discrete infinity, using a finite number of stored elements"*. This then leads to an argument by many proponents of the generative approach stating that the syntactic knowledge acquired by language learners is underdetermined by the input (Eisenbeiss, 2009).

In the past few decades, substantial attention has been directed toward the investigation of child second language acquisition. It is particularly interesting to study because such a study covers all children who learn a language as either a monolingual, simultaneous, or child L2 learner. Besides, there will be many more properties to study in child L2 rather than in the case of monolingual children, as studies have shown that bilinguals tend to lag behind monolinguals due to variability issues (Hoff and Core, 2013). From a more general context, Lakshmanan (1993), for example, studied Marta, a Spanish-speaking girl from Puerto Rico who moved to the US at the age of four, to see whether her L2 English data mirrored the early development of L1 English. As a result of her study, Lakshmanan presented three types of evidence with the purpose of showing that, unlike various claims for child first language acquisition, in child second language acquisition, non-thematic properties (i.e., case and Infl. systems) can be found at a very early stage.

Numerous studies looking at L1 and L2 acquisition have long contributed to the literature and developed new directions in language acquisition research. In the following section, some of the earlier works relevant to the present study will be presented. This will be followed by a discussion of how these studies have contributed to the existing field. To begin with, we will discuss the study of Adam, Eve, and Sarah by Brown (1973), which pioneered many subsequent studies in child L1 and L2 acquisition. In their five-year longitudinal case study, Brown and his team studied these three American children at the initial stage of their first language acquisition, when multi-word utterances were beginning to appear. This study is often considered pioneering research and recognized as the starting point for morpheme order acquisition research (Goldschneider & DeKeyser, 2001).

Brown and a team of research assistants recorded the language production of the three subjects and transcribed the audio files of a half-hour to two-hour long recording sessions, consisting of an interaction between the child and interlocutors. They found that the children's speech developed at different rates for a number of reasons. However, Brown established that the acquisition orders of fourteen functional morphemes were amazingly consistent.

To describe the children's linguistic development, Brown counted the suppliance of each morpheme in obligatory context. One point was given when the morpheme was properly supplied, while the score was zero when either not supplied or incorrectly supplied. It has been suggested that 90% of correct suppliance can be considered sufficient for complete acquisition. With this data, Brown was able to analyze the acquisition sequence of

each morpheme by each child. The results revealed that the acquisition order of each morpheme was remarkably stable.

Brown's study will be used as a point of reference in order to see whether particular morphemes of the aforementioned grammatical properties are correctly supplied or not. This order of acquisition, which indicates a pattern of cognitive, social, and learning growth (Chen, 2016), will be used to compare the pattern of morpheme acquisition in English as a first language and as a second language in the present study. Although not identical, the writer believes that Brown's study provides a lot of useful references and background information in regards to examining production data collected from young child L2 or bilingual learners.

Following Brown's study, Dulay and Burt (1974) posed a new question: whether there was a common sequence with which children who acquire English as an L2 learn the same morphemes. Their initial prediction was that the sequence, if found in L2 children, would be distinct from what Brown found in his L1 children. Approximately 151 Spanish-speaking children (5-8 years) who lived in California and New York were involved in the study.

Unlike Brown's study, which relied on spontaneous data collected from naturalistic interactions, Dulay and Burt used the Bilingual Syntax Measure, consisting of 7 cartoon pictures and 33 questions, as the instrument to elicit data from their participants. Dulay and Burt adopted the methods of analysis from Brown's L1 research and used the scoring of each obligatory context for each grammatical functor. The score was then calculated as a ratio of the sum of the scores for each obligatory occasion/context of that particular morpheme over the total number of obligatory occasions for that grammatical morpheme, or *functor* in Brown's (1973) and Dulay and Burt's (1974) term, across the whole group (Goldschneider & DeKeyser, 2001). The results of their study revealed that there were no differences in how accurately each group of children used the functors. They found that the overall rank order of the functors was similar across the groups (Dulay and Burt, 1974). As predicted, it was discovered that the order of acquisition was different from the one proposed by Brown (1973). One of the reasons for the different results could be because Dulay and Burt did not distinguish between articles *a* and *the* in scoring (Luk and Shirai, 2009).

In a more specific context, linguists have attempted to investigate how different environmental factors influence L2 acquisition. In particular, many studies have tried to look at whether quality and quantity of input are determining factors in language acquisition. Paradis (2009), for instance, has investigated the role of home input factors in language acquisition. A test on vocabulary and grammar indicated that bilingual and monolingual

children perform similarly on the dominant language that they spoke at home, showing that home input played a specific role in language acquisition. Other studies also provided additional data and findings in an attempt to prove whether input or exposure and other factors such as non-native input could predict success in learning a language (i.e., Place and Hoff, 2011; Pires and Rothman, 2009; Dominguez, 2009)

Furthermore, a study by Haznedar (1997b), investigating the acquisition of English by a Turkish child, Erdem, has been regarded as one of the pivotal studies in child L2 acquisition. Findings in this study indicate that L1 knowledge is being used in L2 production and that functional categories – *parts of speech that provide inflectional or grammatical information, such as determiners and auxiliaries* – are activated in child second language acquisition. Later, Prévost (1997) also investigated whether the Root Infinitive stage characterized second language acquisition. He found that the distribution of finite and non-finite verb is structurally determined in second language child grammar. The study conducted by Unsworth (2002) is another example of a relevant contribution in child L2 acquisition research. It was done to investigate the acquisition of Dutch by child and adult L1 speakers of English. This was then expanded to a more extensive study of three different groups of language learners (non-native L2 children, L2 adults, and L1 children) with a specific focus on direct object scrambling in Dutch (Unsworth, 2005).

This dissertation continues this line of research by examining the acquisition of English morphology and syntax knowledge by child L2 learners in a naturalistic context. It will seek to investigate how particular English morphemes, *tense and agreement marking, plural –s, and copula be*, are acquired and produced by Indonesian child L2 learners of English, considering the absence of these properties in their native language. Two research participants, Mawar and Melati (two and nine years old at the commencement of the study, respectively), were involved in the research. Extensive and detailed data about their language production have been collected through 12 recording sessions conducted for 14 consecutive months. In particular, the study is attempting to address recent debates arguing that L2 learners possess unconscious knowledge of L2 grammar systems, but there may be a problem with the realization of surface morphology (Haznedar, 2003). It will also try to provide a different perspective on how we view the role of L1 in the process of L2 acquisition. A case-study has been used to examine production data collected longitudinally from the two research subjects. The entire dataset was carefully analysed and discussed to answer the research questions.

To the best of my knowledge, studies in the area of language acquisition have discussed the acquisition of language both by monolingual and bilingual children. In the case of L2 acquisition, when available, many of the studies have placed a particular focus on English and most European languages as the context and scope of the study. There has also been only minor coverage of investigation of missing morphological inflections within specific accounts of morphological variability that oppose other views such as *'impairment'* in the interlanguage syntax. Morphological studies in such a context have also rarely been found with any specific involvement of L1 Indonesian speakers who are learning English as a second or foreign language. For this reason, the author personally saw this as a significant gap for further investigation, and hopes that any findings from the present study will contribute to informing existing debates and, in particular, will assist Indonesian learners of English, both as a second or foreign language. By writing this dissertation, the writer hopes to develop personal capacity and knowledge about the relevant topic in particular, and a general understanding of the study of second language acquisition.

Following these earlier works, a large number of newer studies started to fill the gap of relevant research, especially in investigating child L2 acquisition in a broader context. Many have covered mainly popular languages (e.g., European languages), but few have revealed data about languages spoken beyond this area. The present study attempts to investigate the process involved in the acquisition of English by Indonesian L1 children, a context which, to date, has been only rarely investigated. In particular, it will try to reveal facts behind the variable use of morphological inflections by Indonesian learners of L2 English. The study involved a battery of longitudinal data collection for 12 months, producing a large number of transcripts from which learners' acquisition patterns have been carefully observed.

With unique and exciting linguistic characteristics, this study is expected to be an essential contribution to existing debates in the literature. In particular, the absence of overt inflection of relevant morphemes in Indonesian is expected to affect how such properties are morphologically inflected in L2 English. The selection of subjects from two different age levels has been intentionally conducted to collect different sets of data from learners of varying input and exposure to the target language. Besides, literature also suggests that learners who are exposed to L2 at the same time (simultaneous bilinguals) will be different from those who are exposed to L2 after their L1 acquisition has been accomplished (successive/consecutive bilinguals). Therefore, the author expects to see different patterns of L2 production in the data from the two subjects involved in the present study. A detailed and further discussion about this will be presented in chapter four.

1.2 The Outline of this Dissertation

This thesis is presented chronologically in the following way. *Chapter one* provides an introduction and general overview of the study. Subsequently, *Chapter two* provides a literature review of second language acquisition theories and developmental sequences, particularly in Second Language Acquisition (SLA). It will also specifically discuss the process of morphological inflections, discussion of which is particularly relevant to the present study. *In Chapter three* a comprehensive overview of morphological inflections processes in English and Indonesian, accompanied by relevant examples of how these processes are articulated in daily uses, will be presented. Methods and methodological issues about the current study will be introduced and elaborated in chronological order in *chapter four*. This will include detailed information about research design, participants, data collection process, analysis, and justification of some technical works involved. Besides, some preliminary findings pertinent to a certain discussion will also be presented in this chapter.

Chapter five will cover the data and research results. In-depth discussions about the properties currently being investigated, namely third person singular (3sg) agreement markings *–s*, past tense markings, plural *–s*, and copula/auxiliary *be,* will be provided. To systematically present our research results and analysis, this particular chapter will cover these properties separately, but the discussions for each subject (Mawar and Melati) will be intentionally separated. The findings will then be compared to the results of existing research of child and adult bilingual L2 acquisition in *Chapter six,* where the answer to the research questions will be provided. In this particular chapter, I will discuss the findings and relate them to the available proposals concerning environmental factors in L2 acquisition, as well as variable use of morphological inflections by child L2 learners. We will then conclude whether our findings apply to the previously introduced accounts. Finally, conclusions, a summary of main findings, implications, and limitations of the research and suggestions for further studies will be systematically presented in *Chapter seven.*

Chapter 2: Literature Review

2.1 Introduction

Current studies in generative linguistics have undoubtedly brought new findings and influences to the study of first language (L1) and second language (L2) acquisition. In the past decades, the number of studies in this area has grown significantly, especially those with specific and advanced questions. As the present study investigates the acquisition of English as a second language, I will present some background information on child L2 acquisition, including early and recent studies in the field.

This chapter will have four major sections. Section 2.2 will provide a historical review of the development of L2 acquisition studies. In this section, I will also present a discussion of morpheme order studies along with early and recent studies on child L2 acquisition in this context. Following this, a discussion of L1 influence in child L2 acquisition will be presented in detail. I will then introduce the generative framework, with a particular focus on morphological variability covering the Missing Surface Inflection Hypothesis. In this particular section, I will present a number of studies that are relevant to the theory, followed by a discussion on how these studies have supported the theory and expanded the field of SLA research. The final section will cover a discussion about hypothesis and predictions of the present study, concluded by the summary.

2.2 Development of L1 and L2 Acquisition Studies

The study on first and second language acquisition (SLA) has expanded very quickly since it became a special interest in the field of applied linguistics, which at the time was primarily driven by theories from linguistic structuralism and behaviourist psychology (Pica, 2005). One of the very first approaches that came to the surface was that of Lado (1957), namely Contrastive Analysis, which basically involves the comparison between L1 and L2. Following this, the field of language acquisition research has broadened significantly with the emergence of new and more empirical studies.

In early 1970s, the study of Adam, Eve, and Sarah pioneered many subsequent studies in child L1 and L2 acquisition. In their five-year longitudinal case study, Brown (1973) and his team studied three American children at the initial stage of their first language acquisition, when multi-word utterances are beginning to be produced. This study is often considered as pioneering research and recognized as the starting point for acquisition order research (Goldschneider & DeKeyser, 2001).

In their study, Brown and a team of research assistants recorded language production of every single child and transcribed audio files of half-hour to two-hour recording sessions consisting of an interaction between the child and interlocutors. They found that the children's speech developed at different rates due to a number of different reasons. However, Brown found that the acquisition orders of fourteen morphemes, as detailed in the following table, were amazingly consistent.

Table 1: Acquisition order of morpheme for English as L1 (Brown, 1973).

Order	**Morpheme**
1	Present progressive (verb + *-ing*)
2/3	in, on.
4	Plural *-s*
5	Past irregular (i.e. *ran, saw, went*)
6	Possessive *-'s*
7	Uncontractible copula (*is, am, are, was*)
8	Articles (*a, the*)
9	Past regular *-ed*
10	Third person singular regular *-s*
11	Third person singular irregular (i.e. *does, has*)
12	Uncontractible auxiliary (*is, am, are was*)
13	Contractible copula (i.e I'*m*, she'*s*, they'*re*)
14	Contractible auxiliary (i.e. I'*m* going)

In this particular study, Brown counted the suppliance of each morpheme in obligatory context. One point was given when the morpheme was properly supplied, while the score was zero when either not supplied or incorrectly supplied. With this data, he was able to analyze the acquisition sequence of each morpheme by each child. The results revealed that the acquisition order of each morpheme was remarkably stable.

For the current research, the results of Brown's study will be used as a point of reference to see whether particular morphemes of the aforementioned grammatical properties are correctly supplied or not. This order of acquisition, which indicates a pattern

of cognitive, social, and learning growth (Chen, 2016), will be used to compare the pattern of morpheme acquisition in English as a first language and as a second language. We are particularly interested to see whether our research subjects' SLA processes follow acquisition patterns similar to those suggested by Brown.

Following Brown's study, Dulay and Burt (1974) wondered whether there was a common sequence with which children who acquire English as an L2 learn certain structures (as in Goldschneider & DeKeyser, 2001). Their initial prediction was that the sequence, if found in L2 children, would be distinct from what Brown found in his L1 children. Approximately 151 Spanish-speaking children (5-8 years) who lived in California and New York were involved in the study.

Unlike Brown's study, which relied on spontaneous data collected from naturalistic interactions, Dulay and Burt used the Bilingual Syntax Measure, consisting of 7 cartoon pictures and 33 questions, as the instrument to elicit data from their participants. Dulay and Burt adopted methods of analysis from Brown's L1 research and used the scoring of each obligatory for each grammatical functor. The following table illustrates how the suppliance was scored (from Dulay & Burt, 1974):

Table 2: Scoring guidance for Suppliance in Obligatory Contexts data.

Case	**Example**	**Score**
No functor supplied	She's dance	0
Misformed functor supplied	She's dances	1
Correct functor supplied	She's danc*ing*	2

The score was then calculated as a ratio of the sum of the scores for each obligatory occasion/context of that functor over the total number of obligatory occasions for that functor across the whole group (Goldschneider & DeKeyser, 2001). A detailed discussion about the methods they used will be discussed within the relevant section in Chapter four.

The results of their study revealed that there were no differences in how accurately each group of children used the functors. They found that the overall rank order of the functors was similar across the three groups. As predicted, it was revealed that the order of acquisition was different from the one in Brown's L1 acquisition study. In a study conducted later, looking at the order of acquisition of Chinese and Spanish group of learners, Dulay and Burt (1974) confirmed these findings.

2.2.1 Morpheme Order Studies

Morpheme studies are usually referred to a series of works that explore the acquisition order of grammatical morphemes by both L1 and L2 learners (Murakami & Alexopoulou, 2016). The term *order*, in this case *order of acquisition,* is generally referred to "the order in which different structures of the target language are mastered to criterion level" (Hulstijn et al., 2015). In such studies, linguists mainly question whether learners show common patterns in the acquisition process of particular morphemes. According to Dulay and Burt (1974), the presence of a universal pattern could be an indication that a universal mechanism is in use to acquire a language. With regards to L2 English, it has been proven in a number of studies that L2 learners follow a universal order in the acquisition of L2 English morphemes, a view of which is still very dominant today (Murakami & Alexopoulou, 2016).

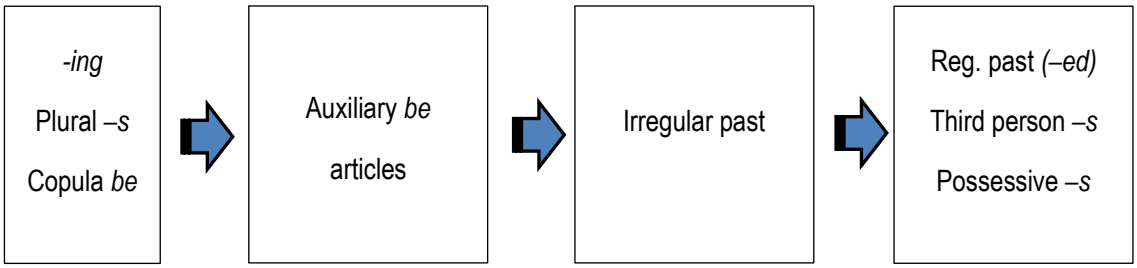
The studies of Brown (1973) and Dulay & Burt (1974), as discussed previously, are two early examples of morpheme order studies. The central point of any morpheme study is establishing the percentage of the correct use of specific morphemes in language production, which is generally recognized as 'accuracy'. To examine accuracy, researchers usually rely on the use of particular morphemes in contexts where each morpheme is obligatory, commonly known as obligatory contexts. These represent the context in which a morpheme is required in the standard English (i.e., the requirement of 3sg *–s* in *she works*). The total percentage of correct, incorrect, or mis-suppliance is calculated and factored into a suppliance in obligatory context (SOC) formula to know whether a specific morpheme has or has not been fully acquired by a learner. Initially introduced by Brown, Dulay and Burt later confirmed the hypothesis of a universal order in their subsequent study a year later.

Besides Dulay and Burt, the existence of L2 acquisition orders was also confirmed by other researchers in different studies. Bailey, Madden, and Krashen (1974), for instance, confirmed the existence of such an order in adult L2 learners. Both the earlier and the latter teams of researchers suggested the existence of a universal order in which second language learners acquire the morphosyntactic structures of English. Additionally, other researchers also suggested the existence of a universal order in both ESL and EFL learners (Pica,1983), and among instructed and non-instructed learners (Larsen-Freeman, 1975).

The morpheme order studies have not evaded criticism, however (Murakami & Alexopoulou, 2016). One of the criticisms addressed to the studies is that the order of acquisition obscures somewhat an unreliable distance in accuracy. This means that different percentages in accuracy (i.e., 2% vs. 20%) could result in the same ranking. For this particular reason, linguists like Krashen (1977) propose the natural order that is called a

single rank morphemes with similar accuracy scores. Krashen's natural order, which is believed to be universally followed by L2 learners of English, is seen in the following figure:

Figure 1: The natural order of acquisition proposed by Krashen (1977).



This order is particularly important, especially when attempting to describe whether learners' acquisition of specific morpheme(s) follows a universal hierarchy. Furthermore, such an acquisition order is closely related to the development of grammar. Pertinent to this, Hawkins (2001) claims that the same order of functor acquisition is related to the "growth of the grammar." In the present study, this particular order will be used to compare and contrast the findings and suggest whether there is any interference from the L1 in the process of acquiring English as a second language. Relevant discussion for this will be provided in Chapter five, but an introductory discussion will be presented in the subsequent section covering the influence of a native language in L2 acquisition.

2.3 L1 Influence in Child L2 Acquisition

Most researchers agree that the process of L1 and L2 acquisition is different. In the most basic form, the process is different in the way that L2 acquirers, for instance, already have a language grammar in place, while those acquiring L1 usually start from scratch (Slabakova, 2000). However, whether L1 transfer exists and in which forms it occurs are still widely debated today. The process of learning a second language is greatly influenced by many factors, one of which is the native or first language (L1). Different studies have provided evidence on how L1 affects L2 acquisition. For our future discussion, this section will give a brief overview of how and to what extent L1 could be a determining factor in the process of acquiring a second language.

Despite the large number of studies that have been conducted over the past decades, there is still a serious debate about the extent to which an L1 would mirror itself in the acquisition process of L2. In particular, studies have posed questions such as when, where, and in what form a language would play a role in the acquisition of the other. According to

Jarvis (2000), L1 influence can be observed indifferent conditions as L2 develops. Generally, Jarvis asserts that L1 influence can either decrease as learner's proficiency in L2 increases, increase simultaneously with the development of L2 proficiency, or remain constant. Besides, Jarvis also remarks that L1 influence can ultimately either nonlinearly increase or decrease. There is also a possibility that it does not follow any of these trends, which means that the occurrence can fluctuate over time.

When discussing L1 influence on the L2 acquisition process, linguists sometimes consider an essential term, *transfer*. As the term could be used to describe language influence, another term would be L1 *interference* (Ortega, 2014). The term *transfer* has been widely used in SLA as a way to describe a phenomenon where L1 could either facilitate or slow down the process of learning a second language (Ellis, 2008). Therefore, there are two possible types of transfer; positive transfer (facilitation) and negative transfer (interference). Whenever the structures or properties in a second language are closely related to those of the first language, positive transfer takes place (facilitating learning). On the other hand, a negative transfer occurs when an L2 learner experience difficulties as a result of some significant differences between L1 and L2.

The topic of L1 transfer in L2 acquisition has been part of debates and discussion for many years. Linguists tend to have different perspectives on how they see the influence of L1 in the acquisition of a second language. Concerning variability, Sundquist (2005) suggests that L1 transfer plays a vital role in blocking a learner's ability to relate syntactic properties with overt inflectional morphology. He also indicates that phonologically empty verbs are used in place of overt forms in mapping between abstract and surface verbal inflection.

Studies to investigate the L1 influence on L2 acquisition have been conducted by many researchers with different foci, settings, and methods. Before the 1970s, many studies using Bilingual Syntax Measures attempted to suggest that the first language does not play a defining role in the process of L2 development (Foley and Flynn, 2013). However, newer studies in recent years have been calling for further investigation of the role of a first language as a determining factor in the acquisition of L2.

According to Foley and Flynn (2013), the influence of a first language (L1) on the acquisition of L2 can be manifested in the way it affects fluency of use, path, and rate of development, and conditions under which the L1 transfers to the L2. With regards to how L1 influence affects the frequency of use of specific forms in the L2, a number of earlier studies have provided evidence that the absence of particular forms in L1 tends to predict a

possibility that learners will avoid using such a form in their L2 production (Kellerman, 1979). Path and rate of L2 development, furthermore, also seems to be influenced by how similar forms of grammar are exhibited in L1 and L2. Studies have confirmed that learners of L1 Chinese produce determiner *this* much earlier than article *the,* while a child whose L1 was Spanish could productively produce the two items at the same time (Zobl, 1982). Finally, L1 knowledge has also been shown to influence L2 production under specific conditions.

Andersen (1983) defines such a condition as a "transfer to somewhere" principle, as quoted in the following:

> "A grammatical form or structure will occur consistently and to a significant extent in interlanguage as a result of transfer if and only if there already exists within L2 input the potential for (mis-)generalization from the input to produce the same form of structure."

An example of this is found in a study conducted to investigate the acquisition of German definite articles by learners with different L1. Results of the study reveal that learners initially omit the article, but speakers of L1 with overt definite articles show a higher rate of production at a later stage of study than those from L1 lacking such morpheme. According to Wang (2014), L2 transfer can be divided into four different levels: sound transfer, words transfer, syntax transfer, and culture transfer. In the context of the present study, words transfer and syntax transfer are the two most relevant to be included in our discussion. If we relate our discussion about transfer to our previous discussion about morpheme order studies, particularly that of Dulay and Burt (1974), it has been hypothesized that child SLA is relatively similar to their L1 acquisition.

Jarvis (2000), furthermore, suggests that there are three possible empirical criteria for demonstrating the effects of first language influence on second language acquisition. The first effect, *intra-L1-group homogeneity*, takes place when learners of common L1 produce a uniform pattern, or acquisition order, of language production when using L2. An example of this is provided in Selinker's (1983) study of Hebrew-speaking learners of English. Selinker found that learners from the same L1 background (in this case, *Hebrew*) tend to produce the same structure (i.e., word order) in L2. The data from the study revealed that Hebrew-speaking learners in this study were more likely to produce sentences like *I like very much movies*, showing that an adverb string *very much* tends to precede the object string *movies.* For this particular example, Jarvis (2000) suggests that there is a strong correlation between L1 background to the interlanguage behavior, leading us to a conclusion that structures in a second language might exhibit some features from learner's L1.

The second potential effect of L1 influence is *inter-L1-group heterogeneity*. In general terminology, this means that learners who speak different first languages also exhibit different patterns or performance in an L2 they commonly speak (Murakami, 2016). In a study reported in Ringbom (1987), it was found that the interlanguage behavior of omitting function words (i.e., English articles) was found more frequently among L1 Finnish learners when compared to those of L1 Swedish. That being said, we can conclude that such behaviour (omission of function words) is not automatically embedded in any second language learner (Jarvis, 2000). In other words, learners with different L1 also show different patterns of language production in L2.

The last is *intra-L1-group congruity*, or cross-linguistic performance congruity. This effect occurs when learners' use of L2 features corresponds with those of L1. In the study by Selinker (1983) mentioned previously, the tendency of Hebrew-speaking learners to show similar trends in the production of L1 and L2 word order, for instance, could be relevant evidence to argue about L1 influence in L2 acquisition. With such patterns, we can see that there is something in the first language that stimulates the interlanguage performance.

It is perhaps worth mentioning why the above three aspects of L1 influence in the acquisition of L2 have been brought into our discussion, and how they are relevant to what is currently being investigated. In the present study, the influence of L1 Indonesian grammatical properties in the acquisition of particular L2 English morphemes (i.e., agreement morpheme *–s,* past tense markings, plural *–s,* copulas) is examined. Our primary objective is to see whether the way Indonesian exhibits these features influences the realization of these morphemes on the surface morphological level. The basis of our study is the proposal of the Missing Surface Inflection Hypothesis suggesting that inflection is assumed to be absent at the surface morphological level, rather than at the abstract one.

Considering that Indonesian does not morphologically exhibit any of the above morphemes (i.e., in the form of prefix or suffix), potential effects of L1 influence, such as morpheme omission in L2 English, is likely to occur in a large number of incidences. For this particular reason, any emergence of these effects will be represented in learners performance in supplying the morpheme in individual obligatory contexts of each specific morpheme being investigated. In our longitudinal data collected from two L1 Indonesian learners of English, these are available in abundance. Therefore, it is expected that the data will reveal essential information about L2 acquisition behavior of the two participants. To move further with this issue, we will now discuss different factors affecting L2 acquisition along with any other subjects pertinent to this.

2.3.1 Predictive Factors in Bilingual Language Acquisition

In general, children's accuracy with verbal morphology is influenced by both internal and external factors. Internal factors include Age of Onset, L1 – L2 transfer, length of exposure, age at the time of testing, and cognitive maturity. External factors are variables like the amount of L2 exposure at home, number of brothers and sisters, parental language proficiency and educational level, and L2 environment (Chondrogianni and Marinis, 2011). These factors are known to be the predictive factors in L2 acquisition. The present study will focus on external factors, which are variables related to the environment.

Most of the time, environmental factors are related to any amount and quality of input to which a language learner is exposed. Amount of input, frequently known as the quantity of input, refers to the amount of influence received by L2 learners in the process of acquiring an L2. Quality of input has to do with factors like parental education and language fluency of any other speaker who interacts with the L2 learner. Concerning this, studies have suggested that internal and external factors influence language acquisition process, although it is not always clear which is the most important one in explaining learner differences (Place and Hoff, 2011). However, a number of previous studies have mentioned different environmental factors that affect L2 acquisition. In the following brief sections, I will provide relevant discussion about this issue, especially as relevant to the acquisition of morphosyntax.

2.3.1.1 Amount and Quality of Input or Exposure to the TL

When discussing child L2 acquisition, the idea of input is always divided at least between the two languages involved. Most of the time, however, the division is not always balanced. Numerous studies provide evidence of the influence of input quantity onto L2 learner's proficiency, especially for morphosyntactic development. In other words, they suggest that input quantity is undoubtedly an essential predictor in L2 acquisition (Unsworth, Argyri, Cornips, Hulk, Sorace, and Simpli, 2014). However, what exact roles this input plays in the acquisition process remain a debatable topic.

This finding, to a certain extent, is in contrast with earlier finding presented in Jia and Aaronson (2003) and Jia and Fuse (2007) which suggested that the effect of age and exposure to language performance will be more evident after at least three years of initial exposure to a target language. In particular, Jia and Fuse (2007) asserted that children who started learning English at younger ages showed better accuracy than those starting at an older age. Other studies investigating the negative effects of external variables have only exclusively looked at factors like socioeconomic status (SES) of the family; thus it is quite

hard to present relevant data here. One example of such a study is that of Gathercole (2002), which investigated the effects of SES in the acquisition of mass/count nouns and *that*-trace phenomena. Findings indicated that low SES children in 2nd grade had less accuracy than high SES children. However, the data showed otherwise among the children at the 5th grade level, proving that external factors do not affect all morphosyntactic phenomena in the same way (Chondrogianni and Marinis (2011).

Gathercole (2007) studied child bilingual speakers of English and Spanish in Miami, but with more exposure to Spanish because it was the only language spoken at home. When the children were asked to listen to both grammatical and ungrammatical sentences in both languages, it was found that they were better than any other bilinguals in detecting incorrect sentences at an early age. Gathercole concludes that a child is more likely to develop better proficiency in a language provided that more input is received in that language. This finding is parallel with the results of an earlier study by Gathercole and Thomas (2003) suggesting that large quantity of input in a given language correlates positively with proficiency in the production of that language. This is also supported by findings in a more recent study by Gathercole and Thomas (2009) which investigated how bilingual communities become fully bilingual in their dual community language. Data from their six studies suggested that, for the minority language (either English or Welsh), input level are directly related to the timing of acquisition and the ultimate abilities. This means that those who receive more inputs and maintain exposure to the language will mostly have better abilities in the language. For the majority language, however, Gathercole and Thomas suggest that, in addition to input levels, long-term acquisition and abilities appear to be universal.

To examine the effect of input and age of onset in L2 acquisition, Unsworth et al. (2014) studied three groups of children – 2L1, early successive bilinguals, and L2 children, (distinguished by their exposure to English and Dutch at different points of time) – by using elicited production tasks. Their findings suggest a complex interplay between the factors of input quantity and age of onset. When measured cumulatively, they found that the amount of input to the L2 significantly predicted L2 success. This finding is in line with Hoff and Core's (2013) findings suggesting that both the quality and quantity of children's language experience influence their language development.

Similarly, a number of studies also suggest that the quality of input plays a vital role in shaping language development. De Houwer (2007), for instance, conducted an in-depth investigation to see how parental input would affect children's language production. She found that particular language constructions used by parents influence their children's L2

production. It was also suggested that consistent and adequate exposure to a minority language spoken by one of the parents who is proficient in the language is an important predictor to children's language development.

Place and Hoff (2011) conducted an extensive study on factors that affected the bilingual development of two-year-old simultaneous Spanish-English bilinguals. Data collected through caregiver-reports and the parents' language diary provide information about active vocabulary size and grammatical complexity, as well as quantity and quality of inputs received. The results of the study suggest different predictive factors involved in both the majority and minority language. For the majority language, predictive factors include the number of interlocutors interacting with the child (both ways) and proportion of input provided by native speakers. For the minority language, different contexts heard is another predictive factor along with the two previously mentioned.

To sum up, the studies we have discussed previously provide ample evidence for the role of input into language development, which we call predictive factors, on L2 acquisition. However, the effect of input from non-native sources has been relatively under-studied. The subsequent section is dedicated to a brief discussion about this issue.

2.3.1.2 Non-native Input

A relatively small number of studies have attempted to investigate the effects of non-native input on child L2 or bilingual acquisition (van Leeuwen, 2013). To further our discussion about the effect of non-native input in L2 acquisition, I would like to discuss a few previous studies that have looked at the contribution of non-native speakers in language acquisition.

The first study that is indirectly relevant to our discussion is that of Pires and Rothman (2009) who compared the acquisition of Portuguese by European Portuguese (EP) heritage speakers (HSs) and Brazilian Portuguese (BP) HSs. They compared their data from their EP respondents to experimental data from BP respondents provided in Rothman (2007). Proposing the *missing-input competence divergence,* they suggest that the HSs have not been able to acquire the grammar of their heritage language. Although heritage language is not entirely relevant to what is currently being investigated in the present study, there is an essential reference from Pires and Rothman's study where they suggest that HSs distinct dialects in standard Portuguese may be the result of insufficient input from native speakers. They term this 'exposure to significantly distinct primary linguistic data'. In the context of

the present study, exposure to parental L2 at home can be regarded as providing insufficient input and may affect acquisition as Pires and Rothman (2009) have suggested.

Another important review that is relevant to the present work is that of Domínguez (2009), which provides meta-analysis from four different empirical studies investigating different issues in bilingual acquisition by heritage speakers (i.e. interface vulnerability, language attrition and incomplete acquisition, effects of quality and frequency of input exposure, and effects of language contact). Supporting Pires and Rothman's (2009) finding as we discussed earlier, Domínguez (2008) also discussed data of her particular interest from two balanced bilinguals, Carla and Maros, to represent the quality of input in heritage language acquisition. These data were brought into the discussion due to the fact that the characteristics of parents who raise heritage children similar to those discussed in studies being reviewed (e.g., Sorace and Serratrice, 2009); Pires and Rothman, 2009). Domínguez and the scholars whose names were previously mentioned seem to agree that L1 attrition and incomplete acquisition in bilingual grammars provide important evidence in language acquisition studies, especially when explaining how communities affect language acquisition.

Consistent findings have also been reported in Chondrogianni and Marinis (2011), in which length of exposure and mother's L2 proficiency were found to be predictive factors for vocabulary performance. They mention that this could be related to mothers' socio-economic status, as mothers with high SES tend to talk more and in longer sentences to the children, as also reported by Hoff (2003). To what extent SES affects learner's ability to acquire more complex forms is still debatable today. As for the acquisition of tense marking morphology (i.e., third person *-s* and past tense), however, it was found that mothers' proficiency played no particular role, which is contradictory to what was suggested by Jia and Fuse (2007) as mentioned in the previous section.

In general, factors like quantity and quality of input plays significant roles in L2 development. As Domínguez (2009) argues, errors found in heritage speakers' bilingual speech could be the result of non-target input that they receive from their parents. Data collected from the present study are expected to provide insightful contributions in, for instance, advocating for claims that input from non-native parents might influence the quality of language production by L2 bilinguals. Relating these findings to the participants in the present study, I found it hard to compare the data from the two sources. The two children involved in the present study were first exposed to English at different points of age, while learners in the study previously discussed portray different characteristics of language

exposure. However, some similar background details of the participants in the present study will be presented in Chapter 4, and it is expected that our discussion in the subsequent chapters may be able to take into account this important information.

Another important study that has investigates the role of (non-native) parental input on L2 development is that of Paradis and Navarro (2003). In their study, they examined data from two Spanish monolingual children, one Spanish-English bilingual child, and their parental interlocutors. They looked at the proportion of overt vs. null subjects used by the children and possible influences from input they receive from parental interlocutors. The results of the study revealed potential influence from non-native speakers. Paradis and Navarro claimed that the bilingual child showed patterns in subject realizations in Spanish and they believe that this was due to cross-linguistic effects from English. They suggest that non-target like properties in the child's language production were due to similar properties that are found in parental input from a parent who is not a native speaker of Spanish.

There is a close relationship between what was done by Paradis and Navarro and what is being investigated in this dissertation. Both have examined corpus data from young learners, although the languages being investigated are distinct with completely different inflectional systems. Paradis and Novarro compared two types of exposure where, in one case, a child is exposed to a kind of Spanish with a 60/40 overt/null subject proportion, while the other with 40/60 proportion, which is the standard Spanish. It has been assumed that the 60% versus 40% proportion of overt subjects, the nonstandard version, may have influenced the child's acquisition of subject realization in Spanish. They, however, state that they were unable to claim whether the non-native input is the only factor that could trigger this, unlike Dominguez (2009) and Pires and Rothman (2009) who specify that specific elements of parental input may have influenced children's language acquisition.

The present work extends the aforementioned studies and will look at similar variables namely underspecification, cross-linguistic influence, and quantity and quality of input. Data from different input variables and child language production collected over 12 months will be used to determine whether environmental input can be seen as predictive factors in L2 acquisition, as some of the previously mentioned studies have argued.

2.4 The Generative Framework and Variability in L2 Production

Linguists who advocate this framework argue that the syntactic knowledge acquired by language learners is underdetermined by the input (White, 2003). Eisenbeiss (2009) further mentioned that the birth of generative grammar was a result of many linguists'

dissatisfaction with the idea of behaviorism in the domain of linguistics. It was Noam Chomsky who initiated and revolutionized the development of generative linguistics in the late 1950s and early 1960s, arguing that the basis of language is genetically given and domain-specific (Chomsky, 1981a). It is assumed that, in generative perspective, innate grammars have a strong influence in native speakers' ability to work with sentences and any kinds of language production.

Initially, the core discussion of generative L2 acquisition research was questioning UG's existence in L2 acquisition by testing whether it operates in IL grammar. It specifically argues that learners' linguistic competence can be defined as an unconscious system (i.e., grammar) which helps them learn a language (, 2010). It is well-known that L2 learners' lack of ability to produce verbal inflection morphology associated with functional categories has become an intriguing and important issue in L2 acquisition studies (Haznedar, 2003). During language acquisition and development, L2 learners tend to demonstrate optionality in the use of inflectional morphology, especially when the two languages are distinct in terms of how inflections are marked. As a result, properties like tense and agreement markings can sometimes be provided, but on many occasions, they can also be absent from young L2 learner's early language production. In the case of older or adult learners, as mentioned in Lardiere (1998), such optional suppliance could also be found in the endstate grammar.

A relevant phenomenon has been discussed by different scholars such as Haznedar and Schwartz (1997), Lardiere (1998), and Prévost and White (1999), in response to debates about L2 learners' problems in showing correct morphological inflections. As a result of this proposal, the MSIH was then postulated with the purpose of explaining the omission of morphology in interlanguage. Under this hypothesis (MSIH; see Prévost & White (2000b) and Haznedar & Schwartz (1997)), L2 learners are considered to have unconscious knowledge of the functional projections and features underlying tense and agreement, where the lack of morphological forms in the inter-language grammar reflects a problem with the realization of surface morphology (Haznedar, 2003). Prévost and White (2000a), in particular, have suggested that there are at least three different terminologies initially used to describe this phenomenon; *missing inflection* (Haznedar & Schwartz, 1997), *ignorance of morphology* (Epstein, Flynn, & Martohardjono, 1996), and *the Missing Inflection Hypothesis* (later amended as *the Missing Surface Inflection Hypothesis*) (Prévost & White, 2000b).

Table 3 below gives a general overview of the abstract and surface morphological realization of English functional categories, as proposed by White (2003).

Table 3: Abstract and surface morphological realization by White (2003), *Second language acquisition and universal grammar*: Cambridge University Press.

Functional categories and morphosyntactic features in English		
Functional Category	*Abstract* morphosyntactic Features	*Surface* morphological realization
Infl	± tense/finite; ± past; Ø features (person, number).	*-s;* --ed; Ø
Comp	± wh	that; whether; Ø
Det	± definite; ± plural	a; the; Ø

For reference, *functional categories* such as I(nflection), C(omplementizer), and D(eterminer) lie behind morpho-syntactic properties such as agreement, tense, and case, which cover closed-class lexical elements like articles, complementizers, and auxiliaries. In contrast, open-class elements such as nouns, verbs, and adjectives are encompassed under *lexical categories* (Prévost, 2003).

It is perhaps worth mentioning that, according to Vainikka and Young-Scholten (1994, 1996), the problems with morphological forms (i.e., missing forms) is an indication of issues with functional categories in second language acquisition. In other words, morphological deficiency can be taken as evidence for the lack of functional categories (Haznedar, 2003). For this particular reason, V &Y-S suggest three requirements leading to successful acquisition of functional categories. First, it requires the suppliance of modals, auxiliaries, S-V agreement, and tense marking. Secondly, *wh-* and *yes/no* questions (with *wh-* words and appropriate auxiliaries) need to be used consistently. Lastly, it calls for the use of embedded clauses with overt complementizers. Therefore, it is assumed that correct production of inflections is strongly related to functional categories.

Data from the two subjects of the present study show frequent errors concerning the production of grammatical items like auxiliaries, subject-verb agreement, and tense markings. As reported in the results chapter, the accuracy rate of a few morphemes (e.g., 3sg *–s* and *–ed* verbs) are still very low for both subjects. This could indicate that acquisition has not taken place. Similarly for irregular past tense verbs, although the average accuracy rate is already above the V &Y-S 60% cut-off point, both Mawar and Melati make frequent errors when it comes to producing the morpheme correctly. In line with (Lardiere, 1998 & 2000)

data from the two participants reveal that, in spite of the low level of overt morphology, morphological inflections are mainly accurate whenever they are being used in obligatory contexts. The main problem lies in the production of correct morphological reflexes, especially in regard to how they are realized at a morphological surface level. According to Haznedar (2003), this is due to morphological mapping, not a deficit in functional projections and features.

Before continuing further into the discussion about our data, it is necessary to clarify a general agreement on which we will base our assumption about the missing surface inflection. According to Ionin and Wexler (2002), inflections should always be nearly accurate whenever they are being used by learners. This is in line with Prévost and White's (2000) suggestion that 'when L1 children use non-finite verbs in finite positions, they are actually non-finite forms'. Having said this, we can expect to find L2 learners producing utterances like *she loves apples* and *John studied in England,* but not **they loves apples*. According to Prévost and White, such variation is not random.

Haznedar and Schwartz (1997, p.263) suggest that deciding whether verbal morphology is randomly or not randomly used should generally depend on the error rate for the suppliance of each morpheme. If the error rate is relatively low (e.g. 12/433 or 2.77%, as cited in their study), this should indicate that verbal agreement morphology is not random. In addition, we also need to take into account the accurate use of each morphological item. In other words, although the child omits a morpheme hundreds of times, for instance, Haznedar and Schwartz suggest that it should almost always be used correctly when the morpheme is present in its relevant obligatory context. Finally, it is also essential to point out any incorrect use of a morpheme at context where it is not obligatory. Further discussion about this will be separately provided in the subsequent sections.

2.4.1 Other Possible Accounts of Variability

In addition to what has previously been discussed earlier, I would like to point out that a few other accounts discuss variable use of morphology by L2ers. The following discussion will briefly introduce possible accounts relevant to data under the present study. To remind us again about what has already been presented previously, there are two opposing sides in regards to how language learners' morphological variability should be discussed. On the one side, proponents of the *impairment* proposal suggest that learners' errors with morphology are due to impairment in their syntactic representation and that they may have specific problems with syntax (Ionin, 2013). Some variants of such approach are known as Weak

Transfer / Valueless Hypothesis (Eubank, 1993), Local Impairment Hypothesis (Beck, 1998a), the Failed Functional Feature Hypothesis (FFFH) (Hawkins and Chan, 1997), and Interpretability Hypothesis (Tsimpli and Dimitrakopoulou, 2007). According to Ionin (2013), the core claim of these accounts is that L2 learners can acquire syntactic representation in a new language only if it is available in L1 system.

On the other hand, those opposing the idea of impairment suggest that problems with L2 morphology are not due to syntactic deficits. Views under this position are mainly known as Full Functional Representation (Slabakova, 2016). Under this account, different proposals suggest that learners possess syntactic knowledge, but there is a problem with supplying correct morpheme in the form of surface inflection (i.e., Prévost and White, 2000). This idea is fully compatible with the Missing Surface Inflection Hypothesis (MSIH), the claims of which have been supported by a number of different studies.

The purpose of this particular section is to give much more detailed information about different accounts discussing morphological variability among L2 learners. It is expected to provide us with different perspectives on how we view such an issue and allow discussion of the findings of the present study with a wider context and viewpoint. The predictions of these hypotheses will be used to address specific morphological variability phenomena in the data, especially those that cannot be covered by the MSIH.

Several relevant accounts discussing the morphological variability phenomenon have expanded the current debate. In addressing variability, they have moved the discussion beyond parameter resetting into acquisition of grammatical features. The most prominent recent proposal, the Feature Assembly Hypothesis (FAH) by Lardiere (2009), follows Chomsky's Minimalist Framework to assert that the acquisition of a specific language grammar involves the selection of features which will then be composed and assembled into lexical items. For easier understanding, I use a clear proposal of the FAH presented in Dominguez, Arche, and Myles (2011), 'successful L2 acquisition is determined by the reassembling of features of the L2 which already exist in the L1 into new functional categories and lexical items'.

Evidence for the Feature Assembly Hypothesis comes from a number of different studies. One set of evidence is found in a study of L2 French by Renaud (2010), arguing the availability of feature assembly. She conducted a study involving three groups of 48 American learners of French by using a methodology that combines reading time and accessibility judgment data. For comparative purposes, she also collected data from 11 French native speakers. The study produced a number of different findings. With regards to

the FAH, the results of the study appear to support the account, with evidence showing that learners can select a set of features for the computation of agreement in French. It has also been found that learners are sensitive to the use of default forms, which is also related to the underspecification hypothesis (to be discussed afterward).

Another piece of evidence for the FAH comes from the results of the study by Dominguez, Arche, and Myles (2011). The initial aim of the study was to investigate the L2 acquisition of Spanish imperfect. Data collected through a context/sentence matching task from 60 L1 English learners of Spanish and 15 Spanish native speakers reveal that feature reassembly could cause difficulty in the process of L2 acquisition. In the context of Dominguez's study, feature reconfiguration appears to control the acquisition of Spanish aspectual morphology (see also their recent 2017 publication). Therefore, similarly to the study of Renaud (2010) previously mentioned, this study also confirms the FAH proposal hypothesis.

One of the alternative views on variability is commonly known as the Morphological Underspecification Hypothesis (MUH) proposed by McCarthy (2007, 2008), which seems to be an alternative account to the syntactic impairment and the MSIH proposals. Under this proposal, underspecification is considered as the concept in which redundant information is excluded from a representation (McCarthy, 2008). McCarthy proposed the morphological underspecification hypothesis under the assumption that L2 errors can be regarded as an example of underspecification. She also assumes that underspecified forms characterize unmarked forms, which often occur as default (McCarthy, 2005). The use of default finite structures usually occurs when L2 learners are in doubt or under some kind of communication pressure (Prévost, 2003). In this regard, underspecified features correspond to unmarked features, which are more basic and involve less structure, rather than marked ones that are usually more complex in structure.

Furthermore, following earlier authors presenting different representations of markedness and unmarkedness such as Harley and Ritter (2002), McCarthy (2008) assumed that unmarkedness is equivalent to being underspecified; hence the term underspecification is then introduced. To determine markedness value, McCarthy suggests that the following criteria should be used. The first criterion is *indeterminateness*, suggesting that the marked element carries a specific meaning as opposed to the unmarked one which is unspecified or can be generally interpreted. *Neutralization* is a second (distributional) criterion that occurs when an unmarked term is used in a broader context than the marked one, such as the use of *lions*, not *lionesses,* for both plural male and female lion. When a term is used in a broader

range or context, such as the use of a masculine determiner, *syntactic distribution* is a cover term to represent the criterion. Another criterion is called *syncretization,* which involves the use of formal distinctions in morphology (i.e., gender, number). Lastly, f*ormal marking* is perhaps the most common criterion of markedness, which is defined by addition of morphemes such as the *–s* suffix on *cats* as opposed to *cat.*

McCarthy (2006, 2007) suggests that L2 learners could make two types of errors. The first one, which is mostly found in MUH study, is called underspecification (a non-target form whose feature are underspecified). The second one is known as feature clash (a non-target form whose features clash with those required by syntax). This is illustrated in examples (3) and (4) below, as presented in McCarthy (2007).

(1) yo habla (*underspecification*)
Í speak-3s
(2) yo hablas (*feature clash*)
Í speak-2s

In such a context where syntactic representation requires first person singular, the only way to avoid feature clash is by using the default form *habla* (as in (3)). As a result, the use of *hablas,* as in (4), would result in a faulty inflection involving feature clash. The same thing applies in any other language (i.e., she *work* full time, in English). According to McCarthy (2006), learners tend to avoid feature clash but frequently produce underspecified morphemes, supporting the hypothesis. Her study proves that the use of default forms is most preferred by the learners, which is not consistent with the suggestion by MISH.

The Morphological Underspecification Hypothesis predicts the lack of certain kinds of errors, especially those that result in feature clash (McCarthy, 2005). Thus, errors of underspecification, or those that are unmarked, will occur. In her study of 11 Spanish L2 learners, McCarthy found this pattern for person, number, and finiteness in verbal morphology and for gender and number morphology in determiners. She also claims that such patterns are not predicted under 'non-underspecification' theories.

According to McCarthy (2005, 2006, 2007), current accounts on morphological variability provide a reasonable answer why certain defaults exist within L2 learners' language production. It is also suggested that although relevant theories of variability (i.e., Lardiere, 1998; Prévost, 2000) have observed that learners do employ default forms, McCarthy (2005) claimed that none of these theories predict the actual morphemes being used as defaults, thus underspecification theory is proposed.

When confronted with the MSIH claims, McCarthy agrees with those advocating MSIH that learners issues with inflectional morphology are due to reasons (i.e., mapping problems between syntax and morphology) other than lack of syntactic representation of certain features in L1 (Ionin, 2013). However, she also presents other claims against the MSIH, where the findings in her study show that the learners are more target-like. McCarthy (2006) asserts that morphological errors are considered instances of underspecified morphology rather than the errors suggested by the MSIH.

To some extent, it is inappropriate to compare the results of MSIH studies with those of MUH. The reason is that the MUH study involves data from different task comparisons (i.e., production and comprehension/judgement) where learners are exposed to a different level of language pressures. MSIH, on the other hand, only presents production data, which do not represent learners' comprehension skills. In sum, it could be beneficial to combine the two approaches so that both production and comprehension findings are explained, with respect to variability in L2 acquisition.

2.4.2 Studies on Variability in L2 Acquisition

A number of different studies have attempted to investigate the case of missing surface inflection in further details. This particular section is specifically allocated to briefly summarize most relevant studies and discuss how they help us define current gaps in the literature. In the sections that follow, we will then elaborate in detail how we can fill in the gap by comprehensively discussing our research questions and how the results of the current study would contribute to the existing debates in the field. To begin with, two different case studies of single subjects, Erdem and Patty, will be presented. Several other studies involving more than one participant will be discussed briefly after this.

2.4.2.1 A Study of Erdem

Haznedar and Schwartz (1997) presented longitudinal research data from Erdem, a Turkish child of English L2 learner. Their initial goal was to investigate whether there was a stage in the child L2 acquisition where inflection was 'optional'. In other words, they needed to know whether child L2 acquisition of English was similar to the L1 acquisition of English in regards to the optional infinitive stage. After a lengthy 18-month data collection process and analysis, they found that Erdem was using both finite and non-finite verb forms although there was limited evidence for the use of other properties. Their data also revealed that the

use of agreement was correct. Haznedar and Schwartz argued that Erdem's non-finite morphology was the sign of missing inflection.

In this particular study, Haznedar longitudinally investigated the acquisition of L2 (English) by a four-year-old Turkish speaking child, Erdem, within the principles and parameters framework. Three main issues were addressed in the study: (1) the issue of the initial state and the extent of first language influence; (2) comparison and contrast between child L1 acquisition and child L2 acquisition versus child L2 acquisition and adult L2 acquisition; and (3) the existence of functional categories in early child L2 acquisition (Haznedar, 1997b).

The 18-month long-lasting data collection process was the result of research aims to look at how Erdem's L2 was developing during this specific period. Haznedar collected the data from Erdem approximately 3 times a month, and most data were collected while playing either activity games or communication games at Erdem's home. On some occasions, Erdem was also recorded while playing on the playground. Haznedar (2001) suggested that the results of her study presented counter-evidence for the Minimal Trees (Weak Continuity) Hypothesis, as proposed by Vainikka and Young-Scholten (1994). The proposal was based on the assumption that children's grammars initially project only lexical categories, whereas functional categories develop gradually (Hawkins, 2001). Besides, V&YS suggest that knowledge of functional categories does not transfer even though the child possesses the knowledge of functional categories. Therefore, the acquisition of more complicated structures in the L2 is dependent on how the learner analyses the input data and uses them in their language production.

In this study, Haznedar presented fascinating statistics about Erdem's early language development. In the first two months, Erdem only produced one copula *be* in ten obligatory contexts. Surprisingly, within the following two weeks, he only missed one out of 18 obligatory contexts. This then continued to be present consistently in the data. Auxiliary *be,* 3sg-*s,* and past *–ed* all appeared more than a year after initial exposure.

Haznedar's finding suggested that Erdem acquired copula *be* very early, followed by auxiliary *be* and the development of 3sg *–s* and past *–ed* (Schwartz, 2004). Haznedar uses Vainikka and Young-Scholten's (1994) 60% minimum correct production in order to decide whether something is acquired. Overall, the data and findings from this study suggested that functional categories and their projections are available in Erdem's early interlanguage. According to Haznedar (2001), the data do not show any evidence for tense and agreement morphology in the early stages of L2 development. Although some functional elements are

not present, Erdem is able to perform morphological and syntactic operations involving the functional projection IP. In addition, the results of the study also show that even a very young L2 learner initially utilizes L1 knowledge. In particular, Haznedar found that Erdem's L2 initial state was not similar to that of the child L1 learner and makes use of previous linguistic knowledge (Haznedar, 1997a).

The present study intends to continue and extend similar work previously conducted by Haznedar and seeks an answer to her initial question of whether the absence of functional elements entails the lack of functional categories. In addition, we hope that the data from Mawar and Melati will be able to give new findings so that Haznedar's concern about the result of Erdem's study could be generalized beyond the examined data can be answered. There are a lot of similarities between the data from Erdem and the two participants, especially Mawar, in the current study.

2.4.2.2 Patty

In another milestone study of missing surface inflection, Lardiere (1998) investigated the use of English by Patty over two data collection times eight years apart. Patty is an adult Chinese-speaker who had lived in the US for almost two decades at the time of first testing. This is perhaps one of the most extensive L2 acquisition studies I have ever encountered. The subject, Patty, a Chinese American, had been exposed to several different languages before she finally came to the United States, where she earned her degrees and live for the rest of her life. Although it appears that her English grammar has fossilized in deficient forms (Hellman, 2008), her English skills are more than sufficient, proven by the fact that she performs well in her new home country, especially in regards to her professional life. Despite the prolonged exposure to English, Patty is not completely native-like in her English. Lardiere confirmed that this is obvious from her accent and non-nativelike grammatical forms both in writing and speech.

Lardiere's data revealed that Patty's production of *–ed* past tense morphology was about 35% and agreement morphology was around 17%. Besides, the data also suggested that Patty was able to use tense and agreement at an abstract level (as mentioned in Prévost and White (2000a)). It was suggested that Patty was still relying on some of the lexical semantic features of equivalent verbs in her L1 (Lardiere, 2007). In fact, many morphophonological features had not reached native-like quality, which includes omission of regular past-tense markings, the omission of copula *be*, uninflected past participles, omission and overuse of progressive *–ing*, and omission of plural and possessive marking. However, many syntactic aspects in her English proved to be target-like. These included

excellent knowledge of features like pronominal case marking, possessive pronouns and demonstratives, placement of adverbs, and several others. The fact that her writing skill was better than her speaking is believed to be the result of her possession of metalinguistic knowledge of English grammar, causing her to be careful about omitting functional morphology, hence omitting it less.

Although not native-like, Patty's written production data reveals the fact that her rate of past tense suppliance in English is around 78%. According to Lardiere, this was still too high as it could be part of random behavior or good luck. However, this figure seems lower in her spoken data, indicating that phonology and performance factors could affect whether she is likely to produce it or not. Additionally, Lardiere also suggested that Patty had transferred part of her L1 knowledge into L2, particularly in regards to L1 phonology. This was noticeable when she struggled with final consonant clusters in her English. Here, it is perhaps important to note that the variability of present and past forms in Patty's data, including the omission rate of past tense, cannot automatically predict that Patty had failed to acquire that particular property in English. In fact, her correct suppliance of past tense markings shows that she had not failed in acquiring that knowledge (Hellman, 2008).

2.4.2.3 Other Studies

Besides the two previously discussed works, a number of other studies have also investigated similar areas but by looking at more than one participant. Prévost and White (1999), for instance, conducted a study to look for evidence of truncation, or shortening of forms, in second language acquisition. For this purpose, they gathered a different set of data from four children and four adults learning French and German as a second language in a naturalistic setting. These data were sourced from different studies of Lightbown (1977), Pienemann (1981), Perdue (1984), and Clahsen, Meisel, and Pienemann (1983).

According to Prévost and White (1999), the Truncation Hypothesis proposes three different predictions in relation to finiteness, subjects, and word order. With regards to finiteness, they suggest that verbs in IP and CP roots are finite, while embedded clauses, wh-questions and yes/no questions should not contain non-finite verbs. Prevost and White also mention that the Truncation Hypothesis predicts differences in the distribution of subject types. Regarding word order, the Truncation Hypothesis predicts that the headedness characteristics of CP, IP, and VP will affect the position of the verb in these roots. All of these summarize that, according to the Truncation Hypothesis, finiteness will be structurally determined. This means that if a VP is projected, the verb will be non-finite, while if an IP or

CP is projected the verb will be finite. This is somehow different from the prediction of the MSIH, which suggests that there is no relationship between finiteness and clause type.

Prevost and White found co-occurrence of finite and non-finite verbs in the data from both groups of participants. With regards to the first (child) data, finite and non-finite forms existed in different contexts, with the distribution of the latter being consistent with truncation, where non-finite verbs are found only in root declaratives and not in CPs. Adults' data, on the other hand, could not confirm truncation. They suggest that both types of verbs occurred in the same contexts and that this was consistent with the Missing Surface Inflection Hypothesis. This indicates that the adults use the infinitival marker as a substitute for finite inflection. Prevost and White suggest that these findings are an indication of an age effect in the usage of non-finite verbs in L2 acquisition. They also indicate that both truncation and missing inflection may be involved, to some extent, in adult grammars.

Another study by Ionin and Wexler (2002) also investigated the reasons behind the omission of verbal inflection in L2 acquisition. The authors examine production as well as grammaticality judgment data collected from twenty L1 Russian children acquiring English as a second language. They argue that: (1) there is an indication that functional categories are present in the learners' second language grammar, (2) Tense is fully specified in the L2 learner's grammar, with the absence of inflection a result of difficulties in learning feature specifications of inflectional morphemes, and (3) Unlike first language learners, second language learners skip the Optional Infinitive stage, where children's early multi-word speech is found (Wexler, 1994)

Ionin and Wexler make a clear argument that there are two possible ways to explain L2 learner's misuse of finite and non-finite forms, one called an impairment (Meisel, 1991) and the other postulated as the problem with realization of abstract features to the surface morphology known as the Missing Surface Inflection Hypothesis (Prévost & White, 2000b).

With the purpose of questioning whether the absence of overt inflection in L2 learners' utterances is a result of either or both accounts, Ionin and Wexler's findings suggested that that the child L2 learners in their investigation very rarely produced incorrect tense/agreement morphology, although other types of omissions were present. They argued that these omissions of inflection are the results of problems with surface morphology realization, as suggested by the Missing Surface Inflection Hypothesis. It is important to mention that the results of this dissertation can only be indicative of differences in language proficiency (i.e., grammatical learning). Thus, they will not be able to make any claims related to final state of the target language.

2.5 Hypothesis, Predictions, and Contributions of the Study

This dissertation intends to contribute to the existing debate in the literature by providing a structural account of the roles of predictive factors on L2 acquisition. It also aims to discuss which specific accounts can be used to explain particular production phenomena found in child L2 learners of English. Most of the studies discussed in this chapter make claims and suggestions about the acquisition of L2 by learners whose L1 have a nearly similar inflectional system. The present study will be different in this respect, as it will provide an in-depth review of data from two distinct languages in terms of their grammar and inflectional system (see Chapter 3 for a detailed comparison.). Describing predictive factors in linguistics development in such context provides a unique contribution to the existing area of debates and will hopefully bring new contextual findings.

As thoroughly discussed earlier, language skills among early bilinguals develop with strong evidence of variability in their language experiences (Hoff and Core, 2013). One of the ways to understand this unique condition is by looking at the varied nature of the environments in which the language is acquired. In this respect, we are pointing at environmental predictive factors previously mentioned in our discussion of this chapter, such as exposure to both native and non-native sources. From a linguistic point of view, L2 learners who learn a new language naturalistically are mostly dependent on utterances they hear and use any input they receive in their language production. In this regard, theories have suggested that whenever the input is non-standard, the effect on their L2 production will be more obvious. The present study will try to present data from such a unique context of L2 acquisition by two learners of different age and type of exposure to the target language. It is expected that more empirical evidence about the potential effect of non-native input on linguistic development can be presented.

Further in the chapter, we have also systematically discussed the presence of variability in child L2 acquisition, mostly about the presence or absence of inflection at the surface morphological level (Prévost & White, 2000a). It has been well emphasized that different accounts, i.e., the MSIH, predict variability between finite and non-finite forms of verbs. According to the MSIH, finite forms are assumed to be truly finite; thus they only appear in finite positions. Non-finite forms, however, can occur in both positions; i.e., genuinely non-finite or in place of finite inflection (Prévost and White (1999) and Prévost and White (2000b)). Following this claim, it is assumed that finite verbs can only be found in the appropriate contexts. For example, no such verbs should appear after a preposition,

auxiliary, or modal verbs (i.e., *for *slept,* *have *comes,* *will *eats*) because only non-finite forms can be used in such contexts.

With regards to the influence of environmental factors (i.e., parental input), I predict that exposure to non standard L2 in home environments will have a certain effect on the development of L2 inflections by children, but it will only be significant if the proportion is balanced between non-native input and the standard variety. I specifically refer to Place and Hoff (2011) who suggested that it is not the amount of non-native input that counts, but rather the 'relative proportion of exposure that comes from non-native as compared to native speakers'. Therefore, we expect to see how data from UBiLEC will give a detailed overview of language exposure from the two subjects with regard to their language use at home and beyond it (i.e., school or nursery).

I also predict that the influence of participants' L1 (Indonesian) inflectional system and morphological features will be very obvious in their L2 (English) spontaneous production. With regards to particular properties being investigated, *plural –s, tense and agreement marking, and copular be,* the two participants will most likely exhibit numerous errors in their L2 production data of the related properties. According to the MSIH proposal, the two participants will (i) sometimes produce non-finite forms in place of finite forms in verbal inflections (for example the third person singular *–s* and the regular past tense *–ed*), and (ii) perform better in copula *be* than in verbal inflections.

Building on findings from L1 interference and MSIH-related studies previously discussed, the goal of the current study is to, in general, investigate L1 effects in a more syntactic perspective. In particular, it will try to prove whether the claims proposed by relevant accounts (e.g., the Missing Surface Inflection Hypothesis) apply to Indonesian child L2 learners of English. The general hypothesis is that the lack of the corresponding morphemes in the first language will undoubtedly lead to low accuracy in L2 production.

The study will try to answer the following research questions:

1. What are the roles of L1 and non-native input into L2 learners' linguistic development? How do children acquire English morphology if they come from an L1 that does not have overt morphology and marks grammatical meaning by context?
2. How does the absence of surface realization of particular morphemes in L1 affect the production of similar properties in L2? What type of L2 errors are most likely caused by the absence of these particular morphology and syntactic properties in the L1?

3. Are there any age-related differences between the two subjects who started acquisition at different ages?

In order to answer these questions, the rate of suppliance in obligatory contexts of each relevant morpheme being investigated will be thoroughly counted by using the Suppliance in Obligatory Contexts (SOC) formula. With regards to the first research question, data of different exposure variables collected from UBiLEC will be used to prove whether non-native input can account for the child's linguistic development and, if so, to what extent. As for question 2, I attempt to find out if knowledge of abstract syntactic properties precedes knowledge and use of surface inflections, or vice versa. In other words, we expect to find evidence of either *'morphology before syntax'* or *'syntax before morphology'* claims. Furthermore, we can answer question number 3 by investigating whether the older subject shows greater inconsistency in her suppliance of the relevant English properties.

For this particular target, the study will test whether the predictions indicated in the Missing Surface Inflection Hypothesis (MSIH) (*i.e.,* Haznedar & Schwartz (1997), Prévost & White (2000a), and Haznedar (2003)) are consistent with the data from the two subjects currently participating in the study. According to this hypothesis, L2 learners are considered to possess unconscious knowledge of the functional projections and features underlying tense and agreement, where the lack of morphological forms in the inter-language grammar reflects a problem with the realization of surface morphology. The proponents of this view claim that abstract syntactic features (such as *tense* and *agreement)* are acquired early by L2 learners, while the morphological surface structure is missing and comes later on. Further discussion regarding the MSIH will be presented in the relevant section.

For the final question, we will attempt to draw particular findings both from UBiLEC and children's linguistic transcripts. These data will be able to tell us whether patterns of linguistic production are different between the two children. In particular, we will relate some exposure variables to how each child produce the morphemes over the period of data collection and summarize the findings to reflect whether there are age-related differences between the two subjects.

By answering the three research questions, I hope to contribute to the study of bilingual language acquisition and early L2 acquisition process. I am also expecting to be able to make practical suggestions for anyone who is interested or involved in bilingual language acquisition in Indonesia and, hopefully, in the worldwide linguistic community. In addition, I hope that the results of this study will allow me to add beneficial input to the

growing bilingual community, particularly those working within an Indonesian context. As the effect of external input is particularly important for parents raising their children bilingually, which is very common in Indonesia, I hope the findings in this study will be of some help for them as well.

2.6 Summary

In this chapter, we introduced various works relevant to the present study. At the beginning of the chapter, we discussed how the study of L1 and L2 acquisition originated decades ago. Since then, many new studies have been conducted with different foci and contributions. The most relevant works that are closely related to the present study are those of morpheme order studies, which is within the area of generative linguistics, particularly those with a specific focus on morphological inflections.

Later in the chapter, we reviewed different works pertinent to L1 influence on L2 acquisition. In particular, we looked at how previous studies interpret first language interference in the process of acquiring a second language. This topic is particularly important as we will be discussing how the Indonesian language interferes with the acquisition of English by the two research subjects. The influence of L1 in the acquisition of a second language is specifically taken into consideration as one of the factors contributing to variability in language production, especially in the area of morphological inflection. More specifically, we will be relating previous studies investigating internal and external variables as predictive factors in L2 acquisition to what will be available in the present data. This is expected to help us proceed with answering the first research question.

We have also particularly identified different proposals relevant to morphological variability, particularly the Missing Surface Inflection Hypothesis (MSIH), which is the underlying hypothesis used in the present study. Different work in this regard has been presented to provide a detailed introduction to the present study. In particular, the works described have been conducted with respect to how variability in morphological inflections occurs in different language contexts and occasions. Some prominent works such as the study of Erdem and Patty have been brought into our discussion of relevant research to give us further insight into what we will be discussing in the present work.

The review of these relevant acquisition works is expected to help us answer the second research question about how the absence of relevant morphological properties in the L1 affects the production of these morphemes in the L2. In addition, it will also provide important background into answering the third research question, which is also partially

related to the two children's exposure characteristics. Finally, it is expected that it will open the door for future contributions of this study, both theoretically and practically.

Chapter 3: Inflectional Morphology

3.1.1 The Process of Word Formation

First of all, we refer to inflection as forms of a word that express different grammatical functions (i.e., tense, number), as shown in examples (1) and (2) below.

(1) She *studied* at this university two years ago.
(2) There are two *books* on the table.

In (1), the word *studied* is a result of inflection from the basic form *study* to exhibit past tense function. Likewise, in (2), the plural morpheme in English (*-s*) is suffixed to the end of the noun as it is necessary to express plurality of the noun. Words are inflected mainly by adding one or more extra morpheme (prefix, suffix, infix) to the base, which results in the modification in grammatical categories of the word itself. In this section, a comprehensive discussion about this process will be presented. Theoretical framework about the architecture of grammar in generative linguistics, particularly word formation processes, will be presented. This particular section will cover a general idea about word formation processes, where a presentation of different perspectives about word formation theories will be provided. In the part that follows, we will comprehensively discuss morphological inflections in English and Indonesian. The discussion will be separated according to the relevant properties being investigated, namely agreement *–s,* past tense markings, plural *–s,* and copulas. Each section compares and contrasts the use of each respective morpheme, and how each language exhibits them in the form of morphological representations.

When discussing the process of word formation, we must be familiar with the term morphology, which is a branch of linguistics that studies the relation between meaning and form, within and between words (Fasold & Connor-Linton, 2014). Morphology generally applies at the word level, as in the change of singular noun *dog* to plural form *dogs*, which also changes the meaning of the word from just ‘one dog’ to ‘more than one dog’. In addition, morphology also applies in a broader context between more than one words, as when we match the subject and the verb in a sentence (i.e., *the dog chases* vs. *the dogs chase*) (Brown and Miller, 1991).

There are two general types of morphological processes, namely derivational morphology, and inflectional morphology. The first refers to the creation of new lexemes from the existing ones (referring to lexical categories such as verb, noun, and adjective). An example of this is the change of *permit* to *permission.* The second process, inflectional

morphology, involves the addition of grammatical information to a lexeme, according to the syntactic requirements of a language (Fasold & Connor-Linton, 2014). This process is what we will be focusing on in the present study. Consider the following sentence for our relevant example:

(3) He reads one new book every two months

The verb *reads* in the above sentence must be added to an *–s* to agree with its third person singular (3sg) subject *he.* In addition, the noun *month* must also appear in the correct plural form by adding an affix *–s* required by a quantifier *two.* In this sentence, the morphological process of affixation is used for inflectional purposes. Consider also the following sentence:

(4) *He write one new book every two month

In this sentence, the requirement of agreement between the subject and the verb, as we discussed previously, is not met. As a result, the sentence looks and sounds severely ungrammatical. Such cases are prevalent among L2 learners whose L1 does not recognize such syntactic requirements and inflectional processes. Indonesian L2 learners of English, for instance, are known to produce particular errors like this frequently.

Morphological inflection adds grammatical information in the form of one or more *properties* or *features*. Examples of such grammatical features are *number* (singular vs. plural), *gender* (masculine vs. feminine), and *tense* (past vs. non past). This grammatical information must be added to a lexeme depending on the syntactic requirements of the specific language, in the context where it is grammatically required. Consider the following sentence:

(5) Andy received two letters yesterday.

The presence of the quantifier *two* in the above sentence results in a context in which a plural feature must be embedded on the noun following it. Therefore, the noun *letter* must be properly inflected as plural (i.e., *letters*) in order to correctly match with the preceding quantifier *two*. In English, such knowledge is crucial. An absence of this would result in the production of ungrammatical sentences which is unacceptable in standard English.

Linguists have been studying the process of word formation for many years. To the best of my knowledge, there are different proposals in regards to the formation of a word. One of the views suggests that “the system of grammar that assembles words is separate from the system of grammar that assembles phrases out of words” (Bruening, 2018). This is

normally referred to as the Lexical(ist) Hypothesis (henceforth LH), with a particular credit given to Chomsky (1970). In other words, the hypothesis suggests that the grammatical system that produces words is completely separated from the one that produced phrases, resulting in an assumption that syntactic transformation cannot be used to insert, delete, permute, or substitute subparts of words.

Many have challenged the claims of the Lexicalist Hypothesis and its claims. Bruening (2018) argues that LH is both wrong and superfluous. According to Bruening, the hypothesis is wrong because of three rudimentary reasons. First, phrasal syntax can feed word formation and examples to this are available in abundance. Second, Bruening believes that there are cases where phrasal syntax can access sub-word units. Lastly, the LH is purportedly wrong because morphology and syntax obey the same principles.

3.1.2 Morphological Inflections and Syntactic Properties in English and Bahasa Indonesia

Indonesian and English are distinct in the ways the two languages use grammatical inflections. Unlike English, which recognizes inflectional morphology in many different uses, Indonesian is not considered an inflectional language (Larasati, 2012). This particular section of the chapter is dedicated to the discussion about commonalities and differences between the two languages with respect to the properties currently being investigated in the present study. In the following, we will discuss how tenses, agreement, plurals, and copulas are used in both languages.

3.1.2.1 Tenses in English and Bahasa Indonesia

The word tense derives from the Latin word ‘tempus’ that literally means time. In a language, it indicates the time of an action, event, or condition through the change of verb forms. In English, there are three basic forms of tenses; past, present, and future. From these, tenses can also be categorized according to aspects (i.e., simple, continuous/progressive, perfect/complete). In this section, our discussion will have a particular focus on past tense because only this is relevant to the present study.

English tense is considered to be one of the most challenging grammatical rule systems for many L2 learners, especially those who grow up with a language that does not mark tenses. English past tense, in particular, is challenging in a way that it carries a function to represent an activity or situation in past time. It is also somewhat complicated to learners because a verb in past tense transforms in two different ways, regularly and irregularly. By

this, it simply means that inflecting a verb for past tense requirements requires knowledge of recognizing whether a verb is classified as regular or irregular.

Bahasa Indonesia, on the other hand, does not recognize verb inflections for tense. Similarly to Malay, one of the fascinating features about Indonesian verbs is that they stay in the same form regardless of the time when an event or action takes place. It is not possible to determine the time when an action occurs or occurred without a specific context (Mintz, 1994). When it comes to past, present, or future, all that is necessary is to add words that indicate the time (i.e., *yesterday, now*) or by attaching particular aspectual terms. Examples 6 and 7 below are in past and present tense, respectively.

(6) *Dia* *datang* *kemarin*.
He come yesterday
'He came yesterday.'
(7) *Dia* *datang* *setiap* *hari*
He come every day
'he comes everyday.'

From the two examples, it quickly becomes clear that the Indonesian verb *datang* remains in the same basic form in both present and past tense, unlike the English verb '*come*' that is inflected according to the tense. Unlike Indonesian, English relies on verb inflections for tenses as shown in *came* and *comes*. Without these inflections, these sentences quickly become obviously ungrammatical for English native speakers (Sneddon, Djenar, and Ewing, 2012). Unfortunately, it is very common for Indonesians to produce English sentences without proper verb inflections such as **he come yesterday,* or **he come to school everyday.*.

To correctly inflect verbs in English as past tense, one needs to know whether they are regular or irregular verbs. Past regular verbs can be inflected by adding *–d* or *–ed* to the base form or at the back of the verb. Irregular verbs, however, are formed in various ways and fixed (i.e., *see → saw, catch → caught*). This may sound easy, but can be catastrophic when put in practice especially when one confuses past tense form and past participle.

In Indonesian, once again, verbs are never inflected for tense purposes. As mentioned earlier, the use of time signals can be the only way for an Indonesian speaker to show when an event or action takes place. Fortunately, the listener usually understands tenses by the context; thus the use of time signal is not compulsory (Djenar, 2003).

A number of different words are commonly used to show time signal or ideas in the past. To express an indefinite past, Indonesians use *sudah* or *telah* (*already*, distant or recent

past), *dulu* (*long time ago,* distant past), *tadi* (*just now,* recent past), or *baru saja/barusan* (*just now*, recent past). Refer to the following examples for a clearer understanding.

(8) *Saya* *sudah* *makan* *mangga*
I already eat mango
'I already ate mango.'

(9) *Mereka* *belajar* *tadi*
They study just now.
'They studied just now.' (Mintz, 1994)

To express past events or actions in a definite context, the word *lalu*, which simply means *ago*, is regularly used. Like in English, it needs to be combined with other word that mark definiteness in time (i.e., *day, month, year*). Examples 10 and 11 below will highlight this:

(10) *Mereka* *datang* *dua* *hari* *lalu*
They come two day ago
'They came two days ago.'

(11) *Dia* *meninggal* *satu* *bulan* *lalu*
He die one month ago
'He died/passed away one month ago.'

As seen from the examples, no inflection has taken place on the verbs in Indonesian, while English verbs have been inflected. The addition of time signals at the end of the Indonesian sentences helps the listener, especially non-native listeners, understand when the event takes place. Indonesian speakers, however, can easily understand this by context.

3.1.2.2 Agreement Inflection in English and Bahasa Indonesia

In general, agreement happens in the form of word changes (inflections) when paired with other words to which it relates. It usually involves making sure that the value of some grammatical category, like masculinity and femininity, agree with other parts in the sentence. In this particular study, our specific concern is on the subject-verb agreement in present tense context, as in the following examples.

(12) She studies English

(13) They study English

In standard English, the sentences in [12] and [13] are absolutely fine and grammatically correct. When an inflection is missing or incorrectly supplied as in *she study English* or *they studies English,* the message is still understandable, but the sentences are ungrammatical and unacceptable as standard English sentences. This is because the grammar of English requires that the subject and the verb agree in *person*. In the present tense, the

third person subject (*he, she, it*) requires a verb with suffix *–s* at the end, while the other subjects (*I, you, we, they*) do not.

English and Indonesian are different in the way each of these languages treats subject-verb agreement. Although most of the sentence structures are generally similar, such an agreement exists in one but is unnecessary and not recognized in the other. In main clauses, generally Indonesian and English follow S-O-V word order, as in the following example:

(14)	*Dia*	*makan*	*nasi.*
	She/he	eats	rice
	S	V	O

From the above sentence, we notice that the sentence structure and word order are more or less similar in both sentences, although this is not always true. An English verb needs to be properly inflected depending on the subject preceding it. In the example above, the Indonesian verb *makan* will always appear in the same form regardless of what subject it follows. The corresponding verb *eats* in English has been supplied with a suffix *–s* as it follows a third person singular subject *she/he* (Indonesian does not differentiate between female and male third person singular subject, thus *dia* is used in both).

In English, present tense verbs appear in either inflected or uninflected forms depending on the subject of the sentence. On the one hand, the finite verb in the main clause is marked with verbal agreement –s (i.e., eat*s*, sleep*s*) when a of third person singular (3sg) subject (*i.e.,* he, she, it) is used. On the other hand, when other subjects (i.e., I, you, we, they) are used, no relevant agreement morpheme is required by the verb (i.e., I eat, they eat).

Another rule that applies in English subject-verb agreement, and tends to be a problematic one for L2 learners, concerns the use of agreement when other words come in between the subject and its verb, as seen in examples 13 and 14 below:

(15) The cat, which I found two days ago, loves flowers.

(16) Hassan, along with his friends, plays soccer for two hours

The fact that other words sometimes appear in between the subject and the verb causes confusing consequences for L2 learners. Many L2 learners tend to make errors when it comes to supplying a verb that agrees with the subject especially in this particular context. With Indonesian L2 learners of English, this is also not exceptional. As the Indonesian language does not recognize S-V agreement, putting a verb away from its subject will

obviously cause a much more problematic issue in subject-verb agreement. In the above sentences, for instance, the verbs *loves* and *plays* can appear as *love* and *play*.

Besides the previously mentioned rules, there are also several other rules of subject-verb agreement that can potentially cause 'negative transfer' effect on Indonesian L2 learners of English. The use of conjunctions *and* and *or* between two subjects, for example, has been known to cause many errors in subject-verb agreement. Many Indonesian L2 learners of English, whose L1 does not differentiate the forms of verbs co-occuring with these conjunctions, are not aware of this. This can cause them to generalize the rule and produce utterances such as in the following examples:

(17) Smoking and drinking while driving cause accidents.

(18) *Smoking or drinking while driving cause accidents.

Taking into account that the verb in the first utterance completely agrees with the conjoined subjects, the utterance in (17) is grammatically correct. The one in (18), however, with conjunction *or,* contains an incorrectly inflected verb (with agreement *–s* being omitted). Indonesian speakers of English tend to make copious errors in such a context, as a result of their misjudgement on the two subjects preceding the verb (Englebretson, 2003). One might argue that this error could be related to the failure to understand the meaning or function of a marker (i.e., *or*). However, as the use of this particular marker is similar in both languages, we could propose a counter-argument that an omission of agreement *-s* in such a context is due to a failure to recognize a singular subject preceding the verb, causing the suppliance of incorrect inflection.

To sum up, English and Indonesian have several commonalities in terms of how the sentence is structured. They follow the same word order (SVO), which is advantageous to speakers of one in learning the other. In terms of subject-verb agreement in present tense contexts, however, Indonesian language does not inflect its verb to agree with the subject. All verbs appear in the same form regardless of tenses and what particular subject they follow. The fact that S-V agreement rule is not recognized in Indonesian means that many Indonesian L2 learners of English create numerous errors when it comes to inflecting verbs that follow, particularly, third person singular subjects.

3.1.2.3 Plural Marking in English and Bahasa Indonesia

In English, nouns are inflected for grammatical number. This simply means whenever inflection of a noun takes place, it either shows plurality and singularity, or whether they are countable or uncountable. In Indonesian, however, nouns are not morphologically marked

for singular or plural. In other words, no plural marking (i.e., *–s*, *–es*) is suffixed to the end of a noun. In the following discussion, we will compare and contrast how singularity and plurality are expressed in English and Indonesian.

Before moving further into technical issues pertinent to plural markings in English and Indonesian, it is worth mentioning that nouns transform into plural forms in a number of ways. With regard to English nouns, the transformation involves adding a sibilant (a hissing effect) at the end of a noun, internal vowel change, and irregular changes (especially with nouns of foreign origin) (detailed information about this will be provided in the subsequent paragraphs). Surprisingly, none of these ways of pluralizing nouns are recognized in Indonesian. Instead of doing modifications within the noun itself, Indonesian speakers exhibit plurality in a number of different ways such as using cardinal numbers, pre-noun plural markers, full reduplication, and a few other contextual ways.

When dealing with plurals, regularity and irregularity are common in English. In other words, this is an important point to consider before inflecting a noun. Non-native speakers of English tend to struggle in this topic as such regularity tends to be confusing to many. As a general rule, regular plural nouns in English need to be combined with an '*–s'* at the end, unless they fall under exceptional rules which are known to be plentiful. Such inflections are not recognized in Indonesian, yet some rules can be more complicated and uncertain than those in English.

Similarly, irregular plural nouns also require a plural marking in either one of the above forms, with no inflection at all, or in a number of other ways. Nouns that have identical singular and plural (i.e., *bison, deer, sheep*), for instance, do not require any inflection to form plural. A very rarely used form of plural involves the use of *–(e)n* morpheme at the end of a plural noun (i.e., *ox(en), childr(en)*). Some nouns even transform into a different form that is sometimes completely different from the base (i.e., *mouse → mice, tooth → teeth, person → people*). In addition to these, irregular plural of words from Latin and Greek take their own forms (i.e., *alumna → alumlnae, index → indices, medium → media)*. There are many other forms of plural in English, but due to space limitation many of them cannot be covered in this chapter.

In Indonesian, however, the rules previously discussed are not the case as nouns are never treated as either regular or irregular. Therefore, no suffix will normally be seen at the end of an Indonesian plural noun. The following comparisons emphasize this.

(19) *Daun*
Leaf
'Leaf.'
(20) *Daun-daun*
Leaf.REDUP
'Leaves.'

Plural nouns in English and Indonesian differ basically on the way they are pronounced and inflected. Unlike English, which requires addition of *–s, -es,* or *–ies* at the end of a noun, Indonesian normally requires that the noun be reduplicated to exhibit plurality (as in example 20), and that the reduplicated words are usually separated by a hyphen (Larasati, 2012). Although this is the most common way, nearly a dozen of other ways of expressing plurality are recognized by Indonesian native speakers. Before moving further, let us take a closer look at the following sentence in English and its relevant translation in Indonesian.

(21) *Buku buku* *Ø* *berserakan* *di* *Ø* *lantai*
Book.REDUP are scattered on the floor
'Books are scattered on the floor.'

Obviously, the noun *books* does not simply translate as *bukus* in Indonesian because the way each language marks plural nouns is completely different. Indonesians normally reduplicate the noun as the basic way to express plurality, especially in a formal type of speech or writing. Similar to English, plural determiners are also used by Indonesian speakers to express plurality, but the noun itself retains its basic form. Let us refer to the following example, collected from Englebretson (2003), for a clearer understanding.

(22) *Semua* *anak-anak* *tahu* *jurusnya*
All kid.REDUP know strategy-the
'All the children know the strategy.'

We notice that plural determiner *semua* 'all' is used to specify the noun especially in terms of plurality. In English, such a determiner must be followed by a noun in an appropriate plural form (in this case 'kid' with *–s* suffix). Indonesian, on the other hand, does not consider this an obligatory, therefore the word *anak* remains in its original form, but with reduplication. With the presence of a determiner, it should be easy for any Indonesian speaker to recognize the noun as plural although the noun itself is not inflected as it is in English. In fact, no Indonesian would say the word *anak,* as in example (22) above, without any reduplication if it is known that the context is plural.

In other cases, a pre-noun plural marker is used to express plurality. One of the most commonly used (personal) marker is '*para*', which always means and marks plural. The most relevant word in English that can be used to describe '*para*' is 'the', which does not

necessarily represent plurality. The word is somehow analogous to plural markers regularly used in other Austronesian languages such as *mga* in Tagalog and *sira* in Tetun. Example (19) below highlights this point.

(23) *Para guru* *meminta* *kenaikan* *gaji*
Teacher-PLU demand increase salary
'Teachers demand an increase of salary.'

With the presence of *para* in the sentence, which represents an indefinite number (Sneddon, et al., 2010), Indonesian speakers can quickly recognize the noun as having a plural meaning even though there is no numerical value preceding the noun. Whenever necessary, they can quickly transform the subject into *they* instead of *he* or *she* as the subject is known to be plural. In informal Indonesian, especially within the capital city of Jakarta, people also use the word '*pada*' in conjunction to the verb to express that the action is performed by more than one person although the subject itself is not overtly mentioned. Therefore, if we hear someone saying '*pada main* (main = play), he is simply referring to at least two people who are doing the action of 'playing'. A non-native speaker of Indonesian will hardly be able to understand such a context, as in the following example.

(24) A: *Kenapa* *kelas* *kosong?*
Why class empty?
'Why is the class empty?'
B: *Pada* *main.*
(they) play
'Everyone is playing.'

In example (24) above, the question from person A clearly indicates a reference to a group of students in the classroom. In the answer by person B, the verb *main (play)* clearly refers to plural subjects (i.e., *the students*) who, at the moment, are missing from the classroom. In Indonesian, if someone uses the word *para,* it simply refers to an action performed by more than one person. Unlike in English, overt expression of plurality in the form of *–s* is not used in Indonesian, but any speakers understand plural reference just by the choice of particular words with plural inference.

Sometimes, when a singular marker (i.e., *a, one*) is absent, it could mean that the noun is in plural form. Most of the time, Indonesian speakers would clearly emphasize if a noun is single. Therefore, the sentence *saya pergi ke pasar untuk membeli burung* (*I go to the market to buy bird*) would suggest that the speaker plans to buy more than one bird. In this case, whether the noun is singular or plural purely depends on the context and each speaker's understanding of what is being discussed.

In addition, Indonesian speakers also recognize a plural noun by referring to the same noun previously mentioned. The following example illustrates this.

(25) *Dia membeli tiga buku. Buku tersebut mahal harganya*
He bought three book book those expensive price.
'He bought three books. The books are expensive.'

In Indonesian, reciprocal verbs always imply that the noun is plural even though it appears without any determiner or anything that marks plurality, as in the following example.

(26) *Orang yang berhadap-hadapan itu …*
Person who face-each-other that…
'The people/persons who face each other …'

First of all, the word '*orang'* always means one person in Indonesian. In order to make it plural, one needs to add number (i.e., *dua orang* = two persons) or simply reduplicate it (i.e., *orang orang*), for instance. The presence of a reciprocal verb *berhadap-hadapan* definitely helps communicating parties recognize that the 'actor' of the action must be more than one person. Indonesian speakers do not require any inflection to the noun to express plurality in this particular case. As a result, this is usually predicted to reflect in their production of relevant properties in any language that marks plurality (Luk and Shirai, 2009).

Very often, Indonesian speakers use logic and semantic consistency to understand that particular nouns should be referred as plural. This is commonly defined as knowledge of the discourse situation. Let us review the following examples to explain this.

(27) *Orang Rusia tahan dingin*
Person-PLU Russia resist cold
'The Russians are cold resistant.'

We know, that when we refer to the citizen of a certain nationality, the noun should be regarded as plural unless a singular noun marking is otherwise used. In Indonesian, singularity is always pronounced (normally by using classifier ***se-***, as in '***se***orang', which means '***a*** person' in English), while plural nouns are often left with the context (Sneddon, et al., 2010). In sentence (27) above, the phrase '*orang Rusia'* certainly means more than one *Russian* although it is not overtly specified. For Indonesian speakers, such a marking is unnecessary and excessive; thus it is always absent in the morphological expression (Mintz, 1994). This is also true with the social context in which a conversation takes place. For instance, when an Indonesian speaker looks at a mango tree with a bunch of mangoes hanging from it and say *mangga itu besar-besar* (the mangos are big), he does not

necessarily need to specify 'those mangos'. Any Indonesian on the street knows that the person is referring to more than one mango, although the noun used (*manga)* has a singular form. In fact, the reduplicated adjective *besar-besar* is often used to clarify that the noun it refers to is plural (Sneddon, et al., 2010).

To sum up, Indonesian language does not morphologically mark singular or plural nouns. A vast number of publications related to the Indonesian grammar system (see Sneddon, et al. 2010, Mintz 1994, Englebretson 2003, Djenar 2003) have confirmed that there are many different ways of expressing plural (more than one) nouns in Indonesian. This is usually done by placing a determiner preceding the noun. Unlike in English, the plural noun itself does not require an *–s* attached to the end of it. Let us refer to the following table for direct comparison between English and Indonesian:

Table 4: Plural markings in English and Indonesian.

	Indonesian	**English**
Plural determiner	Tiga orang Banyak *orang* *Orang-orang*	Three person*s* Many *people* *People*
Pre-noun plural marker (human only)	*Para* siswa	Student*s*
Noun with reciprocal verbs	*Pendapat* yang berlainan *Rumah* yang berhadap-hadapan	Different *opinions* *Houses* facing each other
Noun with reduplicated adjective	Besar-besar *ikan* itu.	The *fish are* big.
Logic and semantic consistency	*Orang Inggris* suka main bola	*The British people* like playing football

In fact, in many occasions, Indonesian speakers refer to the context of the discourse in order to indicate plural, and therefore no particular wording or morphemes are required to express it. Indicating plurality is simply acceptable by adding 'group words' and numeric words (i.e., *beberapa, banyak, para, dua*) in front of singular nouns (without plural marker *–s)* as in *'banyak orang* (many people)*, beberapa orang* (some people)*, para siswa* (the students) and *dua mobil* (two cars). Plural personal pronouns like *mereka* (they) and *kami/kita* (we) certainly show plurals although they can be followed by single nouns. To summarize, there is no specific morpheme in Indonesian language that is used to indicate plurality except by adding specific determiners in front of the noun itself.

3.1.2.4 Copulas

Copulas are usually known as linking verbs in many languages. The main role of copulas is to mark the division between the subject and the predicate. In the case of English, this is the verb *to be.* Although it is not universally the case, English copulas can function as verbs, or verb-like words, unless they take the position of an auxiliary. When functioning as a verb, it is usually called a copular verb, while when it takes the place of an auxiliary, it is called an auxiliary verb. Sentences as presented below are commonly found.

(28) s*he **is** a nurse* (copular verb)

(29) *she **is** working at hospital* (auxiliary verb).

As mentioned earlier, the main function of a copula is to link the subject of a clause to the predicate. As seen in sentence (28) above, the pronoun *she* is the subject, while the verb *is* serves as a copula, followed by the noun phrase *a nurse* as a complement of the copula. The copula and its complement, in this case *is a nurse,* is usually known as predicative expression (Sneddon, et.al., 2010). In English, the complement of the copula can be a noun phrase, a verb phrase, an adjective phrase, an adverbial phrase, or a prepositional phrase. In these particular forms, English copula must agree with the preceding phrase even if they are not logically the subject of the sentence. The following examples illustrate this:

(30) Rudolph and Elizabeth **are** partners

(31) The sky **is** dark

(32) I **am** the tallest in my family

(33) The cause of the fight **is** the girls

In regards to examples (30), (31), and (32), the copulas *are, is,* and *am* appear to be agreeing with the preceding noun. However, in the last example, the presence of noun phrase *the girls* as a complement could be the cause of confusion to many L2 learners. In fact, the actual phrase to which the copula should agree with is *the cause,* which requires a singular form of a verb. Meanings and functions of copulas in each of these sentences are not the same. In the first, the copula shows a relationship between the subjects. The copula in the second sentence displays properties or characteristics, while in the third example it shows the position of the subject among others. The last is simply a complement.

Apart from its function as the copula (linking) verb, additional use of copulas is usually seen in a passive and progressive sentence, as in examples (34) and (35) below. In these particular conditions, the copula adds functional or grammatical meanings to the

clause. In other words, it is attached to the main verb as an auxiliary. The following examples summarize this point:

(34) They **are** playing at the playground

(35) It **was** bought three years ago

In example (34), copula *are* is used in a progressive sentence alongside the present participle *playing* to form a progressive sentence. The copula *are* in this case does not function as a main verb. Instead, it acts as an auxiliary so that the verb itself can function to form a progressive meaning. Similarly, in the second example, *was* is present along with the past participle *bought* to form passive voice. As in the first example, the copula here functions as an auxiliary thus the main verb cannot function or carry its functional meaning (passive) without the auxiliary (Byrnes and Nyimas, 2003).

English copulas might not have corresponding parts of speech in other languages. Indonesian, for instance, does not recognize the use of copulas and the auxiliary 'be'. In many cases, this part of speech is usually substituted by *'adalah'* or *'ialah',* which correspond to linking verbs or carry the meaning of *is, am,* and *are* in English (Sneddon et al., 2012). The two forms can be used in place of the other, except *'ialah'* which is normally used after third person subjects (Djenar, 2003). The following examples give head to head comparison about how this word is used.

(36) *Dia* *adalah* *seorang* *siswa*
She a student
'She is a student.'

(37) *Saya* *adalah* *seorang* *siswa*
I a student
'Saya *adalah* seorang siswa.'

(38) *Mereka* *adalah* *siswa*
They student
'They are students.'

(39) *Kimono* *ialah* *salah satu* *jenis* *pakaian* *orang* *Jepang.*
Kimono *is* one of type clothing people Japan
'Kimono is a type of Japanese people clothing.'

The word *adalah* 'be' is usually omitted in informal or spoken Indonesian. It is considered too formal if it is used in a spoken context. Therefore, most Indonesian speakers will try to avoid using this when communicating in informal settings. Additionally, *adalah* is not used when telling time, showing adjectives, and passive sentences. In many occasions of daily conversation, sentences like *ini rumah besar* 'this is a big house' and *ini anjing* 'this is a dog', where the linking verbs are omitted, are very common among Indonesians (as

presented in Wolff, 1986). With particular reference to our previous discussion about past tense, I would also like to emphasize that the use of copulas in past context, as in *she was rich,* is also not recognized in the Indonesian grammar system or by any Indonesian speakers.

3.2 Summary

We have discussed different theories pertinent to the process of word formation and morphological inflection in English and Indonesian. By now, we should be informed that word formation is a complicated and systematic process. Hypothetically, a lot of activities or processes are involved in the forming of one single word of a language, such as English. The present study investigates how six morphemes are used in L2 by two L1 Indonesian children. For this particular reason, we have pointed out the differences between the two languages especially the ways in which morphemes are realized and how that would affect a child's language production in L2.

English and Indonesian certainly differ in the way they mark morphological inflections. From our discussion above, we have seen that 3sg agreement morpheme *–s* in English does not have corresponding morpheme in the Indonesian language. In other words, the Indonesian language does not mark agreement; thus errors are expected to occur in L2 English produced by Indonesian L1 speakers when they use agreement marking in their utterances. Similarly, as Indonesian tenses are much more simplified when compared to English, Indonesian speakers of English are likely to produce a large number of errors in tenses, especially regular and irregular past tense. This is due to the fact that the Indonesian language, unlike English, does not inflect verbs according to when an event or action takes place. Finally, we have also been informed about how singular and plural nouns are marked in both English and Indonesian. As these languages differ in the way they mark plurals, it is most likely that the English plural morpheme *–s* will produce a large number of errors by Indonesian L2 learners of English.

Chapter 4: Methodology

4.1 Introduction

Given the previously discussed findings of L1 and L2 acquisition studies, the present study has been designed to examine similar phenomena within a different L1 context. The main objective is to explore the issue of missing inflections among two L2 learners whose native language (Indonesian) does not exhibit or mark particular morphemes as displayed in L2 English. It is hoped that the study will be able to contribute to the field of Second Language Acquisition by addressing some theoretical questions of bilingual and child L2A with a new language family brought to the existing studies. This particular study investigates how specific morphological and syntactic properties of the second language (English) are acquired during the initial period of language acquisition (one year) with regards to learners L1 (Indonesian) - L2 (English) differences.

The study investigates the early language development of two children. The emphasis is on the acquisition of inflectional morphology and some English grammar properties whose rules are distinct from the grammar of participants' L1. The selection of these properties was prompted by the fact that these morphemes are not overtly marked in the grammar system of Indonesian (detailed explanation about this is provided in Chapter 3). There will be some variations in the productions of these properties by the participants in the L2 context. In fact, a lot of L2 learners of English, including Indonesian ESL learners, suffer from 'negative transfer' (Gass & Selinker, 2001) as a result of these grammatical differences between English and their L1.

There have been very few studies covering the lengthy developmental process of the acquisition of English as a second language by Indonesian learners of English as a second language, especially in an English naturalistic environment. What makes such a study interesting is that many grammatical features in Indonesian are quite distinct from those of English. To exemplify, Zhang and Widyastuti (2010) have suggested that the Indonesian language does not exhibit its grammatical features (i.e., number, tense, and person) and values (i.e., 1st/2nd/3rd person) in the lexicon. As a result, an agreement feature in a sentence like *my father smokes (ayah saya merokok)*, for example, is never marked with relevant agreement morpheme (i.e., *–s*) in Indonesian. The verb '*merokok'* is therefore expressed similarly (i.e., with no additional morpheme) regardless of the subject.

Zhang and Widyastuti specifically investigated the status of morphology in the L2 English of three members of an Indonesian family in Australia within the framework of the

Processability Theory proposed by Pienemann (1998). In addition to suggesting that the informants were at different morphology stages, they also found a systematic developmental profile of each informant in line with the developmental hierarchy for English morphology which follows the order or lemma, lexical morphology, phrasal (VP/NP morphology), and S-procedure (Pienemann, 2005).

The current study offers a unique contribution to bringing a new family of language into the existing languages already studied in the field by looking at how the absence of a particular L1 (Indonesian) morphology and syntactic properties affect the acquisition and production of these morphemes in English as an L2. It is expected that the current study will be able to highlight how particular properties, which are not morphologically marked in learner's L1 (Indonesian), affect the production of L2 and how they appear structurally in L2 (English). In addition, we are seeking all opportunities to bring the results of this particular study into explanations of how children acquire and produce English morphology if they come from an L1 that does not have overt morphology and only marks grammatical meaning (of the specific properties being investigated) through context.

4.2 Research Design and Method

In this particular study, audio recordings from natural interactions were used as the primary data. This naturalistic type of data is commonly considered a reliable indicator of the way grammar in a second language is acquired by L2 learners. Therefore, every effort was made in this study to provide a comfortable environment to collect data from the two participants. In order to make sure that data collected were sufficient and ecologically valid, a wide range of tasks and activities were designed for data collection purposes. The tasks and activities were then used to stimulate as much oral production as possible in a spontaneous setting. One of the main reasons why I opted for such data was its ability to draw out general patterns of language development and grammatical properties being investigated (Tomasello & Stahl, 2004).

Most of the tasks were initially developed by the researcher, but in many conditions had to be adjusted according to the needs at a specific time of recording. The details of tasks and activities applied during data collections are as follows:

1. Freeform interviews and conversations.

In this task, the child is invited to have an open topic conversation with an interlocutor. This particular task is used when other activities are seen to have a minimal stimulus in promting the child to talk. In such a condition, the interlocutor, sometimes the

researcher himself, adjusted the situations accordingly and began prompting general questions related to specific topics. These topics had been initially prepared and were chosen properly according to the child and their familiarity with what was to be discussed. In fact, free conversation was used very frequently with the younger child, Mawar.

The use of a free form interview and conversations stimulated more productive and usable data from the child. This was made possible due to the fact that the number of people involved in the conversation was kept at a maximum of three in each round. In addition to the interlocutor and the target child, the conversation was usually attended by a person well-known to the child. In this case, it could be the child's friend or either parents or a sibling. With this kind of activity, the child was able to produce more utterances due to the availability of more speaking time. As a result, more data were available for further analysis.

2. Games (i.e., Scrabble game and guessing words)

Games were one of the most interesting activities that the participants loved. There was no specific selection of game for the data collection purposes, but the most favorite one chosen by the participant was Scrabble game. Unfortunately, the use of this particular game was only applicable to the older child, Melati, due to the fact that Mawar was still too young for such a game.

In addition to Scrabble game, Melati was given free options to bring her own games, which she did with a kind of card game. With the use of games, more people were usually involved in playing, but most of the time the only person involved besides the interlocutor was Melati's best friend, Azka. Having more people involved in the recording means less language production could be recorded from the target child. To deal with this, the recording session with games was usually extended to around 90-100 minutes, allowing more output of speech from each respective target child.

3. Retelling stories

By having retelling story sessions, each target child was expected to produce more verbal utterances in one opportunity. Although it was not usually used as an independent activity, retelling story sessions were particularly useful as a filler between two other activities. Often, the target child was asked to talk about a holiday trip she had gone on in the past with her family. A question like *'what did you do last Sunday?'* could trigger more subsequent conversations and questions, leading to an increasing amount of verbal language production by the child.

Both Mawar and Melati loved talking about their holidays. Melati, who was nine years old at the time of data collection, could independently tell more about her holidays. Therefore, more data were successfully collected from her. In contrast, such an activity was found to be more challenging with Mawar at the beginning of data collection due to her initial state of exposure to L2. However, she appeared more confident in answering such a question as time progressed, especially during the final three months of data collection period when her linguistic skills were much improved.

4. Spotting the differences

This was probably the easiest and simple task. A set of printed sheets consisting of two corresponding (but different) objects were presented to the target child. The child was asked to recognize the difference between the two pictures and talked about them verbally. More than one pictures were provided so that more language production could be recorded.

Unfortunately, only Melati was involved in this activity as Mawar was too young for it. As in the previous other activities, Melati's best friend, Azka, was also invited to play. Having Azka in the team helped trigger more language production from Melati and therefore this was beneficial to the research. The use of this game was not very frequent in the data collection, but it played a very important role in making sure that the child produces more verbal data required in the recording session.

5. Other activities (cooking, barbeque & picnic).

In addition to the previous four activities, target children were often invited to gather in cooking sessions and picnics in an open area like a park. When doing an indoor activity like cooking in the kitchen, the recording was easy to make as noise did not usually penetrate to the kitchen area. On the other hand, with an outdoor activity at the park, i.e. barbeque and picnic, the recording was more challenging due to the surrounding noise. As a result, a few sections of the data were useless when noise was excessive and no transcript could be produced.

Both Melati and Mawar were involved in these activities. However, only productions from Melati were used in the analysis. The amount of data from Mawar, unfortunately, was very minimal from these activities as she frequently opted out of the conversation. However, some of her utterances considered useful to track her language development have been kept in record for future uses.

Why case study?

There are many reasons why case studies are chosen as a research mode instead of many other research settings. According to Mackey and Gass (2013), the objectives of case studies are mainly to provide overall description within a specific population and setting. This particular study aimed at exploring language learning and development within a specific group of two Indonesian bilingual children whose L2 acquisition took place in a naturalistic setting. Choosing a case study has enabled us to have access to detailed descriptions of each particular child within the acquisition setting.

A very well-known case study by Schmidt (1983), as previously mentioned in Chapter two, is an excellent example of a longitudinal case study that looked at L2 competence of an ESL learner. As a longitudinal research, it took the researcher three years to fully collect the data from the learner, Wes. Looking at specific grammatical features (i.e., plural *–s,* third person singular *–s*, and regular past tense) throughout three consecutive years, Schmidt was able to reach the conclusion that Wes had had a small improvement in terms of linguistic accuracy.

By looking at this example, we can visibly recognize that case studies emphasize detailed contextual analysis of a limited number of features included in the analysis of one single learner. By doing a case study, we seek an opportunity to understand a complex issue or object as well as to extend experience or add strength to what has been done by other researchers in the past (Soy, 1997). Case studies are known to have advantages and limitations.

One central advantage of case studies, which group research does not possess, is that they enable the researcher to focus on one particular individual within a certain period. Unlike other research methods involving survey and experiments, for instance, case studies provide detailed insights about particular learners, teachers, or classes. In addition to this, case studies are also able to include more than one individuals or groups if the purpose is to compare and contrast their behavior in specific contexts (Mackey & Gass, 2013).

The present study puts its central focus on L2 acquisition and development by looking at data collected from two different informants. The two different case studies will clearly provide valuable information about how L2 acquisition takes place and develop over a one year period. Although no generalization can be made about the whole population of Indonesian children in the UK, the study clearly illustrates each participant's language acquisition stage during that particular period.

Something to bear in mind about case studies is their reliability and generalizability of findings, especially in regards to the number of participants being involved. Proponents of this type of research method believe that the results from a single case study can only be generalized to a larger population (all the L2 children that are acquiring English) in an exceptional case. By this, it means that such generalizations can only be made tentatively and carefully to children with similar language backgrounds or, for instance, children at similar ages. In fact, a single case study risks possible misinterpretation, but a combination of some helps researchers draw firmer conclusions from their research. An example of this is a study by Wray (2005), which looked at multiple cases that focused on the role of formulaic sequences in child L2 acquisition.

Considering what has been discussed earlier, it is believed that a case study is a correct method to apply in this particular research and that it will be able to provide valuable insights into certain developmental aspects of L2 acquisition by the two respective participants of this study. However, it is also worth keeping in mind that when studying only a few children, no generalization can be made about the whole population of Indonesian children in the UK. Therefore, the result of this study may be generalizable to L2 children learning English who come from language backgrounds similar to Indonesian.

It is perhaps important to point out that a lot of second language research methods originate from research methods of other disciplines and areas such as linguistics, child language acquisition, sociology and psychology (Gass & Selinker, 2001). Therefore, it is common that the methods used in these disciplines are often related to each other. In second language studies, two principal ways of data collection are known: one is longitudinal and the other is cross-sectional.

Describing and following the developmental process in detail, this research was run longitudinally as a case study. Instead of a cross-sectional approach, a longitudinal study was chosen because it helps the researcher observe the process of transitional aspects of language acquisition. Larsen-Freeman and Long (1991) believe that a longitudinal instrument is more naturalistic due to the use of spontaneous speech, compared a cross-sectional approach that usually employs artificial tasks. Moreover, data collection in longitudinal research takes place over time (process-oriented), while cross-sectional data collection only takes place at one point in time (outcome-oriented) (Iwasaki, 2004).

A cross-sectional research usually examines the language behavior of one, a group, or several groups of learners at a single point of their development. In contrast to the cross-sectional studies, longitudinal research examines the development of language behaviour of

one or more language learners over a period of time. As the data of such studies are usually collected from a single learner, or at least a small number of participants, longitudinal studies are normally considered as case studies (Gass & Selinker, 2001). In this type of study, how long the data collection can take place, and how frequent it should be, may vary and is different according to the case being investigated and what research questions are due to be answered. Depending on the availability of time and many other factors, the data can be collected daily, weekly, biweekly, monthly, and so forth.

The present study follows the route of a descriptive-quantitative longitudinal design, which is non-experimental. There was no manipulation by the researcher as the data collected was purely based on naturalistic occurrences. Since the number of participants is relatively small and its multiwave data collection covers a relatively long period of time, twelve consecutive months in this case, the use of inferential statistics was not considered (Ortega & Iberri-Shea, 2005). In this regard, the data was then collected repeatedly over a certain period to track growth and development. It is then presented appropriately in frequencies, percentages, or other relevant display methods so that it highlights the necessary information to be discussed later on.

4.2.1 Subjects and Interlocutors

Initially, four participants agreed, through parental consent, to take part in the study. Two of them had just turned two years old when the first data collection session took place, while the others were nine years old. The reason behind having these two age groups was because the researcher intended to have two separate clusters of data from simultaneous and successive bilingual children. In this matter, the younger children were considered simultaneous bilinguals because they started acquiring their L2 at the same time as they were developing their first language. On the other hand, the older children were classified as successive learners because their proficiency in their first language had been established when they started learning English as their L2.

Unfortunately, one of the younger children had to leave England for several months after the first three recording sessions had been completed. After several difficult considerations, I decided to drop this child as keeping him in the research would have caused further difficulties in data collection. This conclusion also resulted in the decision to leave out another child from the older group. This was due to the disparity of data from each group, as one group consists of only one child being investigated.

The two research participants were not at the same chronological age when the study commenced. The two bilingual children, Mawar and Melati (2;4 and 9;3 years old at the commencement of the study, respectively), participated as the main subjects of the research from which the data were continuously gathered over the previously stated period of uninterrupted recording sessions. We intentionally did not equate their ages because, as Brown (1973) suggested, children acquire language at different rates. At least, this has been proven in a number of earlier studies. Instead of equating their ages, we calculated the mean length of utterance (MLU) as an index of grammatical development.

The following table summarizes important information about the two informants, followed by a detailed discussion about them.

Table 5: Production data of the two participants.

Child	**Age**	**Transcript Files**	**Total Utterances Collected**	**Total Morphemes Collected**	**Initial – final MLU**	**MLU mean**
Mawar	2;3 – 3;3	12	4,390	12,030	1.92 – 3.72	2.65
Melati	9;2 – 10;2	12	3,516	15,205	4.69 – 5.39	4.63
Total		24	7,906	27,235		

1. Mawar

Mawar is the first and only child in a relatively young family. Mawar and her parents came to the UK because her father was due to start his doctoral study at one of the universities in the United Kingdom, while her mother had applied to start her master's degree the following year. It is also important to mention that both of them work in the field of English language teaching and speak fluent English. Mawar was born on the 4th of September 2012 and just turned two years old several months before the commencement of the study.

At the initial time of the study, Mawar was enrolled in the university's nursery, which was called Early Years Centre. She attends this nursery twice a week for five hours each. This is the environment where Mawar was fully exposed to an English language speaking environment. In addition, Mawar also randomly attended different community center play groups within her residential area. When the study reached the fourth month in April 2015, she went for a few weeks holiday in Indonesia and returned to nursery immediately on the

following day arriving back in England. She also took another holiday in July to celebrate Ramadhan and Eid in Indonesia. Fortunately, her parents confirmed that being away from an English speaking-environment had not caused any downturn in her English proficiency. Even though she speaks mostly in Indonesian with other members of family, Mawar still speaks English frequently with both parents when they are back in Indonesia. This has helped in keeping her English skill at the current level.

In the eighth month of the study (August 2015), Mawar moved to another nursery due to parental preference. According to my observation, she was still reluctant to speak with carers and other children within the nursery. She, however, clearly understands all English words, phrases, and sentences uttered by anyone else. This is shown by her ability to react and respond to daily commands, instructions and questions addressed to her. According to her key person, or a point of contact for parents, at the nursery, at this point she communicated with other children mostly in physical expressions and body language. Amazingly, she responded to adults in clear structures of daily English. This is similar to what she does with her parents, to whom she speaks both in Indonesian and English all the time.

Around the final trimester of the data collection period, Mawar started to show remarkable development in her English. Despite still being a little bit passive with strangers, she has already demonstrated constant development in her English verbal production. Her utterances have changed from short two to three-word phrases to simple sentences like *'that is a beautiful house'*. In addition, she has also been able to produce negative and interrogative sentences.

2. Melati

Melati is the first child in her family. Her father, a university lecturer in an Indonesian university, is a Ph.D. student at the University of Southampton. Her mother is also a lecturer and owns a business as well. She has a brother, Mustafa, who was also attending his first year in elementary school during the time of this research project. They all arrived in England in October of 2013 and were scheduled to stay here until Melati's father completed his study in 2017.

Melati was born in Indonesia in 2005, thus at the commencement of the study she had just turned nine years and two months. She attended Portswood elementary school in Southampton and was currently in the third grade. Her exposure to English was maximum as she attended the school every day and frequently spoke English with her brother, Mustafa,

and her parents. Although still communicating in Indonesian and Javanese, one of the local languages in Indonesia, Melati's parents admitted that her use of English was around 60% at home, compared to Javanese and Indonesian which were approximately 30% and 10% respectively.

Outside the home, Melati speaks 100% English during school except at the weekend when she usually meets her Indonesian friends at weekly gatherings. At these occasions, her parents believed that Melati communicated in English (sometimes also Indonesian) with other Indonesian children, but switched to Indonesian when communicating with adult Indonesians. I was able to confirm this statement by personally and frequently observing her interactions with others over the weekends and whenever we had gatherings. During the first half of the data collection period (January – June 2015), Melati used more Indonesian when communicating with me. However, in the second half (July – December 2015), she started to initiate conversation with English and seemed to avoid using the Indonesian language.

Her language development was very obvious to my observation. She arrived in England with very minimal English (according to her parents, she took some English classes three months before departing to England), but understood simple commands. One year after arrival, which was when the research commenced, she was able to speak clearly but with a large number of grammatical errors like inflectional morphemes. After two years, which was also the end of the data collection period, many of these errors had already disappeared. However, a lot of the errors seemed to stay, and she seemed to keep these in her language development path. A more detailed discussion about Melati's language development will be discussed in a relevant chapter.

There are a couple of reasons why the two participants were selected as the main informants for the study. The first reason is pertinent to their age, which in turn affects the production of the early bilingual data we intend to investigate. The initial main target of the study was to gather information about how Indonesian L2 bilingual learners develop particular English morpho-syntax properties within a certain period. Considering the differences between the grammar of English and Indonesian (for instance, the absence of agreement and plural morphemes in the Indonesian language), possible L1 influences on L2 acquisition were carefully taken into consideration. For this reason, the author decided to take into account whether or not their L1 had been established before the commencement of the study. This is why the two participants were selected from two different age groups. In fact, the two-year-old Mawar just started to understand a considerably small amount of Indonesian words or short phrases when the first recording commenced. We assumed that,

perhaps, her grammar was not fully established at the time so that her production seemed to be very limited. This phenomenon applies to any languages an L2 child is trying to acquire (Klassen, 2014). On the other hand, the nine-year-old Melati was speaking Indonesian fluently at the time. It is then fair to say that she was acquiring English long after her L1 had fully been established, unlike Mawar who developed both Indonesian and English at the same time (although she was initially exposed to the Indonesian language during her first year of life after birth).

To differentiate between the two subjects, it is perhaps essential to take into account a statement by Grosjean (2001) who argues that 'bilingual is not two monolinguals in one person', which is because bilinguals do not usually use their languages equally when communicating with others. In addition, Meisel (2008) has argued that this type of bilingual learner would encounter difficulties in separating the vocabulary and grammar rules of the languages he or she is acquiring, especially when it comes to mixing languages in conversation. Taking the two arguments into consideration, it is then essential for us to present the data from the two subjects separately so that our findings can be presented appropriately.

According to Meisel (2008) and (2011), there are three types of bilingual acquisition. The first one is called simultaneous acquisition of bilingualism (2L1), which applies to the child who acquires the second language(s) during the first three or four years after birth. The second type is called child second language (L2) acquisition, which happens between ages 5 and 10. According to their age, our younger subject, Mawar, is part of the first group, while Melati is included in the second. Additionally, if the acquisition happens after the age of ten, then this third group is called adult L2 acquisition.

The selection of the two subjects was the result of long and careful consideration. This study originated with four target participants, two of whom were regrettably excluded from the study within the first quarter of data collection period due to unexpected personal circumstances. We then decided to proceed with the study with just two participants, Melati and Mawar. Each child was recorded once a month, twelve times in total. It took exactly a year to complete the data collection with Mawar, but we had to add a few more months for Melati due to her absences during family trips.

Interlocutors

In addition to the two participants, at least five different interlocutors, including the researcher himself, participated as the children's conversation partners. Two of them were

native speakers of English, while the rest were Indonesian interlocutors who speak fluent English. The reason for using different interlocutors was to minimize differences in the outcome of the research. Therefore, as many people as possible were chosen to interact with the children. For this reason, the researcher included interlocutors who knew the child very well, including native speakers of English. Sometimes, the parents of the child were also involved in making sure that the child was willing to produce as much oral language as possible.

4.2.2 Data Collection and Analysis

4.2.2.1 Data Collection Procedure

The process of collecting data started from an *initial visit* to the participant's home. This visit was necessary to set up further meetings and recording schedule with the participant and parents. The initial visit was also conducted to ascertain the child's English proficiency at that point in time, especially in regards to the above requirements. It was also crucial to deal with parental consent and permission concerning how the child would be participating in the research. Consent forms in the required format had been provided in accordance to the university's ethical regulations. Only with parental approval could a child be involved in the study.

Following the initial visit, *interviews* with parents were conducted to get background information about the participants' dual language environment (Iwasaki, 2004). The interviews were recorded and used to support the primary data obtained from the recording transcript and day-to-day observation about the child's linguistic development. The researcher was provided with a digital questionnaire called UBiLEC in which all the information gathered from the participants and their parents were recorded. This information consists of the participant's language exposure data at the commencement of the study. Similar information would also be collected at two particular points of time, during and at the end of the study.

The data collection itself took place over approximately one year. This longitudinal data collection involves following and recording the interactions between the children, interlocutors, and friends in a naturalistic environment. This means that there were no pre-determined settings of the conversation. The recording itself ranged from 30 to, in a number of cases, over 100 minutes due to the fact that children sometimes talked and sometimes did

not talk uninterruptedly during the recording time. An average of one to two recordings were made every month with each child, totalling 24 sessions in 12 months for both participants.

Data in this study have been collected in several different ways. In order to determine the children's language use, information was collected through interviews with parents and, when possible, with the participants themselves. The data were then entered into UBiLEC questionnaire forms for further analysis. The primary data, child language production, were collected through monthly recordings, accompanied by field notes. The following sections will thoroughly discuss these data collection processes.

4.2.2.2 The UBiLEC

UBiLEC (Utrecht Bilingual Language Exposure Calculator) is a customized questionnaire designed to obtain general information about bilingual children's language background and use. It was originally developed by Sharon Unsworth and published at the University of Utrecht. Available both in a printed and digital version using Microsoft Excel, it asks specific questions such as where and when the children use languages (if more than one language is applicable), their proficiency, year of exposure, and many other specific items. Designed to be used with children aged between 2 – 18 years, UBiLEC collects important information about how (quality) and how much (quantity) a child is exposed to a particular language at the current time as well as calculations of his/her cumulative (over a period of time) language exposure. All these types of information have been collected through in-depth interviews with parents and, when possible, each respective participant. These interviews were carried out at three different points of time; during the first, sixth, and twelfth months of data collection. The reason for this was due to an assumption that participant's amount, length, and quality of language exposure varied during the data collection period and that these could affect their production data. Figures from UBiLEC will be challenged with child MLU data to see how language exposure can affect their production.

According to Unsworth (2012), UBiLEC in part directly follows already existing questionnaires and works by incorporating a number of algorithms in order to estimate different aspect of children's language exposure as mentioned above. In the subsequent sections, we will discuss how UBiLEC has been helpful in gathering and calculating all the information from each subject. This will cover an overview about the two participants' CAE (Current Amount of Exposure), CLE (Cumulative Length of Exposure), and CQE (Current Quality of Exposure). The complete data collected by UBiLEC will be discussed and presented in chapter 5 along with other relevant data.

4.2.2.3 Monthly Recordings and the Available Data

Monthly recordings were parts of the data collection process from which the majority of data in this study were gathered. Since the purpose of this particular study is to observe the path of a child's language development, it was important to record their language production as constantly and frequently as possible. For the present study, each child was recorded at least once every month for an average of 60 minutes in each recording session. The length of each session varied depending on many contributing factors. The shortest recording was around 30 minutes, while the longest one took more than 100 minutes, which occurred on a number of occasions.

The recording took place at various different locations and settings. Many were done within the participants' home environment where the interlocutors attended pre-arranged appointments with the child's parents. In addition to these, several other recording sessions were also held at nearby parks or playgrounds, including a few occasions when the child was on a holiday trip with her family. Every effort was made to ensure that the maximum amount of natural L2 production could be elicited from the child, without the noticeable presence of non-natural devices such as a voice recorder. For further reference, details about all the recording sessions with each research participant has been provided in appendix A.

4.2.2.4 Data Transcription, Coding and Analysis

4.2.2.4.1 Transcription

In the present study, the work of transcribing the audio files was the most labor-intensive and time-consuming. Considering the amount of audio data already collected, only the features of interest for the study were transcribed. In general, all utterances produced by the target children were transcribed, while interlocutors' utterances were transcribed when necessary and provide important information (i.e., context of conversation). On some occasions, the researcher, who is also the transcriber, found that it was sufficient to listen to the data and mark appropriately on the coding sheet whether relevant features were present or absent (Mackey and Gass, 2005).

4.2.2.4.1.1 Transcription and Coding Criteria

As mentioned above, only relevant utterances were transcribed for further analysis. Transcription conventions and codes easily recognised by CLAN (Computerised Language Analysis) software have been applied in the transcription data within the software. These

were used mostly to run specific analysis commands that are too complicated to calculate manually, such as MLUs (Mean Length of Utterances). Further and specific discussions regarding this can be found in later relevant sections.

A set of coding criteria for classifying learners' errors was then determined for coding purposes. These criteria were used in manual coding of learners' errors with regards to morpheme suppliance such as omission and commission. They are also particularly important to be used by other coders in their own independent coding to achieve high degree of inter-coder agreement (this will be discussed further in the next section). Coding criteria used in this process take into account the calculation of morpheme suppliance using the Suppliance in Obligatory Context (SOC) formula (discussed separately in morpheme quantification section). Essentially, the coder or rater is required to identify every single obligatory context in which each morpheme is required to be present according to standard English requirements (i.e., *agreement –s* morpheme is required in a present tense verb following a third person singular subject). When a morpheme is absent or incorrectly supplied, the coder needs to mark it accordingly as an error. In this particular case, this refers to either error of *omission* or error of *commission*. In the case of omission error, where no functor is supplied (i.e., *He love chocolate*), this should be coded as no-suppliance (NS) in the transcripts. Therefore, coding works of such errors is relatively simple and straightforward.

With regards to commission errors, the work is slightly more challenging, as this type of errors includes the following: (1) any application of morphemes in the wrong places (i.e., *you eat**s**, they **was** sleeping*) or using the wrong morpheme (i.e., *we is* instead of *we are*); (2) double marking of an auxiliary (i.e., *she **is are** sleeping*); and (3) substitution of *do* for *be* (i.e., *no, I **do**n't grown up, what **do** they cooking?*) (Paradis, 2005, 2008). All such errors should be coded as an incorrect suppliance. In most of their works, prominent scholars such as Brown (1973) and Dulay and Burt (1974) also refer to such errors as *misformation,* the terminology which will also be frequently used in this dissertation.

Fundamentally, coding work also needs to take into account the inclusion and exclusion of specific morpheme(s) production into relevant calculation. In this study, we targeted four morphemes frequently studied: the copula and auxiliary *be*, 3sg *–s,* past tense marker*,* and plural *–s.* With regards to the copula *be,* everything in the present and past contexts (i.e., she *is* a student, they *were* mad) is included. Likewise, the auxiliary *be* includes the use of *be* as an auxiliary in the present and past progressive sentences (e.g., she *is* studying, they were sleeping) and passive voice (e.g., it *is* bought, we *were* chased). As for

the agreement marking *–s,* we included any verbs containing *–s*, *–es*, and *–ies* suffix. In addition, *has* and *have* are also included in the calculation, including the negative form *hasn't* and *haven't* or the modal *has/have to*. However, *don't/doesn't* as a negative marker was not included in the counting in order to avoid confusion in sentences like *she don't drinks alcohol.* In such sentences, we could end up counting two errors (omission for *don't* and overgeneralization for *drinks*) although there is only one obligatory context to be considered.

Regarding to the use of past tense, the use of regular and irregular verbs is distinguished. For regular past tense (verbs ending with *–ed*), we excluded all *–ed* forms classified as passives or participles (e.g., do you know the person *named* Eddy?). This is to avoid some utterances when they appear as chunks. Similarly, the same exclusion applies to irregular verbs. Any other irregular verbs appearing in normal obligatory contexts have been included in the counting.

Plural *–s* is the last morpheme included in the analysis. For this particular morpheme, any forms of plural (e.g., *–s, –es, –ies, –oes, –ves*) are included. Irregular nouns (e.g., geese, children), however, are not included in the counting as they obviously do not carry the morpheme *–s* currently being investigated.

The occurrences of these morphemes will be counted as omission errors (non-suppliance) or commission error (wrong/incorrect suppliance, misformation) only when they appear without correction. If the child supplies an incorrect utterance, but immediately follows up with a correction, it is only counted as an obligatory context without an error. In some cases, a very small number of no suppliance errors was found in any single transcript for various reasons (e.g., the child was too young to produce the morpheme). In this condition, we keep the figure as is and show it in the tabulation as something that we cannot avoid in a child's spontaneous and naturalistic data.

These errors are in accordance with the surface strategy taxonomy of errors proposed by Krashen, Dulay and Burt (1982), and presented again in Ellis (1994). Errors of omission constitute any absence of items that must appear in relevant obligatory contexts (e.g., *He reading, she sleep*), while misformations represent the use of an incorrect form of a morpheme (e.g., *Mommy goed to work, they is working*). I also included errors of *addition* into this classification as the number of occurrences was very minimal, so the calculation of these errors into their own classification is worthless. There is also another category of error, called *misordering* (e.g., *what you are doing?*), but this was not included into the tabulation as it is not fully relevant to the present study.

4.2.2.4.1.2 Inter-rater Reliability

To reach high confidence in the data and any analysis results produced from them, a set of reliability tests was carried out. This concept is commonly known as interrater (intercoder) reliability. The primary purpose is to ensure that the coding scheme can be used consistently and independently by different coders and on different occasions (Mackey and Gass, 2005). In the present study, the researcher acted as a single transcriber and coder. To increase confidence in the data, two independent coders were selected to code a certain amount of sample data transcripts blindly. In this particular case, at least 10% of transcripts representing the production of each morpheme gathered from different phases (i.e., beginning, middle, end) of the data collection period were coded separately by two independent raters. According to Mackey and Gass (2005), it is possible to establish confidence in rater reliability with as little as 10% of the data. Before the work, the raters were given an adequate explanation on how and what to code, and which specific criteria (as discussed previously) they needed to follow.

The total number of coding decisions from the main coder (the researcher) and the two independent coders were tabulated, resulting in a percentage of agreement and disagreement among the three coders. In general, the disagreement rate needs to be as low as possible to achieve the highest confidence in the data. For the present study, a collection of transcript samples from both children was checked by three raters involved in the study. The rates given by each rater was tabulated and compared with the rates given by the other two raters. Our results show that interrater agreement among the three raters was 87%.

4.2.2.4.2 Analysis

All the recording data was collected and transcribed systematically in software called CLAN (Computerised Language Analysis), following CHAT conventions/format. The data were then quantitatively analyzed to reveal relevant information about the acquisition stages and language development. The data collection produced over 642 minutes (nearly 11 hours) worth of audio file from Mawar and 932 minutes (15.5 hours) from Melati. The transcripts themselves, added with all the ‘mor’ lines containing information about detailed morphological information, transform into several hundred pages of word files to be analyzed.

When we first began collecting and transcribing their speech, Mawar and Melati were not yet beginning to learn grammar. This can be seen from the range of their MLUs as presented previously. According to Brown (1973), overt grammar or morpheme combination

begins to be displayed as the MLU rises above 1.00. Obviously, Mawar and Melati's MLUs are far beyond this benchmark, so their knowledge of English grammar has already developed. A detailed explanation about the research subjects has been related previously. The data collected from them will be covered in Chapter five.

4.2.2.5 Morpheme Quantification

The calculation of morphemes within CLAN takes into account many different requirements. In addition to all the basic forms, the program accepts any forms of morphemes to be included in its calculation. Therefore, it will include the *–s* plural marker, the *–ed* past tense marker, the *–ing* progressive marker, the *–s* tense marker, the *'s* possessive marker, and contractions (e.g., *she'll, they're, we've).* CLAN will include these although they are used incorrectly (for example mouse-*s* and drink-*ed).* Words included in false starts or repetitions (e.g. "[then] she [go] went to the bank" is counted as 5 morphemes) are discarded appropriately. Compound words (e.g., fireman), irregular past tense, diminutives (doggie, horsie) and catenatives (gonna, wanna) are all regarded as one morpheme. Likewise, filler words like *uhm, well, oh, um hmm* are not counted as morpheme by CLAN (Johnson, 2005).

Counting and examining suppliance and non-suppliance of obligatory context was surely the most challenging, labor intensive and time-consuming part of this project. The main results of this study are entirely dependent on accurate calculation and detailed analysis of such data, from which the overall production and language development of each participant could be predicted. According to Thewissen (2015), there are five main types of error counting methods: obligatory occasion analysis, T-unit analysis, calculating the errors of a particular type, error percentages, and error frequencies. In the present study, only the first one, obligatory occasion analysis is the most applicable as the main task in the study deals with learners' production data, especially in correct and incorrect suppliance in each relevant obligatory context.

In the analysis of the data, one method of morpheme quantification is available, namely SOC (Suppliance in Obligatory Context). Originally used in Brown's (1973) L1 study and subsequently adopted by Dulay and Burt (1974) and many recent L2 studies, SOC is a procedure used to determine precise suppliance of specific morphemes where they are required in standard English (Pica, 1983). In general, points are given for accurate suppliance in obligatory contexts. If the correct morpheme is supplied, the subject is given 2 points. When an incorrect morpheme is supplied or no morpheme at all is supplied, the subject is given 1 or 0 points respectively. All these calculations are then factored into the

following formula in order to obtain a quantification of Supplied in Obligatory Contexts Analysis of Morphemes.

Figure 2: Suppliance in Obligatory Contexts formula.

$$SOC = \frac{(n \text{ correct suppliance in obligatory contexts}) \times 2 + (n \text{ misformation in obligatory contexts}) \times 1}{(\text{Total obligatory contexts}) \times 2}$$

If we consider obligatory context as a kind of test item, a pass represents a condition when required morphemes are supplied correctly while a fail is when morpheme are either not supplied or incorrectly supplied (Brown, 1973). Additionally, Brown also mentioned that in defining *'obligations'*, there are specific contexts in which this could take place; linguistic context, nonlinguistic context, linguistic prior context, and linguistic subsequent context (*p.* 255).

In the sentence *he is dancing,* for instance, it is obligatory to supply an *–ing* because the context requires it to be continuous/progressive. In language data, if a subject produces the sentence correctly like that, then it can be scored as 2 points. When there is a misformation (e.g., *he's dances*), 1 point is given. However, in a production where no morpheme appears (e.g., *he dance*), 0 point is given. When more utterances from a larger volume of data are quantified using this formula, the SOC score will be clearly visible for specific participants or subjects.

In the present study, SOC calculation and tabulation is carried out on each file of the transcript, the same way as proposed by Brown. The following table gives a general overview of how each obligatory context for a functor is treated, as also suggested in Dulay and Burt (1974) and relevantly adopted in Muftah and Eng (2011).

Table 6: SOC scoring guidance.

Case	Description	Example	Score
No functor supplied/Omission Items (OI)	Refers to any absences (non-suppliance) of required morphemes.	*She study yesterday, *Andy work alone.	0
Misformed functor supplied/Wrongly Inflected Items (WI)	Refers to any incorrectly inflected items such as the use of *–s* with any subject other than the	*She's dances, *I work*s,* *I are sleeping.	1

	third person singular and the use of copula *be* with incorrect subject.		
Correct functor supplied/Grammatically Inflected Items (GI)	Refers to the correct use of required morphemes.	She's danc*ing,* I am sleeping.	2

From the entire data files, there were 12 SOC figures for each participant, comprising information about the number of morphemes that were correctly or incorrectly supplied in obligatory contexts for the respective properties being investigated, as well as any misformation among them. Together with MLU data, this was then used to predict participants' L2 development trajectory.

By referring to the table above, this is the data analysis process for the data from Mawar and Melati. First of all, the number of grammatically inflected items in obligatory contexts were counted and tabulated. Just a reminder, obligatory contexts are, in this particular case, occasions where specific morphemes are required to be used in Standard English. Secondly, all omissions in obligatory contexts (where required morphemes have been omitted) were also calculated and tabulated appropriately. Subsequently, the number of incorrectly supplied morphemes in obligatory contexts (i.e., the use of *–s* for the incorrect subject) were counted and tabulated as mentioned in the previous steps. All these numbers were factored into the SOC formula provided previously.

Following Ellis and Barkhuizen (2005), it is also necessary to mention that the analysis of obligatory occasions in the current study takes into account the following steps:

1. Defining the feature to be included in the investigation (e.g., copula, plural *–s*).
2. Finding obligatory contexts within the data.
3. Checking and counting suppliance of each morpheme in each obligatory context.
4. Calculating the accuracy rate, or SOC score, as mentioned above.

4.2.2.6 Indication of Successful Acquisition

Determining a certain percentage to reflect a particular learner's accuracy in language production has been a debatable issue. Linguists tend to have different opinions in regards to what percentage should be used as an indication of successful acquisition of a particular grammatical property. To explain this, Slabakova (2016) suggests that the answer truly depends on how we define the phrase "to be acquired" with respect to one particular

morpheme. Giving an example of English progressive *be* + *-ing,* she clearly explains that, for a learner to be considered having fully acquired and demonstrated proficiency in this particular morpheme, the same learner must be able to *contrast* this aspectual tense with another type of tense, for instance, the past simple tense. Therefore, knowing whether a learner can differentiate between the use of *she was sleeping when I came home* and *she slept on the bed* is crucial, particularly in the context in which they are required to be used, is vital to indicate if a morpheme has been partially or fully acquired.

Two of the most commonly cited views in this issue are that of Brown (1973) and Vainikka & Young-Scholten (1994). Brown used a 90% 'cut-off' point of correct usage in his study of Adam, Eve, and Sarah's L1 production. He used this figure under an assumption that acquisition has taken place when a child produces a functor morpheme in as no less than 90% of the cases in obligatory contexts. As Brown studied learners in an L1 context, the 90% cut-off point should be appropriate.

The other cut-off point proposal, which is particularly suitable for the present study, is that of Vainikka & Young-Scholten, who used a 60% figure as a criterion for a successful acquisition. V & Y suggest that a construction has been acquired when the number of correct suppliance is no less than 60% of the total obligatory contexts. When analyzing corpus data from learner's transcripts, this 60% figure should be applied to each particular transcript file. V & Y emphasize that the use of 60% as the cut-off point is not essential; however, it helps us to differentiate learners according to their proficiency level.

As mentioned beforehand, the 60% cut-off point will be used as a parameter of a successful acquisition in the present study. As argued by V & Y, the 90% cut-off point can be used for advanced learners, or native speakers, as in Brown's study of L1 learners. Since the subjects involved in the present study are non-native speakers, then the 60% cut-off points suggested by V &Y should be appropriate.

4.2.2.7 MLU Calculation

We all agree that child language development follows a sequential order, which basically means that the length of utterances they produce increases as time progresses. To predict their language development, MLU *(Mean Length of Utterance)* calculation is commonly used in SLA studies. This is traditionally calculated by dividing the total number of morphemes by the total number of utterances (usually from at least 100 collected utterances). Here is a simple simulation of how this could be done manually:

To precisely calculate the MLUs, each utterance needs to be appropriately and accurately transcribed. Defining utterances is one of the most challenging tasks in such a study, especially when complying with transcription conventions. According to Stockman (2010), transcribers often differ significantly in their identification of utterance boundaries regardless of their formal study of speech. As a general rule of thumb, an utterance is usually defined as 'a segment of running speech that appears to form a coherent unit (Saffran, Berndt, & Schwartz, 1989). A complete sentence, therefore, is considered as an utterance although it may not necessarily be grammatically correct. A falling intonation, or raising one in question, can also mark the end of an utterance. There are also a number of other different indicators that can be used to decide whether one segment of language production could be considered an utterance or not.

Brown (1973) suggested stringent rules for calculating mean length of utterance. The following table summarizes the rules:

Table 7: Rules for calculating MLU. Adapted from Brown (1973) p. 54.

Rule 1	Do not start with the first page. Instead, begin from page 2 with the first 100 utterances.
Rule 2	Only use fully transcribed utterances and avoid those with blanks.
Rule 3	All utterances should be counted, including correct efforts in repetitions.
Rule 4	Do not count fillers (i.e., *mm, oh*), but count *no, yeah, hi.*
Rule 5	Compound words (i.e., birthday) , proper names (i.e., New York), and reduplications (i.e. *quack-quack, see saw*)) should be regarded as one single count.
Rule 6	Irregular verbs should be counted as one morpheme
Rule 7	Diminutives, the standard forms used by child, such as *mommie* and *doggie* should be counted as one morpheme.
Rule 8	Auxiliaries and catenatives (i.e., *gonna, wanna*) are counted as one morpheme. Therefore, *gonna* should not be counted as *going to.*
Rule 9	The range count is based on the total transcription.

The rules suggested by Brown are not manually applied to the data. CLAN software has adapted most of these rules into the calculation. Ratner and Brundage (2013), in addition, added two out of three of the following criteria frequently used to define utterances

in transcribing. If two of the following three features apply to a segment of conversation, then it can be considered an utterance. Based on this agreement, the following requirements will be used to delimit utterance segmentation in this study:

1. Silence or pause that is longer than two seconds.
2. Terminal intonation contour (falling and raising).
3. A complete sentence, or word (s) that give appropriate contribution in conversation.

In CHAT format, which is the transcription standard of this particular work, utterances are terminated by a period, question mark, and the exclamation mark. As required by CHAT (MacWhinney, 2014), each line in the transcription only consists of one utterance and, in order to mark this, one of the previously mentioned terminators should be used. In some cases comma is used (as in the following example), but it is not treated as a terminator. Simple utterances with necessary codes are provided in the following examples taken from Melati's data recorded in January 2015:

(1) *CHI: his hair was very long.

(2) *CHI: … he want to go there because he want to watch the tv.

(3) *CHI: &uhm (.) I [/] I am xxx to my family.

From these examples, we can see that all the utterances are terminated by a period. It is also obvious that the filler, repetition, and unintelligible words have been coded appropriately according to the conventions and requirements used by CHAT format. These are to enable relevant analysis run by CLAN in the future.

Here are some sample utterances, along with the number of morphemes each contains, gathered from Mawar's recorded data collected at age 2;5.

Table 8: Mawar's sample utterances

Utterances	**Number of Morphemes**
This is red.	3
It's blue.	3
Green.	1
Yes papa.	2
This is circle.	3
Another circle.	2
This is daddy.	3
Total Morphemes ➔	**17**

Based on this data, we can see that there are a total of 17 morphemes from 8 collected utterances. In order to find the mean length of utterances, we need to take the total number of morphemes (17) and divide it by the total number of utterances (8). Thus, we can find that the mean length of utterances (MLU) is 19/8 = *2.1*. It is important to take into account that MLU counts can fluctuate depending on the production data already recorded.

Clearly, Brown's (1973) stages of syntactic and morphological development is indeed an important and beneficial reference in understanding child's MLU in L1 acquisition. Moreover, we are also hoping to track whether similar stages are followed by our subjects' when acquiring English as an L2. Bowen (2011) has systematically summarized Brown's Stages as shown in the following table, which provides information regarding at what specific age each particular morpheme is acquired.

Table 9: Brown's stages of L1 acquisition.

Brown's Stage	Age (months)	MLU Mean	MLU Range	Morphological Structure	Examples
Stage I	12 - 26	1.75	1.0-2.0	Operations of Reference	*That car* (that is a car), *no more* (I don't want anymore)
				Semantic Relations	*In bath* (I am in the bath), *water hot* (the water is hot)
Stage II	27 - 30	2.25	2.00-2.5	Present Progressive	it go**ing**
				In	**in** box
				On	**on** box
				Plural *-s*	my car**s**
Stage III	31 - 34	2.75	2.5-3.0	Past Tense (irregular)	me **fell** down
				Possessive *'s*	man**'s** book
				Uncontractible Copula	**is it** Alison?
					Yes, **it is.**
					Was it Alison?
					yes, **it was.**
Stage IV	35 - 40	3.5	3.0-3.75	Articles	**A** ball on **the** book.
				Past Tense (regular)	She **jumped**
				3g *-s,* present	The puppy **chews it**
					Jason **likes** you
Stage V	41 - 46+	4	3.75-4.5	Third person (irregular)	She **does.** He **has.**
				Uncontractible copula as auxiliary.	**Are** they swimming? **Were** you hungry? She **was** laughing.
				Contractible copula	She**'s** ready. They**'re** here.
				Contractible copula as auxiliary.	They**'re** coming. He**'s** going. We**'re** hiding.

Considering the huge amount of longitudinal data collected over a twelve-month period from the two children, MLU calculation could not be done manually by hand.

Fortunately, CLAN developers have provided all the necessary commands to run the check and produce MLU data in the blink of an eye. All the MLU counts for this particular study and how they represent each child's language development will be presented in the subsequent chapter. MLU data for both subjects, along with other relevant items, will also be provided in the following results chapter.

4.3 Summary

In this chapter, we have discussed different points relevant to the present study. The study is specifically focused on particular properties of inflectional morphology, without any intention to generalize participants overall language skills. Predictions and claims in relation to L2 learners variable use of inflectional morphology, particularly those relevant to the Missing Surface Inflection Hypothesis, will be used to discuss the findings. Further, we will also review the main findings into the discussion about L1 influence in L2 acquisition and a comparative overview about two types of bilingualism as presented in Chapter five.

Chapter 5: Results

5.1 Introduction

The results reported in this section provide all initial data of both subjects, their linguistic development (i.e., MLU) and suppliance data of all morphemes being investigated, namely third person agreement marking *–s*, regular and irregular past tense, plural *–s*, copula *be*, and auxiliary *be*. This report summarizes exposure data and the total number of occurrences of the forms under current investigation collapsed across all recording sessions. Data from both subjects for similar morphemes will be presented together to allow direct comparison when necessary. I will begin the presentation of data with different numbers collected through a parental questionnaire to visualize L2 exposure information of both subjects. This allows us to discuss environmental factors (i.e., non-native input) that influence their language development, of which the complexity is measured, in this case, by the MLU. Following this, a presentation of data about inflected and uninflected verb forms will be provided for further discussion about the errors produced and overall linguistic patterns of the two children.

5.2 Findings from UBiLEC and Participants' Language Development

Table 10: Mawar's and Melati's Initial Information

GENERAL BACKGROUND INFORMATION AND CHILD LANGUAGE EXPOSURE AT THE COMMENCEMENT OF THE STUDY														
NAME	AGE AT TESTING	AGE ON ARRIVAL	TL (Target Language)/OL			AfE (Age of first exposure)			SPEAKING ABILITY (0 - 5)			UNDERSTANDING (0 - 5)		
			TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2
Mawar	2.4	1.1	eng	ind	ace	1.05	0	1.8	1	2	0	1	2	1
Melati	9.3	8.0	eng	ind	jav	7.9	0	0	2	4	2	3	4	3
NOTE:	**TL**	Target Language					**eng**	English			**ace**	Acehnese		
	OL	Other Language					**ind**	Indonesian			**jav**	Javanese		

From Table 10 above, we learn that Mawar and Melati had been exposed to two other languages before they were introduced to English, yet they were also exposed to English at different age point after birth. Their parents also believed that their initial speaking ability and understanding in English were at different levels. Mawar was clearly at a very early age of language production both in L1 and L2, while Melati was already fluent in L1 and beginning to produce simple constructions in L2. This information will be necessary for further discussion about their linguistic development and as comparative data to reflect their MLU. Table 11 below provides more detailed information about each child's exposure to the target language.

Table 11: Overall Exposure Data of Mawar and Melati.

Type of Exposure	Mawar			Melati		
	P1	P2	P3	P1	P2	P3
AoE to L2 *in %*	50	50	64	35	35	35
LoE (cum) *in yr*	0.7	1	1.1	0.6	0.9	1
LoE (trad) *in yr*	1.3	1.7	2.3	1.3	1.8	2.3
QoE *in scale 1-5*	3.8	3.8	3.6	3	3	3

With regards to Amount of Exposure (AoE) to L2, data from parents revealed that the older child (Melati) received less exposure to English than Mawar. This means that she interacted more in languages other than English (i.e., Indonesian, Javanese) especially at home and during other activities with the Indonesian community. If any, interactions in English with non-native speakers (i.e., parents) were minimal. In contrast, Mawar seemed to interact more in English and the amount of English use increased over time. This is particularly true when compared to their patterns of target language use at home and outside the home (school or nursery) as provided in Table 12 below.

Table 12: Language Use at Home and Outside.

	% L2 Spoken at home									Outside home		
	M → C			F → C			C → M/F			C → others		
	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3
Mawar	50%	50%	60%	50%	50%	70%	33%	43%	73%	100%	100%	100%
Melati	20%	20%	20%	30%	40%	40%	43%	43%	43%	100%	100%	100%

NB: Parent's self-rating of their linguistic proficiency

Child		L2 Errors			L2 Accent		
		P1	P2	P3	P1	P2	P3
Mawar	Fat	2	2	3	2	3	3
	Mot	1	1	2	1	2	2
Melati	Fat	2	2	3	2	2	2
	Mot	1	1	1	1	1	1

Table 12 above reveals important information about the amount of L2 use at home and outside (school and nursery), as well as how parents rate themselves with regard to the production of L2 errors and accent. It is interesting to know which language is more dominant between the children (C) and their mother (M) or father (F) across different points of time (P1, P2, P3). Mawar's parents seemed to split a good balance of the amount of interaction in English with Mawar, while Mawar appeared to gradually increase the amount of L2 use when talking to her parents. In contrast, Melati's parents used less English with

her during home interactions, while she continued to use the same proportion of English when talking to them at home.

If we relate these findings to the findings of Chondrogianni and Marinis (2011), where the relationship between the mother's L2 proficiency to her children's language development seems obvious, we can see that the data in the present study present relatively different findings. Both Mawar and Melati use 100% English at school or nursery, the period in which they receive most of their authentic input in L2, while L2 English use at home is relatively minimal for both of them. Unlike Melati, Mawar interacts more in L2 with her father than with mother. It is worth mentioning that Mawar's father self-rated his English proficiency higher than any other parent, which could account for the accelerated growth of her linguistic proficiency.

The way the two children's parents rate their linguistic errors and the accent is also another interesting finding to mention here. On the scale of 0 to 3 (many errors to virtually no errors), both fathers rate themselves as at least regularly producing few errors while mothers both believe they produce regular errors. Similarly, with regards to accent, fathers believe they do not speak with accents while mothers seem to admit having a noticeable accent in their L2 utterances. These data are particularly interesting into determining whether the quality of input from parents is reflected in the children's L2 production. However, it is hard to conclude whether the parents' L2 proficiency can be used to explain their children's accuracy in L2 production. Up to this point, as both children's L2 interactions with parents have been recorded as relatively minimal, we can only fairly say that parent's proficiency does not seem to predict accurate use of the target language (see the subsequent section for the relationship between the amount of exposure to L2 and MLU). Further discussion with regard to this issue will be covered in section 4.3, where data describing accuracy in the use of inflections are reviewed.

5.2.1 Language Development

In order for us to see whether there is significant development in L2 acquisition between the two children, we will now review their MLU. The presentation of data for the two subjects will be separated to allow further in-depth discussion about the issue.

5.2.2 Mawar's Language Development

A total of 4,390 utterances and 12,030 morphemes were recorded in Mawar's transcript over the course of 12 months (see Appendix C for further details). In the data, Mawar's MLU shows an increasing trend throughout the year. Within the first six months of data collection, her MLU counts seem to reflect her progressive linguistic development, until it slowly declines again for the following three months, when she was brought back to Indonesia for holiday, and the increases again towards the final months of data collection. We now intend to discuss this development in three different phases; beginning, middle, and final.

During the first period (beginning), Mawar regularly attended nursery sessions, during which she acquired most of her new L2 words from the carers and other pupils. Our observation, supported by the recording data, confirms that her speaking proficiency increased significantly during this period of time. Apart from communicating with native speakers within the nursery, Mawar also communicated actively in English with her father but used more L1 with her mother (see table 12).

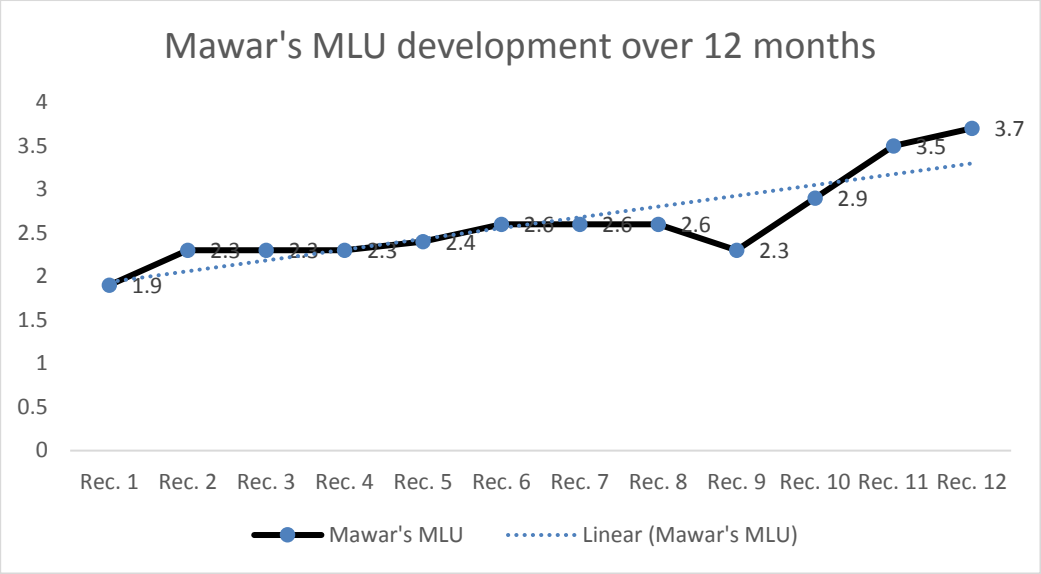
In the summer, Mawar traveled on two family trips to Indonesia and spent one month on each trip, where she relied completely on her parents to maintain her English. In fact, she spent a relatively short amount of time communicating in English as most adults, except her parents, talked to her in Indonesian. With very minimal exposure and practice, her MLU count showed a slight decline for at least three months. This is clearly good evidence to show that parental input was not authentic enough to maintain a steady rate of L2 development. Mawar's MLU seems to increase consistently but only drops when no native-like input is received. This is in line with Hoff and Core's (2013) argument stating that children growing bilingually will usually be better in one (dominant) language than the other. This is especially true in this context as Mawar was exposed dominantly to L1 during this particular time of the year, thus her L2 development was reduced.

Starting in September 2015, Mawar returned to the nursery and attended more sessions than before. Within the first month in the nursery, her MLU increased significantly to 3.0 and began a steady rise as time progressed with the remaining recording sessions. According to her key person at the nursery, she started her first few weeks very quiet and shy. However, it did not take long until she found herself talking and playing actively with other children without any language barrier. Her MLU is recorded at 3.7 in the last month of recording, which is clearly an achievement of Stage IV according to Brown's morphemes

Stages. She now communicates relatively fluently in English, with some noticeable errors still being produced.

The following line graph provides a chronological sequence of Mawar's MLU records during the twelve months of data collection. The solid line shows the actual MLU progress, while the one with dots shows its increasing trend.

Figure 3: Mawar's MLU development.



From the graph above, it is obvious that Mawar's MLU gradually increases as she develops her lexical and grammatical knowledge. During the first month of data collection, her MLU measurement is only 1.9, which according to Brown's morphemes is classified in stage I. At this particular stage, a child produces particularly short phrases like *birdie go* (the bird has gone) and *in bath* (I am in the bath) as their vocabulary is very limited to 50-60 words (Bowen, 2011). With regards to Mawar, her oral production during this period was still very limited to single words and short phrases, as shown in the following examples:

(1) INT: what's that?
MAW: for mama.

(2) MOT: what do you want?
MAW: juice.

In example (1), Mawar responds to the interlocutor's question about an item in front of her just by saying *'for mama'* instead of saying *'that is for mommy'*. Similarly, she

responds to another question from her mother simply by saying *'juice'* rather than *'I want juice'.* This is very common among young learners, especially L2 children.

In the following months, our records indicate that remarkable improvement in Mawar's oral proficiency started taking place immediately in her second month of being involved in the data collection. The transcription data reveals that she started using longer sentences as soon as her MLU reached the score of 2.0 and begans to climb. As predicted in Brown's Stages II and III, with a MLU range between 2.0 and 3.0, L2 learners start producing the progressive *–ing,* the preposition *in* and *on*, plural *–s,* irregular past tenses, the possessive *–s,* and uncontractible copula. The following excerpts provide clear examples of some utterances she produced during this period.

(3) INT: it's not blue
MAW: this **is** red. [age 2;4]

(4) INT: where is mama?
MAW: work**ing**. [age 2;4]

(5) INT: what are these?
MAW: sock**s**. [age 2;7]

(6) MAW: What are you do**ing**? [age 2;7]
INT: huh?

(7) INT: what's that?
MAW: monkey **on** the bed. [age 2;8]

(8) INT: where's mommy?
MAW: mommy is **in** the toilet. [age 2;8]

As can be seen in the above examples, several important morphemes are being produced in the subject's verbal utterances. Shown in (3), copula *be* is initially being used in month 2 (age 2;4) to form a short statement. In the same recording file, the first *–ing* form, as in (4), is used to express an on-going action '*she is working*' although being expressed in a single word '*working*'. However, this is soon improved and used in a full sentence, as seen in (6) taken from recording 3 (age 2;7). By asking *'what are you doing'*, it is obvious that she clearly understands the use of *–ing* to express progressive actions. At age 2;8, she started using prepositions *in* and *on* as shown in examples (7) and (8).

Unlike what was predicted by Brown (1973) for the L1 child, Mawar started using contractible copula as early as age 2;5 years with an accuracy rate of 95%. However, this data is consistent with Krashen's (1977) natural order for L2 acquisition, where it is predicted that copula use is acquired much earlier than other morphemes such as auxiliaries, regular and irregular past tenses, and third person *–s.* Here are a few examples taken from the relevant transcript.

(9) INT : it's not red, what is it?
MAW : it**'s** blue.

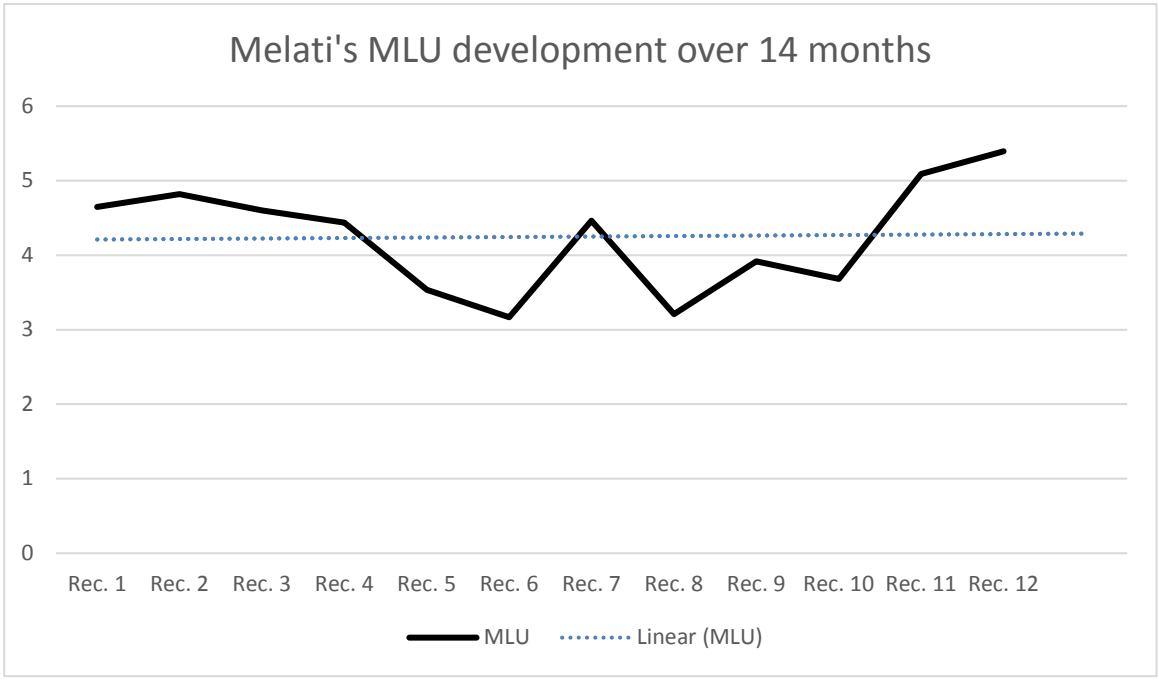
(10) INT : Mawar, how are you today?
MAW : I'm good.

It is surprising to see how an L2 learner's performance is somehow different from that of an L1's as predicted in Brown's Stages. According to Brown (1973), the three children in their study started to use contractible copulas after they successfully acquired the uncontractible ones around the age of 40-46 months. Mawar showed the use of such items comparatively earlier than the L1 learners in Brown's study.

5.2.3 Melati's Language Development

Melati's corpus consists of a total of 3,516 utterances and 15,205 morphemes, collected twelve times over a period of fourteen months (please refer to Appendix D for further details. Unlike the other child, Melati's MLU development shows a unique trend, as shown in the figure s below. Although MLUs are not fully reliable for older children, I try to present a brief discussion about relevant findings here.

Figure 4: Melati's MLU development.



Overall, we can see that her MLU record seems to be high in the beginning, and then drops below the overall mean around the middle, but then climbs up to over 5.0 around the end of the recording sessions. It is also interesting to see that, at recording 7, her MLU jumps

up to near the overall mean, but then drops again in the next recording. I was a little bit skeptical about this data, suspecting that transcription or coding errors could have been made during the transcription process. However, after conducting multiple checks in the transcripts and all the coding, and repeating *'mor'* and '*mlu'* checks on CLAN, the MLU data remain generally the same with very small changes in the decimal digits.

It is very difficult for us to conclude why these differences in her MLU could have occurred. However, when cross-referencing the recording history, we found two different situations that could have accounted for the number of morphemes and utterances that the subject was able to produce. In the twelve recording sessions we made with Melati, three sessions (3, 7, and 12) were completed with no one being present except the interlocutor, while the others involved at least two other people such as her friend(s) and family member(s). All the lower MLUs in session 5, 6, 8, 9, and 10 were recorded in the second situation, where more people were involved in the recording. In these sessions, we witnessed that the subject was reluctant to speak. As for now, we do not know if this is related to the fact that she is from Southeast Asia, where children are known to be shy to engage verbally when more people are present. We then reached the conclusion that opportunities to speak, especially when the child is the only person to talk with the interlocutor, would affect the MLU score.

By referring to the developmental trend of Melati's MLU, as shown by the linear line in the previous graph, we can see that her capacity to learn and use grammatical structure has reached a level where the MLU development progresses relatively slowly. From the transcripts, we found repeated similar errors at particular points of time, showing that they have become a habit. Let us refer to the following examples of agreement errors found from different transcripts of Melati's corpus data:

(11)	MEL:	She *have** chicken.	[age 9;3]
(12)	MEL:	My mom *want** to do that.	[age 9;5]
(13)	MEL:	Oh it *smell** really nice.	[age 9;8]
(14)	MEL:	my brother *have** his own.	[age 9;12]
(15)	MEL:	Nu *want** dog.	[age 10;4]

If we refer to these extracts, it is very obvious that agreement markings have become one of the most difficult morphemes for Melati to acquire and use. As the error in (15) was made 14 months after the one in (11), we can see that there is no sign that she would be able to produce a present tense verb that agrees with the subject. We found similar errors in almost every transcript file, confirming that she is really struggling with these inflectional

morphemes. Her low overall accuracy score for this property confirms this. Further discussion about this will be provided in the subsequent section, followed by relevant further discussion in chapter six and seven.

Melati's data revealed that her capacity to learn and use grammatical structures can be categorized as, at least, Stage IV in Brown's MLU. At this stage, a child is predicted to be able to produce articles, regular past tense, and third person regular for present tense (Bowen, 2011). Brown also suggests that in Stage V, properties like the third person *–s* (irregular), uncontractible auxiliary and contractible copula and auxiliary start to appear in the production. Within Krashen's (1977) natural order of L2 acquisition, however, her performance fits with Krashen's predictions as he argued that L2 learners acquire particular difficult properties like third-person singular *–s* relatively later in age.

We have tried to go over all the transcripts and find some additional examples to further explain her L2 production.

(16)	MEL:	It's *a* melon.	[age 9;8]
(17)	MEL:	*the* egg was going out.	[age 9;8]
(18)	MEL:	Who got *the* most card?	[age 9;11]
(19)	MEL:	I*'m* not doing that because…	[age 9;4]
(20)	MEL:	It*'s* thirty degrees celsius.	[age 9;4]
(21)	MEL:	but she still *doesn't* like…	[age 10;3]

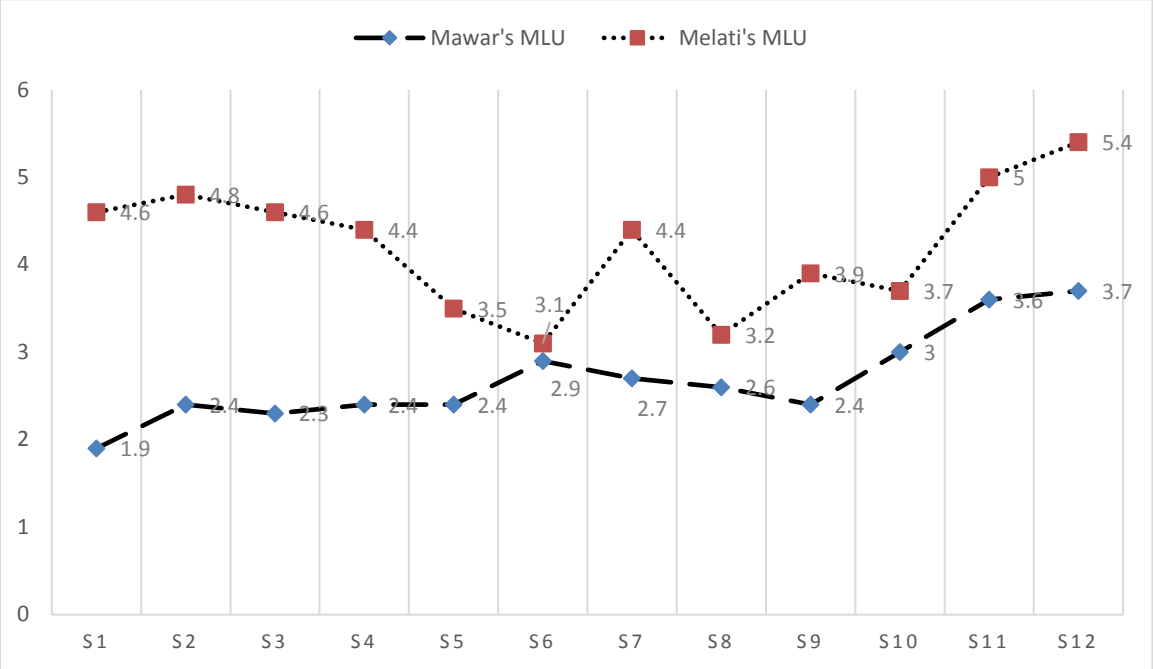
From these examples, we learn that Melati has produced all necessary morphemes for Stages IV and V, except the one for agreement marking (regular and irregular). The examples in (16), (17), (18) and (19) were collected from the transcripts where the MLU scores happen to be the lowest, which are 3.1 and 3.2. We can see that articles *a* and *the* do appear in Melati's language production, as in (16) and (17). Unfortunately, we were unable to find any production for regular past tense within these files. Contractible copulas and auxiliaries have also been found in numerous cases as shown in (16), (19), (20) and (21). This leads us to conclude that, although many important morphemes are still missing in the production, the subject has started to supply required morphemes in obligatory contexts, as many prominent linguists have predicted.

5.2.4 Comparative Overview of Mawar and Melati's Language Development

There are a number of different ways to see language development in particular learners, one of which is through the Mean Length of Utterance (MLU) counts. Using MLU is one of the most appropriate and common ways to show general development in learner's

language, especially by looking at the improvements in utterance structure. This particular section will cover a brief summary of how the MLU data relate to the present study about morphological inflections. A brief summary of the two subjects' MLU development will be provided in the following figure. A detailed overview of MLU is presented in Appendix C and D.

Figure 5: MLU comparison between Mawar and Melati



The figure clearly illustrates the differences between the developmental paths of the two subjects' MLU. Mawar's MLU, first of all, shows a positive trend of development along the course of 12 months. During this particular period, Mawar was consistently exposed to a relatively good amount of L2 sources. In addition, being a simultaneous learner, the effect of negative transfer seems to be reduced unlike what happens to consecutive learners like Melati. The evidence in support of this argument is found in our data showing a relatively low number of errors resembling L1 grammatical structures in her L2 utterances. In copula *be* and auxiliary *be* productions, for instance, we found a very high percentage of correct suppliance in Mawar's data, confirming that she does not tend to omit this morpheme although such morphological items are not overtly marked in her L1 grammatical system.

With regards to Melati, on the other hand, her MLU counts seem to fluctuate much more over this particular data collection period. As we can see from figure 18 above, her MLUs tend to be higher in the first months, then drop for several months, but then start to increase again within the last three samples. As discussed in the previous chapter, one

possible explanation for this is the amount and quality of her exposure to the second language. In my records, her MLU counts almost always positively correspond to the amount of time she spends at school. During the time when she attends school, her MLU scores seem to be high but, in contrast, they tend to drop during short breaks or summer holidays. It is very likely that her L1 gets in the way of her L2 acquisition process when she is not productively exposed to a naturalistic L2 environment (i.e., school, English speaking friends). However, it has been relatively difficult to judge the relationship between her MLU counts to the number of correct or incorrect suppliance she produces over time. As far as MLU is concerned, there is no evidence showing that a higher MLU results in higher accuracy in morphological production. Instead, Melati's production of errors is mostly random and unrelated to her MLU score.

For both Mawar and Melati, many error samples are found with traces of possible similarities with L1 morphological and syntactic constructions. Although many are independent of L1 influences, we have found quite a large number of them with a possible explanation of L1 interference in L2 production. Therefore, we found it important to discuss this issue in this section.

One of the predictions presented in the earlier chapter suggests that low functional morphology and high variability in L1 grammar will affect the realization of L2 morphology. Many studies have confirmed this hypothesis. In this section, we are going to discuss how L1 Indonesian affects the production of L2 English morphemes, especially in respect to the morphemes that are not morphologically marked or realized in the Indonesian language. For this particular reason, the section will cover mostly how different ways in exhibiting overt morphology in one language would result in problems with surface morphology in the other.

First of all, I would like to begin our discussion with an issue related to affixal versus suppletive morphology. In the data, we have found a large amount of evidence for the differences between the acquisition of both types of morphological marking, such as which one is acquired ahead of the other. Before continuing further, it is perhaps necessary to differentiate between *suppletive* and *affixal* elements. According to Fasold and Connor-Linton (2014), suppletive elements are those involving irregular inflection of a word, where part of the root after the initial consonant (e.g., *thought*) or the entire root (e.g., *were*) undertakes modification. In the case of affixal elements, the root is combined with another morpheme for a number of different purposes (e.g., work*s*, work*ed*).

Generally, suppletive elements are among those with a higher percentage of accuracy between the two subjects. In particular, both Mawar and Melati produce relatively high accuracy percentages for irregular past tense verbs, copula *be,* and *auxiliary.* As far as suppletive paradigms are concerned, we believe that the two participants use these elements consistently and productively, consistent with what has been found by Geçkin and Haznedar (2008) in their study of three Turkish young learners of L2 English, who were found to have consistent and productive use of elements such as copula *be* and many others.

In regards to affixal elements, in this case 3sg *–s*, regular past *–ed,* and plural *–s,* it has been found that accuracy scores for both subjects are generally low, except the plural *–s* for Mawar. Our data indicate that both Mawar and Melati produced a high number of inaccurate suppliance on affixal elements as mentioned previously. This is also somewhat similar to what Geçkin and Haznedar found in their study, suggesting that the three children in their study omit affixal elements like third person singular *–s* and past tense morphology for a long period of time.

To further discuss this matter, I found it necessary to present Vainikka & Young-Scholten's (1996) proposal in such a context:

> "Children acquire the affixes associated with a particular functional head before the free morphemes associated with the same head, while the reverse holds for L2 acquisition. Assuming that functional heads act as triggers for projecting new structure, we propose that affixes are salient triggers for children, while full words are salient triggers for adults (1996: 34)."

Given the findings as discussed above, the results of the present study have shown that the underlying issues with the subjects in this study are mostly problems with inflectional morphology, particularly with missing the appropriate inflection. In most parts of our previous discussions, we have seen that whenever each morpheme is supplied, it is almost always correctly used. Certainly, we know that learners tend to have problems with inflection, but it is common knowledge that a form of inflection cannot freely take a place of another (Geçkin and Haznedar, 2008). This suggests that morphological variability is not random.

As discussed in the previous section, there are at least three major accounts suggesting variable use of inflectional morphology which oppose each other's views, the optional infinitive (OI) stage, impairment, and missing inflection. If we were to apply the Optional Infinitives or impairment theory, we would expect to see omission in all inflectional morpheme types. In this regard, scholars such as Meisel (1997) have suggested that the absence of functional categories or features in learners' grammar would result in an absence

of overt inflection. As a result, utterances like *he study* or *he studying* could be attributed to such impairment. As also suggested by Haznedar and Schwartz (1997), inflected and uninflected forms are both parts of L1 and L2 learners' language production, therefore their occurrences in interlanguage cannot be attributed to the lack of relevant features in the L1. What we are interested to find is evidence of accurate production whenever inflections are used, regardless of how many incorrect tokens are found in the data.

Additionally, Prévost & White (2000) have also suggested that if such categories or features are missing or impaired, the occurrence of wrong inflectional morphology as well as random placement of both finite and non-finite verbs would be unavoidable. Our data show that such variability is widely found in the transcripts from the two participants. The subsequent sections will thoroughly discuss this issue with the purpose of relating their current performance in L2 to morphological elements and grammatical systems in their first language.

5.3 Findings on the Use of Inflections

For inflection, I examine verbs in obligatory contexts for past tense (i.e., *–ed or* irregular past) and 3sg present tense (*–s*). According to Haznedar and Schwartz (1997), a verb is considered inflected if the inflection is overt, and uninflected if the appropriate inflection is not supplied in the relevant obligatory contexts. In the subsequent sections, data about agreement and past tense inflections from Mawar and Melati will be presented separately. The discussion provided in the following sections will be separately used to support further discussion in Chapter 5.

5.3.1 Accuracy with Agreement

The MSIH predicts that when an obligatory context for agreement is found, correct agreement marking should be used (Prévost, 2000). In the present study, the knowledge of agreement has been investigated by identifying inflected verbs in the present tense forms (i.e., *works, sleeps*). In each case, I looked at each child's language production, particularly the number of inflections on verbs in any appropriate obligatory contexts. In other words, I investigated whether the agreement was accurate and correctly agreed with the preceding subject in each respective utterance(s). All incidents of accurate and inaccurate inflections, including misformation, were gathered and used to calculate overall accuracy score as later presented in the section.

In Table 13 below, data about agreement morpheme production by both subjects, along with their relevant MLU counts, collected over the course of 12 months, are presented.

Table 13: Comparative View for Accuracy in Use of Agreement Marking *–s* by Mawar And Melati.

No.	Mawar					Melati				
	Age / MLU	Correct	Misform.	Ø Suppl.	Total OC	Age	Correct	Misform.	Ø Suppl.	Total OC
1	*2;4 / 1.92*	0%	0%	0%	0	*9;3 / 2.82*	0%	10%	90%	10
2	*2;5 / 1.77*	0%	0%	0%	0	*9;4 / 2.51*	25%	25%	50%	4
3	*2;6 / 1.97*	0%	50%	50%	2	*9;5 / 2.67*	29%	14%	57%	7
4	*2;7 / 1.56*	0%	0%	100%	1	*9;6 / 2.61*	0%	0%	100%	7
5	*2;8 / 1.56*	0%	100%	0%	1	*9;7 / 2.16*	0%	0%	0%	0
6	*2;9 / 1.87*	0%	25%	75%	4	*9;8 / 1.99*	29%	0%	71%	7
7	*2;9 / 1.66*	0%	0%	0%	0	*9;9 / 3.05*	11%	0%	89%	36
8	*2;11 / 1.48*	0%	0%	100%	1	*9;11 / 2.11*	0%	0%	100%	4
9	*2;12 / 1.50*	0%	0%	0%	0	*9;12 / 2.63*	16%	42%	42%	12
10	*3;1 / 1.91*	20%	0%	80%	5	*10;1 / 1.99*	0%	67%	33%	3
11	*3;2 / 2.30*	0%	14%	86%	7	*10;3 / 3.11*	20%	20%	60%	10
12	*3;3 / 2.01*	14%	0%	86%	7	*10;4 / 3.30*	20%	18%	62%	60
		Total OC			28		*Total OC*			160

As can be seen from Table 13 above, the percentage of correct and incorrect suppliance of 3sg *–s* for both subjects varies over time. In the following sections, we will separately summarize and discuss the production of 3sg *–s* by both participants along with relevant examples of inflected and uninflected verbs, which will specifically be presented within relevant discussion.

5.3.1.1 Mawar's accuracy with agreement morpheme *–s*

The left columns in Table 13 above visualize Mawar's production of 3sg *–s* collected over the course of 12 months from age 2;4 to 3;3 years. It is worth mentioning that the recordings were conducted once in a month, except in month 7 (age 2;9) when it was done twice as she was going to be away the following month.

As we can see from the data, Mawar has not (yet) produced any utterance with 3sg *–s* within Sample 1 (age 2;4) and Sample 2 (age 2;5). In addition, the number of obligatory contexts in her data was very low during the time when the data were collected. Some of the samples do not even reveal any production of such morphemes (refer to Table 14 above). Her language production during this initial period mainly consisted of one-word utterances, or simply chunks when appear to be longer than a word. The words she produced were generally nouns, uttered generally when responding to an interlocutor's questions like *'what is this?'* and *'who is this?'*. Other than these, her utterances were somewhat unintelligible or simply unvoiced. Beginning from month 3 (age 2;6), production started to take place even though the number of obligatory contexts was still low (it starts to show increasing trend when she reaches age 3). However, it is hard to suggest that positive development in the acquisition of 3sg *–s* morpheme was taking place during this period of time. This is purely justifiable as the child at this age and MLU (2;4 / 1.92), according to Brown (1973), has not started to acquire such morphological construction.

Our first important observation from this data is that Mawar fails to correctly inflect the verb in 3sg *–s* obligatory contexts, and this occurs continuously for 9 months until she reaches the age of 3 years. The following extracts illustrate this argument.

(22) *Mommy go home (Mawar age 2;6)

(23) *When the doctor say (Mawar age 2;9)

(24) *Everybody go home (Mawar age 2;11)

From these examples, we can see that development of 3sg *–s* was very slow for Mawar. It took nearly a year until she began to correctly inflect verbs in present tense so that they agree with the preceding subject. On particular occasions (i.e., sample 1, 2, 7, and 9 (age 2;4, 2;5, 2;9, and 2;12, respectively)), she did not even produce any utterances containing 3sg *–s* obligatory contexts. Even if she did, none of the verbs was inflected correctly before she turned 3 years old.

Subsequently, when she began to produce more 3sg *–s* obligatory contexts (e.g. sample 10 onwards), the percentage of correct suppliance for this particular morpheme was nonetheless still very low. From these last three recording sessions (age 3;1 to 3;3), even though the number of obligatory contexts increases significantly, the percentage of correct suppliance was still very low. Out of the total 19 obligatory contexts found during the last trimester of data collection with her, only two verbs (10.5%) were correctly inflected. Here are some examples of correctly inflected verbs produced by Mawar.

(25) Mommy wants blender (Mawar age 3;1)

(26) She paints (Mawar age 3;3)

These extracts represent the only 3sg *–s* verbs that were correctly inflected from Mawar's transcripts. These are only 7 % out of the total 28 third person singular *–s* obligatory contexts collected over the course of one year. When all correct, incorrect, and nonsuppliance contexts are taken into account, the overall calculated accuracy rate for 3sg *–s* morpheme was only 16%. This score was calculated by tallying up all accuracy scores for each sample and dividing it by (only) the number of samples in which obligatory contexts are found. The 16% accuracy rate is low when compared to Vainikka & Young-Scholten's (1994) cut-off point for the requirement of minimum acquisition rate, which means that Mawar has not acquired the morpheme yet.

With such a low correct suppliance and accuracy rate percentage, it is fair to say that Mawar has not fully acquired this particular morpheme. If we compare this finding with the results of Brown's (1973) study, Mawar's performance perfectly matches 3sg *–s* acquisition in L1 context. Brown suggested that the acquisition of the third person *–s* in present tense falls under Stage IV of 'Brown's morphemes', which takes place between age 35-40 months of age. Therefore, the fact that Mawar had not fully acquired this morpheme before age 3 is relevant to the result of this previous L1 study. In addition, it is also consistent with Krashen's (1977) natural order for L2 acquisition.

5.3.1.2 Melati's Accuracy with Agreement Morpheme *–s*

As for Melati, her production of 3sg *–s* over the course of 12 months from age 9;3 to 10;4 years can be found in the right columns of Table 13 above. Records from Melati obviously show more tokens of agreement *–s*. At this particular age, we expected to see more utterances consisting of agreement morphemes from Melati, unlike from Mawar who is still at a very early age of acquisition, thus the production rate of such grammatical items is expected to be very minimal. As can be seen in the table, the overall accuracy score for agreement morpheme *–s* is fairly low across the 12-months of the data collection period. At a few points of time (e.g., in transcripts 4 and 8 - age 9;6 and 9;11 respectively), the percentage of no suppliance (omission) is 100%. This means that Melati does not supply any 3sg *–s* morpheme in all relevant agreement *–s* obligatory contexts at all. The percentage of correct suppliance, therefore, is quite low across the samples. However, at the age of 9;7 (Transcript 5), as can be seen from the above graph, no utterance containing agreement *–s* morpheme has been found in Melati's data. The recording samples at this age were collected

when the child was playing Scrabble game with three other people including two interlocutors. It is possible that the conversation was relatively unnatural and many utterances were concentrated on words, phrases and clauses closely related to the game. Suppliance data for other properties/morphemes are also shown with low percentages of relevant obligatory contexts.

One important observation about Melati's utterances related to the agreement *–s* is that the percentage of correct and incorrect suppliance are evenly distributed across the 12 samples already collected. The data do not show an extreme increase of correct suppliance, meaning that the knowledge development with regards to this particular morpheme appears to be slow. The development of her knowledge on 3sg *–s* morpheme seems to be very slow across the year, especially when compared to the relatively high percentage of nonsuppliance and frequent misformation or incorrect suppliance data. In other words, Melati seems to be repeatedly producing the same type of errors in agreement *–s* by not supplying the required agreement marking *–s*, or simply by supplying with the wrong one.

The following extracts, gathered from Melati's different samples and age levels, give us a general overview about how she struggles with producing appropriate agreement markings over time.

(27)	* ...and he play together...	(Melati	age 9;3)
(28)	* She know it	(Melati	age 9;6)
(29)	* He always look behind	(Melati	age 9;9)
(30)	* She say something	(Melati	age 10;4)

These examples can be regarded as evidence that Melati seems to repeatedly make similar errors in agreement *–s* across the 12 samples collected over the course of 12 consecutive months. In the initial sample (age 9;3), she fails to supply morpheme *–s* of a present tense verb 'play' following a third person singular subject 'he'. Every native speaker of English will consider this as an obligatory context of agreement morpheme *–s*. As seen in the examples provided above, the same errors are done recurrently at different points of time until the last recorded sample at age 10;4. In total, she produces 14.4% incorrectly supplied tokens of agreement morpheme –s and 70% occasions where no *–s* morpheme was supplied. As a result, only 15.6% of the total utterances carry correct inflections of agreement morpheme *–s*. Consider the following examples for illustrations of correctly supplied *–s* morpheme for our further reviews.

(31) It smells so good (Melati age 9;4)

(32) She says she *love mess (Melati age 9;8)

(33) Then it looks green and … (Melati age 9;12)

(34) … Hugo's dad says. (Melati age 10;4)

From these examples, it is obvious that Melati has shown minimal compliance with the obligatory use of agreement morphology. Example (31) above comes from Sample 2 when she was 9 years and 4 months. In this particular transcript, the extract is the only sample of correctly supplied morpheme *–s* produced by Melati. A very interesting yet unique example of her confusion with this particular morpheme can be seen from the Example (32) from the above extracts. In this sample utterance, Melati correctly inflects the verb *says* agreeing with the 3sg subject *she* preceding it, showing her understanding of the subject-verb agreement. However, this basic knowledge seems to be unrepresented in the dependent clause that follows directly after it. The verb *love* following subject *she* is incorrectly supplied (without agreement morpheme *–s*). Incidents and inconsistencies like this are very common in Melati's agreement morpheme *–s* data, and could possibly be due to her L1 influence. In sample 6 (age 9;8), for example, I found an utterance *oh it smell really nice*, where inflection for the verb is omitted. In Sample (31) above, we can see that a similar utterance *it smells so good* is accurately inflected, but not in the other sentence. These examples provide us with a clue that the knowledge of s-v agreement is there, but she is still struggling with how this particular morpheme is morphologically realized in the sentence, even with the same lexical item.

In my observation, it is not uncommon to find identical utterances where errors in inflecting the same verbs occur regularly. An example of this is the incident with the verb conjugation *'want'* as in *so he *want revenge on him.* In Sample 12, which is the last recording taken when Melati was 10;4 years old, there are 7 utterances consisting obligatory contexts for agreement *–s*. Among these, only one is correctly inflected while the rest are in the bare form without any *–s* being added although the preceding subject is third-person singular like *he* or *she.* Many errors like these are found in her first sample collected more than one year before, but surprisingly most of them are still there in the final transcript samples.

From the previous discussion, we can conclude that acquisition is unlikely to have taken place during this period of time. It has not been possible to use MLU as the standard to judge her acquisition of 3sg *–s* morpheme due to the fact that Melati is fully exposed to an English environment at the age of 9 years. However, the calculated accuracy score (mean

score 23%) clearly indicates that acquisition is unlikely to have taken place as it is still far from the V&Y 60% threshold as minimal acquisition requirement. In other words, Melati has not fully acquired this morpheme. A relatively high omission rate (70%) for this particular morpheme confirms this argument.

5.3.2 Accuracy with Tense Markings (Regular and Irregular Past Tense)

Tense marking is one of the most challenging types of morphemes to be acquired by many L2 learners, especially Indonesian learners of English. This is due to the fact that Indonesian does not overtly mark tenses. In this section, I will present complete data regarding how English tense markings have been acquired and morphologically realized by the two subjects over the period of twelve consecutive months.

Similar to the development of the agreement morpheme (3sg *–s*) discussed previously, we also examine the form of the past tense verbs used in obligatory contexts. As the case with 3sg *–s,* the number of production of past verb forms by the two children also shows fluctuating trends. The observed data reveal that both subjects seem to have more problems with irregular verbs. The presentation of the data, however, is non-comparable as the number of obligatory contexts found in each child's transcripts is considerably different due to age and some other factors. Whenever age is being considered, Melati seems to produce many more contexts where such verbs are obligatory, while Mawar produces significantly less especially for the recordings samples collected within the first few months. In the following sections, the discussion will commence with data from Mawar, followed by a comprehensive discussion about Melati's data in the remaining part.

5.3.2.1 Accuracy with Regular Past Tense (with *–ed*)

In the table that follows, detailed data about tense markings (regular and irregular past tense) are presented. The table provides basic statistics about the two subjects' suppliance of regular past tense.

Table 14: Comparative View for Accuracy in Use of Regular Past Tense (*–ed*) by Mawar and Melati.

No.	Mawar					Melati				
	Age / MLU	Correct	Incorrect	Ø Suppl.	Total OC	Age	Correct	Incorrect	Ø Suppl.	Total OC
1	*2;4 / 1.92*	0%	0%	0%	0	*9;3 / 2.82*	14%	7%	79%	14
2	*2;5 / 1.77*	0%	0%	0%	0	*9;4 / 2.51*	32%	11%	58%	19
3	*2;6 / 1.97*	0%	0%	0%	0	*9;5 / 2.67*	8%	0%	92%	12
4	*2;7 / 1.56*	0%	0%	0%	0	*9;6 / 2.61*	0%	0%	100%	3
5	*2;8 / 1.56*	0%	0%	0%	0	*9;7 / 2.16*	100%	0%	0%	1
6	*2;9 / 1.87*	0%	0%	0%	0	*9;8 / 1.99*	0%	0%	100%	1
7	*2;9 / 1.66*	0%	0%	0%	0	*9;9 / 3.05*	21%	4%	75%	24
8	*2;11 / 1.48*	0%	0%	0%	0	*9;11 / 2.11*	0%	0%	100%	2
9	*2;12 / 1.50*	0%	0%	0%	0	*9;12 / 2.63*	20%	0%	80%	5
10	*3;1 / 1.91*	0%	0%	100%	2	*10;1 / 1.99*	0%	0%	100%	1
11	*3;2 / 2.30*	0%	0%	0%	0	*10;3 / 3.11*	38%	0%	63%	8
12	*3;3 / 2.01*	0%	0%	100%	3	*10;4 / 3.30*	59%	0%	41%	27
		Total OC			5		*Total OC*			117

From Table 14 above, we can see that there are huge discrepancies among data numbers and percentages between Mawar and Melati. As discussed in earlier sections, this has to do with the differences in their ages when the data were collected. For this obvious reason, data from the older child, Melati, clearly reveal more quantitative tokens of tense productions. Unfortunately, very limited production samples of past tense verbs were collected from the younger child.

The data from Mawar and Melati are of course non-comparable. With the data being collected around the age when L2 learners do not usually produce any utterances consisting regular past tense, Mawar obviously cannot provide sufficient samples for us to analyze and discuss. Therefore, the data from Mawar can only show us the point where she begins to produce the *–ed* morpheme, without any information about whether she has the necessary knowledge to inflect the verb or not. With very few examples of the regular past tense morpheme in production, Mawar's data in this regard do not tell us much about her knowledge of past tense *–ed*.

Melati's data, on the other hand, provide a great deal of information about her knowledge of *–ed* past tense. With the number of incorrectly inflected *–ed* verbs being many more than those with correct inflections, I certainly hope that it gives us a lot of information about her problems with realization of surface morphology as suggested in the Missing Surface Inflections Hypothesis. Further discussion about this will be thoroughly presented in the next chapter, which covers a more in-depth discussion. The discussion below will deeply elaborate on each subject's developmental path of regular past tense acquisition during the course of the 12-month data collection.

5.3.2.1.1 Mawar's Accuracy with Regular Past Tense (*-ed*)

With regards to Mawar, as can be seen in Table 14 above, her initial production of regular past tense markings is found in Sample 10 (age 3;1). It is a little bit surprising that very few samples of these properties have been found in Mawar's data, unlike the irregular morphemes that have been supplied in greater quantity. If we refer to the table, we can see that none of the obligatory contexts have been supplied with a relevant morpheme. If we look at Brown's stages of morpheme acquisition, , children in L1 contexts do not start producing regular past tense until between 35-40 months of age (MLU around 3.0-3.75) (refer to Brown 1973 and Bowen 2011). This is according to the result of Brown's prolonged longitudinal study involving three L1 children. Krashen's (1977) natural order for L2 acquisition also suggests that regular past tense knowledge is acquired after the other morphemes such as the plural *–s,* copula, auxiliary, and article has been fully acquired. Taking this into consideration, it is then not surprising to find out that Mawar, who is an L2 learner and has not reached 35 months of age during most of our recording sessions, produced a very limited number of tokens containing regular past tense morphemes. Only at sample 10 (age 3;1) do some of these morphemes start to appear in the data. Unfortunately, we cannot reveal the accuracy score as it is probably not reliable enough to represent her current suppliance status. For this reason, there is no justification to say that Mawar has acquired this morpheme.

In the transcripts, only five obligatory contexts of the past tense *–ed* have been detected in Mawar's production data. Among them, none has been supplied correctly. Instead, all verbs in all five obligatory contexts appear without any proper inflection (no *–ed* morpheme has been added). In the following, all incidents of regular past tense marking produced by Mawar, occurring in the last few recording samples, will be presented for our further discussion.

(35)	* I just open it like that	(Mawar	age 3;1)
(36)	* I bump her head	(Mawar	age 3;1)
(37)	* I drop something	(Mawar	age 3;3)
(38)	* What happen to her?	(Mawar	age 3;3)

These are the only utterances carrying regular past tense obligatory contexts produced by Mawar. From these examples, all the utterances are complete sentences with observable subjects and verbs, showing that she does not face any difficulties in producing short sentence structures. The only obvious problems with these sentences are present in the verbs that are not properly inflected in the required form. In each of these sentences, Mawar was having a conversation with her father while she was playing with her toys. The first and second examples involve her mentioning something that she recently did, about a few seconds before being spoken. There is a great possibility that she considers this a present action, meaning that the verbs were not properly inflected.

With the other two examples, the conditions are a little bit different. In *I drop something*, she was referring to an action that she recently completed, where the sense of past tense is very clear. Every native speaker would say this as *I dropped something* as it is a completed physical action. Mawar does not inflect the verb *drop* with, making it an error in regular past tense. In *what happen to her?,* Mawar and her parents were having a conversation about a little baby girl. As the mother described the girl, Mawar interrupted with the question above. It is clear that she uses the verb *'happen'* to refer to a completed event, involving the girl, that already took place in the past. The only problem with her sentence is that the verb is not correctly inflected in regular past tense form, *happened*.

A few possible explanations for this are found in the argument proposed by Borer and Wexler (1987) in their Maturational Hypothesis, and also in what Prévost and White (2000) identified as processing or communication pressure. Borer and Wexler argue that such phenomena have to do with the fact that young children's grammar is still at immature state. Considering Borer and Wexler's suggestion, we can reasonably expect to see an improvement (over time) in how young children like Mawar produce verbal inflection especially with regards to the regular past tense verb. That being said, we could expect to see more obligatory contexts, along with correct suppliance, of regular past tense verbs, if the recording samples were collected at a later age.

Finally, all the examples confirm that Mawar's knowledge of regular past tense was very limited, if not unavailable. If there were a small amount of knowledge about this morpheme, she would have inflected at least one of those verbs especially when the past

tense context was relatively clear. At this 'immature state' of age, morphological construction of this type would be unlikely to be produced by such a young learner.

5.3.2.1.2 Melati's Accuracy with Regular Past Tense (*-ed*)

Melati's data reveal that she produces a considerably high number of obligatory contexts in the regular past tense. Unfortunately, only 30% of all *–ed* verb obligatory contexts were correctly inflected. The remaining instances contain morphemes that are either incorrectly supplied (4%) or not supplied at all (70%). With this achievement, her accuracy score for this particular morpheme is 0.25 (25%), far below V&Y-S's 60% benchmark for minimum acquisition. Detailed monthly performance in regular past tense can be found in Table 15 above.

In general, Melati's data demonstrate her real issue with this type of morphemes. Having grown up with an L1 that does not overtly mark tense marking in any of it's verbs, Melati is expected to encounter an enormous challenge when it comes to supplying grammatical properties like past tense (Luk and Shirai, 2009). In the transcripts, Melati tends to generalize most of the verbs as a present tense form, with no overt inflection at all. As confirmed by Sneddon *et al.* (2012), the L1 Indonesian language marks tense mainly by embedding time markings (e.g., *yesterday, just now*) in order to show that an event has already taken place or completed (refer to relevant discussion abut this in chapter 2). In most conditions, especially in spoken language, the Indonesian speakers will recognize 'timings' by only referring to the context of the conversation. Let us consider example (39) and (40) below for our further reference.

(39) Maaf, saya tidur waktu kamu datang.
Sorry, I sleep-PAST time you come-PAST.
Sorry, I was sleeping when you came.

(40) Apakah kamu datang dengan saya besok?
Will you come-FUTURE with me tomorrow?
Will you come with me tomorrow?

From these examples, we can see that the verbs *datang* in (39) and *datang* in (40) are both expressed in the same base form. No inflection is involved when verbs in Indonesian are used in the present, past, or future contexts. In example 40, the word 'apakah' is a standard question marker that is used in different contexts and can be translated in a lot of different ways and by using various corresponding words in another language. Also, it can be used for past, present, or future questions in place of any auxiliaries, and its presence

never indicates a particular tense form in a sentence. In such conditions, Indonesian speakers use the context of a conversation in order to know the particular time of an action.

For this reason, Indonesian learners of L2 English usually face great difficulties when it comes to verb inflections. Let us now discuss how Melati's data represent her difficulties in regular past tense verb inflections. I will first focus on her incorrectly inflected regular past tense verbs (with *–ed*), followed by data about her correct suppliance on this morpheme. The following extracts represent some examples of the omission of regular past tense verb markings (*-ed*):

(41)	* We play ice-skating at …	(Melati	age 9;3)
(42)	* When it snow, …	(Melati	age 9;4)
(43)	* Azka stay five week more.	(Melati	age 9;6)

All these examples were collected from the first six transcsripts, which represent all the recordings made within the first six months of data collection. In Excerpt (41), Melati was talking about her weekend trip to Winchester. As she talked about what happened during her trip there, she mentioned her experience ice-skating, which had happened and was completed. It was clear to her that it had happened, but she still used a present tense verb to describe the event. Similarly, in Example (42), she was talking about her past experience playing with snow. In this excerpt, the verb *snow* was not appropriately inflected into the past form *snowed* although she certainly knew that it had happened. The last example also presents a similar problem when she does not use the past for *stayed* as she was talking about her friend's past holiday trip to Indonesia, which is obviously a past event.

We would actually expect that the production of such errors would decrease in number as time progressed and Melati continued to receive more input for her learning. However, the data show that, in the last six months of recordings, she progressed with similar errors. Let us refer to the following examples for further discussion:

(44)	* But I want to eat it	(Melati	age 9;9)
(45)	* You ruin my surprise	(Melati	age 10;1)
(46)	* … and we design it.	(Melati	age 10;4)

Just by looking at the above examples, it is clear to us that Melati has not progressed with her L2 acquisition, especially with regards to regular past tense. The verbs *want, ruin*, and *design* all represent the past event in their respective contexts, thus should have been inflected correctly in past form. Unfortunately, these examples have proven otherwise, and showed her consistency in producing similar errors over a long period of time. From the way

she supplied and inflected the verbs, it is very obvious that she had problems with the realization of surface morphology. She clearly had, to a particular extent, some knowledge of regular past tense verb inflection, but struggled to properly and consistently exhibit it at the morphological level. The following examples can be evidence of her basic understanding of regular past tense. These extracts are gathered from Samples 7 and 16 (age 9;9 and 10;14) where correct suppliance of past tense verb is mostly found.

(47)	* …and we played xxx and cooking	(Melati	age 9;9)
(48)	* then asked someone	(Melati	age 9;9)
(49)	* I dressed up like slave girl	(Melati	age 10;14)
(50)	* but then panda tried …	(Melati	age 10;14)

These examples provide important information about the existence of rudimentary knowledge about regular past tense verbal inflection. Although such evidence is low in percentage (30%), we know that the child possessed the knowledge but frequently omitted the morpheme for unknown reasons. Whenever the morphemes were supplied, most of them were correctly inflected. Only a small number of them (4%) were incorrectly supplied, meaning that they were probably not the result of random usage. As mentioned previously, about 74% of the verbs in regular past tense obligatory contexts were either misinflected or not supplied. Considering this, most of them (70%) were omitted (deliberately or not) due to the difference between L1 and L2's differences in the way both languages mark overt inflection for regular past tense. This would be possible due to the absence of past syntactic feature from tense in Indonesian. A similar case was found in a study by Hawkins and Liszka (2003) where Chinese speakers of L2 English omitted a large number of *t/d* in past tense contexts due to the fact that this feature is missing in Chinese. In most of the samples, we found very high percentage of non-suppliance for this particular morpheme. This should indicate the tendency to omit inflection, not to misuse it. Therefore, we conclude that Melati knew how to perform the inflection, but omitted it in most of the time.

5.3.2.2 Accuracy with Irregular Past Tense (without *–ed*)

Data about irregular past tense demonstrate an entirely different set of figures about the two subjects' acquisition trajectory of this particular morpheme. The following table provides an overview about Mawar and Melati's obligatory contexts for irregular past tense, along with the percentage of correctly and incorrectly supplied morphemes collected over 12 months period.

Table 15: Comparative View for Accuracy in Use of Irregular Past Tense by Mawar and Melati.

No.	Mawar					Melati				
	Age / MLU	Correct	Incorrect	Ø Suppl.	Total OC	Age	Correct	Incorrect	Ø Suppl.	Total OC
1	*2;4 / 1.92*	0%	0%	0%	0	*9;3 / 2.82*	29%	0%	71%	31
2	*2;5 / 1.77*	0%	0%	0%	0	*9;4 / 2.51*	48%	2%	50%	44
3	*2;6 / 1.97*	0%	0%	0%	0	*9;5 / 2.67*	56%	0%	44%	36
4	*2;7 / 1.56*	0%	0%	0%	0	*9;6 / 2.61*	63%	0%	38%	16
5	*2;8 / 1.56*	0%	100%	0%	2	*9;7 / 2.16*	89%	0%	11%	9
6	*2;9 / 1.87*	33%	67%	0%	3	*9;8 / 1.99*	0%	0%	100%	1
7	*2;9 / 1.66*	25%	75%	0%	4	*9;9 / 3.05*	66%	3%	31%	91
8	*2;11 / 1.48*	0%	100%	0%	1	*9;11 / 2.11*	75%	0%	25%	16
9	*2;12 / 1.50*	100%	0%	0%	1	*9;12 / 2.63*	73%	0%	27%	11
10	*3;1 / 1.91*	100%	0%	0%	1	*10;1 / 1.99*	100%	0%	0%	5
11	*3;2 / 2.30*	33%	0%	67%	3	*10;3 / 3.11*	69%	0%	31%	26
12	*3;3 / 2.01*	83%	0%	17%	6	*10;4 / 3.30*	69%	10%	21%	61
		Total OC			21		*Total OC*			347

Comparing information from this table with that of regular past tense provided in the previous section, we can see that the figures across 12 recording samples of irregular past tense morphemes contain relatively greater numbers than that of the *–ed* ones. This means that more utterance data are available for our analysis and discussion. In the following, a detailed discussion about the two subject's performance will be reported and discussed.

5.3.2.2.1 Mawar's Accuracy with Irregular Past Tense

As for Mawar, the data reveal that she produced many more utterances carrying irregular past tense obligatory contexts over the course of 12 months. Also, it can be seen that a few irregular past tense verbs started to appear in her language production in Recording 5, when she was 2;8 years of age. This is about the same age when L1 children start producing irregular past tense, which according to Brown (1973) normally occurs around month 31- 34 of age. However, no evidence could be used to claim that she had fully acquired this inflectional system at this particular age, especially due to the fact that samples representing this are still very few in number. Based on my observation, Mawar was still

struggling in producing the correct irregular past form of verbs, confirmed by the high number of incorrect suppliance in the data. According to the data, the overall rate of correct and incorrect forms of irregular verbs is very similar over the year.

The data clearly indicates a positive trend in the growth of Mawar's irregular past tense verb production. As detailed in the table, we can clearly see that her accurate suppliance tends to increase over time, which means that positive development occurred. With an accuracy rate of 68%, this indicates that she has passed the V&Y-S's 60% benchmark for the minimum acquisition requirement. However, she tends to supply incorrect forms of verbs more often than the case of non-suppliance.

In the first four months of the data sample (age 2;4-2;7), the transcripts do not show any production of irregular past tense by Mawar. Therefore, we can ignore these samples in our further discussion. Her first utterances retrieved from Sample 5, as mentioned before, are shown as in the following examples:

(51) * I was fall down (Mawar age 2;8)

(52) * I am falling (Mawar age 2;8)

The two utterances seem to be different in regards to their structures, but each reveals similar information which is the expression of past action using an irregular type of verb. In the first extract, it is very clear that Mawar used her knowledge of copula *be* which is hypothetically acquired earlier than the knowledge of verb inflection. In this example, she clearly knews and realized that the action she wanted to express had actually been completed, so there was a need for grammatical marking to show that it is a past event. Because she had not acquired the knowledge of verb inflection, the easiest way for her was to use a copula *be* and change it into a past form *was.* At this point of time, there was nothing in her mental lexicon saying that an inflected verb cannot coexist with a copula unless it is used in an acceptable combination (i.e., present or past progressive and passive voice). If she had this knowledge, the correct utterance *I fell down* would have been used instead of *I was fell down.*

In the second example, Mawar was observed trying to respond to her father's question '*what happened?'* during their normal family gathering at home. As he used the past regular verb, the question that the father asked clearly points to an event that had already happened at a specific time in the past. This type of question should trigger anyone who has sufficient knowledge of past tense to give the answer in a correct form of past time inflected verb. Therefore, the correct answer will normally consist of a verb in the past form.

Unfortunately, Mawar chose to do otherwise due to her lack of knowledge in English past tense. Instead of saying *I fell,* she instantly says *I am falling*, in response to her father's question.

Mawar's utterances have certainly not included correct usage of all past tense irregular verbs. However, there are already a few pieces of evidence where she attempted to express past events or actions although the verbs were not correctly inflected. Essentially, it did not take her a long time to she finally figure out the correct way to do it. In the production sample collected one month (age 2;9) after the first occurrences of irregular past tense obligatory contexts discussed previously, Mawar's data show more occurrences of the use of irregular past tense forms, a few of which are correctly inflected. For the following months' transcript in her data until the last month of data collection, her utterances always included at least one correct suppliance except for Sample 8 (age 2;11), where there is only one irregular past tense obligatory context incorrectly supplied. The following extracts provide some examples of correctly and incorrectly supplied irregular past tense verbs for our review.

(53)	Mommy I found it	(Mawar	age 2;9)
(54)	*I leave it in the carboot	(Mawar	age 3;2)
(55)	It broke	(Mawar	age 2;12)
(56)	*Yesterday I take a horse.	(Mawar	age 3;3)
(57)	She broke the window.	(Mawar	age 3;3)

From the examples, it is clear that Mawar's utterances have finally began to include some correct suppliances of irregular past tense verbs. In the first example, she successfully inflects the base verb *find* into *found*, which is quite an advanced achievement for an L2 child at her age. She has probably heard some inputs from adults or native speakers around her using the verb *found* to express an action of *find* that was already completed in the past. However, correctly inflecting one irregular verb does not mean that she will be able to successfully inflect the remaining irregular verbs when required in past tense context. The second utterance, for instance, shows us that she still used the infinitive form of the verb. In this regard, Mawar was having a conversation with her father who asked her where she had left her bike. Although he clearly referred to an action that she had already completed in the past, *left the bike,* Mawar's response did not include the use of a past tense verb at all. She used *leave* instead of *left,* which obviously violates grammatical rules of inflecting irregular past tense verbs.

In the next example, although she misuses the verb *take* instead of *ride,* the verb is still incorrectly inflected. The time marking 'yesterday' should clearly indicate that the action had happened in the past, therefore the verb should correctly inflect as *rode.* Unlike the previous one, the last sentence gives us another example of how she already had a good knowledge of irregular past tense. The conversation takes place on a flight when Mawar and her family took a vacation to Morocco. By chance, she accidentally saw a girl who sat in front of her hitting the glass window. As she reported this to her father, she mentioned the other girl's action, eventually completed, by correctly using the past tense verb *broke* (instead of *hit*) although the word choice was entirely correct.

By now, we have observed that the correct and incorrect use of irregular past tense by Mawar has been interfering with each other over the period of a year. On 48% of occasions, irregular past verbs were correctly inflected, while 38% of the time they were incorrectly supplied. It is also worth pointing out that, in the last two recording samples, she omits the inflections, leaving the verbs in bare form. This being considered, we conclude that her knowledge of irregular past tense is there. The evidence for this is that she produces inflections correctly most of the time whenever obligatory contexts are present. Incorrect and non-suppliance only occur when she seems to be confused with the use of correct inflections, which is not a result of any kinds of impairment.

5.3.2.2.2 Melati's Accuracy with Irregular Past Tense

Having discussed Mawar's production on past irregular verbs, let us now turn our attention to Melati's production of these verbs. As mentioned at the beginning of this section, Melati produces significantly more obligatory contexts related to past irregular verbs. As seen in table 15 provided earlier, there were 347 contexts where irregular past tense verbs are obligatory. In these obligatory contexs, slightly above 60% were correctly supplied whilst the rest contained with multiple types of errors. Just by looking at these figures, we can preliminarily assume that Melati's knowledge or proficiency on past irregular verbs is better than that of regular verbs. To remind us again, over 70% of her regular past tense verbs analyzed from the 12-month transcript data were incorrectly supplied. In the following discussion, we focus on Melati's production of past irregular verbs and how they developed throughout the year.

For 12 months, Melati's production of irregular past tense showed a positive development for correct suppliance, while the number of incorrectly supplied verbs decreased over time. There is one point of time (Sample 6, age 9;8) where no correct

suppliance has been found, but this occurs when there is only one obligatory context is available. In other samples, the percentage of her correct suppliance outnumbers the incorrect suppliance, giving us a clear overview of her current knowledge of this particular morpheme.

Many of her incorrectly supplied morphemes constitute problems with modifying irregular verbs for past tense context. At least three types of irregular past tense verbs inflection errors have been recorded. The first one involves leaving the verb in its base form or without inflection. The second type involves verbs that are inflected with an additional *–ed*. As also happens with many other L2 learners, subjects tend to inflect past tense verbs by simply adding the *–ed* suffix behind the verbs themselves, which is not the case for irregular verbs. Irregular verbs change form, either partially or totally, when used in past or participle contexts, and this is what confuses many L2 learners. The other errors are verbs that are inflected without any particular pattern. The following extracts represent cases where verb are left in bare forms.

(58)	*I see a big building	(Melati	age 9;3)
(59)	*We eat chicken	(Melati	age 9;6)
(60)	*..then we go at the beach.	(Melati	age 9;9)

These types of errors are found in abundance in the complete transcripts of Melati's corpus. It is unclear whether she cannot really inflect the verbs properly or tries to 'play safe' simply by ignoring the inflections. All three examples above were parts of her utterances when she talked with the interlocutor about what she had done during different trips in the past. In fact, most of her errors have been found in these forms. In Sample 7, for example, the verb *go* has been found uninflected at least nine times. In the sample transcript, several other verbs are also found uninflected multiple times. This particular transcript consists of a conversation between Melati and an interlocutor about her holiday trip to Isle of Wight, which is clearly something that was completed in the past. Although she was talking about different events she had experienced in the past, many of her utterances in these particular transcripts consist of incorrect suppliance of past tense irregular verbs.

In some of the samples, regular grammatical patterns are extended to irregular verbs, an idea of which is widely known as 'overregularization' (Pinker, 1986). Children are known to do this when they over-apply certain inflectional rules of verbs and their tenses. Having found to be common in highly inflected languages such as Russian (Goodridge, 2016), the overregularization phenomenon is also common in English. The following extract is an example collected from Melati's transcript.

(61) *Titanic sinked in Antarctica. (Melati age 10;4)

This is the only example of such an error retrieved from the entire corpus of Melati. Although very limited examples have been found, it is important to take into account that she still seems to confuse herself with the use of regular and irregular past tense formulas. While the –e*d* ending is exclusively reserved for inflections with regular past tense verbs, she somehow uses it with an irregular verb (saying *sinked* instead of *sank*). Children growing up with highly inflected language like Russian usually learn this concept by going through the stage known as Optional Infinitives (discussed elsewhere in this dissertation), where they optionally use infinitive forms of verbs they are unable to inflect correctly. In the context of child L2 learners of English who grow up with a language with low verbal inflection, such as Indonesian, the most common way is usually to extend the rule of regular verb inflection and use it with irregular inflection, as shown in Extract 61 above.

In addition to the overregularization phenomenon, we have also observed that there are past irregular verbs that were supplied with random inflection, as in the following examples.

(62) It's took like an hour (Melati age 9;4)
(63) The postcard was fell in my school (Melati age 9;9)
(64) My mom waking me up (Melati age 9;9)
(65) I done it that way (Melati age 10;4)

Errors of this type are quantitatively low in the data. However, I found that they provide interesting information about Melati's irregular verbs production patterns. In the first and second extract above, for instance, a combination of copula and verb is still being used when expressing a past tense verb (a separate discussion about this will be provided in a relevant section). In addition, the third sentence probably represents her confusion between the use of past progressive or simple past tense verb. None of these forms were used correctly. The last sentence is perhaps more confusion between simple past or a past perfect form.

Finally, as can be seen from Table 15 above, the number of correctly supplied morphemes increases progressively in the first 5 samples. Although there was no correct morpheme found in Sample 6, this trend continues in the following four samples until it reaches 100% correct suppliance in Sample 10. It drops slightly again in the last 2 samples, but the correct suppliance figures are still above the yearly average.

Considering the high percentage of correct suppliance (61%, 213/347), against 36% (124/347) of non-suppliance and 3% (10/347) of incorrect suppliance, I firmly believe that Melati has the necessary lexical knowledge of irregular past tense verb inflections. The fact that she produces a relatively low rate of wrong inflections proves that she already has unconscious knowledge of the relevant property of grammar.. The 36% non-suppliance may be due to some confusions she experienced, such as not knowing the exact form of past tense for particular verbs. In such cases, children usually return the verbs into the default form, which is the infinitive. Our findings here support, to some extent, the existence of widely known phenomenon of over-applying specific conjugation rules to verbs and their relevant tenses (Goodridge, 2016). He argues that this overregulation phenomenon in English occurs before young learners are able to master complex rules of grammar, which in this case is true for Mawar. He also adds that such occurrences can also be found in the acquisition of Russian through the Optional Infinitive phenomenon, where Russian children are provided with a way to express basic forms of words before they are able to conjugate words correctly (Pinker, 1986).

We then conclude that such variability that occurs in Melati's data is a result of problems with morphological realization rather than any kinds of impairment in the grammar system.

5.3.3 Accuracy with Plural *–s*

Plural *–s* is one of the most problematic morphemes for Indonesian learners of English. As the Indonesian language does not mark plural nouns by using *–s* morpheme, the production of this particular morpheme by Indonesian speakers often generates a large number of errors. The case with Mawar and Melati is not an exception as the majority of errors found in their transcripts are of this kind. As predicted, the older child, Melati, produces a higher percentage of incorrect suppliance (60%) than correct ones (40%). This refers to any incorrectly inflected items such as the use of *–s* with any subject other than the third person singular and the use of copula *be* with the incorrect subject. Mawar, on the other hand, produces more correct suppliance (73%) than incorrect suppliance (27%). The following table provides detailed information about the two children's suppliance of plural *–s*.

Table 16: Comparative Overview for Accuracy in Use of Plural *–s* by Mawar and Melati.

No.	Mawar					Melati				
	Age / MLU	Correct	Incorrect	Ø Suppl.	Total OC	Age	Correct	Incorrect	Ø Suppl.	Total OC
1	*2;4 / 1.92*	75%	0%	25%	4	*9;3 / 2.82*	43%	0%	57%	21
2	*2;5 / 1.77*	100%	0%	0%	1	*9;4 / 2.51*	44%	0%	56%	18
3	*2;6 / 1.97*	50%	0%	50%	6	*9;5 / 2.67*	33%	0%	67%	18
4	*2;7 / 1.56*	80%	0%	20%	5	*9;6 / 2.61*	70%	0%	30%	10
5	*2;8 / 1.56*	89%	0%	11%	9	*9;7 / 2.16*	60%	0%	40%	5
6	*2;9 / 1.87*	86%	0%	14%	7	*9;8 / 1.99*	67%	0%	33%	6
7	*2;9 / 1.66*	71%	0%	29%	17	*9;9 / 3.05*	13%	0%	88%	16
8	*2;11 / 1.48*	100%	0%	0%	2	*9;11 / 2.11*	50%	0%	50%	8
9	*2;12 / 1.50*	57%	0%	43%	7	*9;12 / 2.63*	62%	0%	38%	13
10	*3;1 / 1.91*	67%	0%	33%	9	*10;1 / 1.99*	60%	0%	40%	5
11	*3;2 / 2.30*	75%	0%	25%	4	*10;3 / 3.11*	75%	0%	25%	4
12	*3;3 / 2.01*	77%	0%	23%	13	*10;4 / 3.30*	28%	0%	72%	25
		Total OC			84		*Total OC*			149

In the following sub-sections, how these numbers are collected and what they represent will be clearly discussed.

5.3.3.1 Mawar's Accuracy with Plural *–s*

The first productions of plural *–s* by Mawar were discovered in Sample 1 (age 2;4), where four obligatory contexts of this morpheme are found. From this point onwards, the plural *–s* morpheme can be seen to be consistently supplied.

The data reveal that the percentage of correct suppliance is always higher than those of incorrect ones. With only two samples showing the percentage of correct suppliance below 60% (Samples 3 and 9), the rate of correct suppliance across the samples is calculated at around 74%. Considering these statistics, we are convinced that Mawar has already acquired this morpheme to some extent. In other words, this figure can be used as evidence showing that most plural *–s* morphemes are correctly inflected whenever they occur in obligatory contexts. However, it is possible that there are some errors during the process of learning.

Many errors related to plural morphemes occur in the form of *–s* morpheme omission. By this, I refer to the condition where the required morpheme is not supplied wherever obligatory contexts are available. In some other examples, although the morpheme is supplied, the corresponding verb (usually a copula) does not agree with the noun. The following extracts highlight this.

(66) * Three triangle (Mawar age 2;6)

(67) * One two three frog (Mawar age 2;9)

(68) * Fifty pound (Mawar age 3;3)

From these extracts, we can see that plural *–s* morpheme are consistently being omitted across the three samples. In the first example, although a quantifier *three* is present, Mawar still did not supply an *–s* to signal that the noun *triangle* is in plural form. Similarly, in the second example, she was actually counting the number of frogs in a picture she was holding. Although there is more than one pictures of frog, she also dropped an *–s* in the sentence she produced. In the last utterance, as in the first, the word *fifty* clearly signifies that the noun *pound* that follows should appear in a plural form. Nonetheless, Mawar still omitted the *–s* morpheme in such an obligatory context. The three examples displayed here represent the majority of errors produced by Mawar in a plural *–s* obligatory contexts. In addition to these, as previously mentioned, there also a few other forms of errors that we can discuss, as in the following.

(69) * This is bubble (Mawar age 2;6)

(70) * That's grape (Mawar age 2;7)

These examples show us that the omission of plural *–s* morpheme can also occur alongside the omission of the copula. In both examples, the nouns *bubble* and *grape* are normally used as plural unless they appear in single, which is a very rare case. It is important to mention that Mawar, in each case respectively, was talking to the interlocutor about *bubbles* she was playing and *grapes* she was eating, so the context in both cases is clearly plural.

In the first example, the noun *bubble* is missing an *–s* for the plural form although there is obviously more than one bubbles coming out from the bubble blower. In addition to that, Mawar also failed to inflect the correct copula for the plural noun (using *is* instead of *are*). The use of demonstrative *that* is also inappropriate, as the correct word should be *these*. In the second example, similarly, the noun *grape* is being supplied as a singular although there is more than one *grapes* being in the conversation. As is the case in the first example, the copula is also inflected incorrectly. Instead of *is,* it should appear as *are*, along with the demonstrative pronoun *these* to indicate plural noun to be mentioned immediately after.

Finally, from the statistics of Mawar's production related to plural *–s* (74% correct, 26% non-suppliance, and 0% incorrect suppliance), the calculation results in 77% accuracy score, which is considerably high. This exceeds the V&Y-S's 60% cut-off point for minimal

acquisition. I would argue that inflection is not essentially impaired. Rather, she tends to have unconscious knowledge of the functional projections underlying plural morpheme but has a problem with the realization of surface morphology, as suggested by Prevost and White (2000).

5.3.3.2 Melati's Accuracy with Plural *–s*

Unlike Mawar, Melati seems to have much more problems with the plural *–s* morpheme. The data clearly indicate that Melati produces a decent number of correct morphemes. In this particular case, plural *–s* morpheme are correctly supplied in 50% of obligatory contexts, while the rest appear to be omitted for different reasons. Considering this, I am convinced that this particular morpheme has not been fully acquired by Mawar, especially when we consider V & Y's 60% cut-off point for minimal acquisition. However, we can see a gradual increase in her production quality. In the following discussion, we will try to put together several examples from her suppliance data, particularly on which types of errors are frequently made.

Similar to Mawar, Melati produces a large number of utterances containing (supposedly) plural nouns with the *–s* morpheme being dropped for particular reasons. The following examples will highlight this.

(71) * Some book is make me laugh (Melati age 9;3)
(72) * I did it three an four hour (Melati age 9;9)
(73) * It's two hour and more (Melati age 10;4)

As we can see above, the noun *book* in the first example is not correctly inflected to show plurality. Similarly, the noun *hour*, as in the second and third example respectively, is also not properly inflected. A large number of incidents like these are found in Melati's transcripts. Considering the large number of non-suppliance for such cases, it is possible that Melati is still in the process of developing her L2 awareness in this particular morpheme. If we compare to Mawar, the acquisition process for Melati might take longer time as she has been growing up, at least for 9 years, with a language that does not mark plural nouns. In the case of Mawar, her L1 and L2 develop simultaneously, making it easier for her to differentiate between the two.

In addition to the previously mentioned examples, Melati also produces a few other types of errors with plural *–s*, some which will be presented below.

(74) * … because she is twin (Melati age 9;4)

(75) * … there is some family … (Melati age 9;9)

(76) * There's two bed (Melati age 9;12)

(77) * All of them is consonant (Melati age 10;3)

In Example (74), not only is the noun *twin* incorrectly inflected in a plural form, but the subject *she* and the copula verb *is* are also wrongly supplied. At the time of the recording, Melati was talking about her twin friends, which are obviously not a noun in the single form. The correct sentence should therefore be '*... because they are twins*'. In the other three examples, the nouns *family, bed,* and *consonant* are all supposed to be in the plural form as a plural modifier precedes each of them. Considering this, any copula or verb used should agree with the plural noun. None of these requirements has been fulfilled in these sample utterances, indicating some problems with the realization of surface morphology.

Similar to what we have been discussing in the previous sections, no evidence has been found that her omission of plural *–s* was due to lack of functional categories. I would argue that difficulties with overt realization of surface morphology were the cause for multiple omissions of plural *–s.*

5.3.4 Accuracy on *be*

Be verbs are one of the first verbs that appear in the younger child's (Mawar) earliest samples. Many of these early utterances are in the form of *it's* a …, *that is* a …, *what's ...,* as in the following examples.

(78) What's that? (Mawar age 2;4)

(79) That's book (Mawar age 2;4)

It is often hard to decide whether some of these utterances are unanalysed forms or not. Many, however, are excluded from the calculation as they are generally chunks, as shown in the following:

(80) This is… (Mawar age 2;5)

The utterance in (80), for instance, has been excluded as it occurs repeatedly for at least three times following the interlocutor's words. Therefore, I cannot consider this as a genuine production (to be considered as productive, a form needs to be expressed at least in three different types within a speech). There are a number of other similar occasions where

utterances like this have been excluded as they do not adequately represent the child's actual production. In the following extensive discussion, I will try to elaborate the production of copula *be,* and auxiliary *be* by Mawar and Melati in two different sections. This is because the two morphemes function differently, thus requiring different sets of examples and explanations.

5.3.4.1 Copula *be*

The copula *be* is one of the earliest acquired morphological structures by L1 learners after progressive *–ing*, plural *–s*, and the previously discussed irregular past tense. Table 17 below provides detailed overview about the use of copula *be* by the two subjects. It will then be followed by a separated discussion for each subject.

Table 17: Comparative Overview for Accuracy in Use of Copula *be* by Mawar and Melati.

No.	Mawar					Melati				
	Age / MLU	Correct	Incorrect	Ø Suppl.	Total OC	Age	Correct	Incorrect	Ø Suppl.	Total OC
1	*2;4 / 1.92*	62%	0%	38%	13	*9;3 / 2.82*	90%	0%	10%	49
2	*2;5 / 1.77*	94%	3%	3%	31	*9;4 / 2.51*	82%	13%	5%	60
3	*2;6 / 1.97*	55%	9%	36%	11	*9;5 / 2.67*	80%	8%	12%	51
4	*2;7 / 1.56*	80%	8%	12%	51	*9;6 / 2.61*	91%	4%	4%	47
5	*2;8 / 1.56*	91%	8%	2%	53	*9;7 / 2.16*	97%	3%	0%	37
6	*2;9 / 1.87*	93%	4%	3%	67	*9;8 / 1.99*	96%	0%	4%	27
7	*2;9 / 1.66*	90%	3%	6%	63	*9;9 / 3.05*	77%	14%	9%	121
8	*2;11 / 1.48*	76%	0%	24%	21	*9;11 / 2.11*	95%	0%	5%	95
9	*2;12 / 1.50*	75%	0%	25%	44	*9;12 / 2.63*	98%	2%	0%	48
10	*3;1 / 1.91*	94%	0%	6%	67	*10;1 / 1.99*	100%	0%	0%	28
11	*3;2 / 2.30*	93%	2%	5%	57	*10;3 / 3.11*	97%	3%	0%	60
12	*3;3 / 2.01*	93%	3%	3%	86	*10;4 / 3.30*	86%	6%	8%	103
		Total OC			564		*Total OC*			726

5.3.4.1.1 Mawar's Accuracy with Copula *be*

Mawar's acquisition of the copula *be* shows a positive developmental trend. As mentioned earlier, and as detailed in table 18, her first utterances containing morphological structures of the copula *be* appear in the first transcript of data collected at age 2;4. This sample, along with Sample 3 collected two months later, is one of only two transcripts

containing lowest percentage of correct suppliance. Further samples confirm that her knowledge of the copula *be* improves over time. Additionally, by looking at the number of obligatory contexts found in the first transcripts (samples), it is believed that Mawar might have already produced basic examples of the copula *be* at some points of time before she turned 2;4.

The first examples of Mawar's unique errors with copula *be* involve omission of the *be* verb itself although the context clearly requires and the interlocutor promptly signifies the need for one. The following short extract of a conversation between Mawar and the interlocutor confirms this.

(81) INT: Are you sure?
CHI: I sure. (Mawar age 2;4)

This example is a fascinating one to observe. We can see that the interlocutor's question clearly contains a copula as the main verb of the sentence. Mawar's response, however, contains none. More interestingly, such identical utterances are found three times in that particular transcript, all with exactly the same prior question from the interlocutor. Out of 13 copula *be* obligatory contexts in this particular transcript, five appear with incorrect or misformed suppliance. Therefore, we cannot merely say that Mawar did not possess the knowledge of copula *be.* Instead, she seems to have randomly dropped the copula. Overall, most of her problems with copula involve omissions of the copula itself where obligatory contexts exist. Here are a number of other examples:

(82) *It Arkan. (Mawar age 2;4)
(83) *That red. (Mawar age 2;6)
(84) *My mommy home. (Mawar age 2;9)
(85) *This car. (Mawar age 2;12)
(86) *We in the sky. (Mawar age 3;3)

In addition to these, many copulas have also been incorrectly supplied. By this, it means that the copula does not agree with the corresponding subject. The copula *is,* for instance, is supplied when the corresponding subject is plural, making it an absolute error. The following examples will give us general representations of this.

(87) *This is fingers. (Mawar age 2;5)
(88) *xxx color is the grapes? (Mawar age 2;7)
(89) *Where is daddy's glasses? (Mawar age 2;9)
(90) *That is my friends. (Mawar age 3;3)

By looking at the examples above, we can quickly realize that Mawar acknowledges the need of a copula in each of the sentences. Unlike the previous set of examples, the above sentences are uttered with complete structure without any copula missing. The only problem with the copulas is that they are all incorrectly supplied, showing disagreement with the corresponding noun. In the first and last sentences, for instance, the supplied copula *is* disagrees with the plural nouns *fingers* and *friends.* Instead of supplying *are*, Mawar uses *is* in the verb position of the sentence. In the second one, it is possible that Mawar considers the noun *grapes* as one collective singular noun, causing her to supply *is* instead of *are.* This is closely related to the next sentence where 'a pair of glasses' is usually considered as a singular noun by many L2 learners, therefore confusion always occurs when it comes to such L2 PLURALIA TANTUM*,* Latin for plural only.

These errors occur randomly in the transcripts. Although some of the incorrectly supplied copulas have been found in the data, many were supplied correctly by Mawar. Out of the total 564 copula *be* obligatory contexts found in all 12 samples of transcripts, 497 (88%) of them were correctly supplied. This means that only 12% are either missing or incorrectly supplied. The following examples of correctly supplied copula *be* convince us that Mawar has already acquired some degree of knowledge related to the copula *be.*

(91)	What is your name?	(Mawar	age 2;4)
(92)	That is boy.	(Mawar	age 2;7)
(93)	Yes this is small.	(Mawar	age 2;12)
(94)	I am girl.	(Mawar	age 3;3)

These examples are a small portion of cases for correctly supplied copula *be* collected among nearly 500 others, showing us that her degree of knowledge of this morpheme is relatively high. With an 85% accuracy score, it is indeed considered as a morpheme that she uses extremely well in terms of how accurately it is verbally supplied. This figure is also a little below Brown's 90% accuracy rate being used with L1 children. With a relatively low percentage of non-suppliance (9%), I am also convinced that L1 interference has not taken place. Being exposed to her L1 (Indonesian) and L2 (English) simultaneously, it is still very possible for Mawar to omit some number of copula *be* in her utterances as a result of the absence of this morpheme in her L1 grammar system. However, if L1 interference had taken place, the omission rate would have been very high. In addition, the trend of omission seems to decrease, showing that her knowledge of the copula *be* improved over time as she got more exposure to L2. The 3% incorrect suppliance, as in **this is fingers* or **this one is my*

shoes could be a result of her confusion with plural or singular nouns, making it hard for her to decide promptly which copula is appropriate .

Although various cases of non-suppliance and incorrectly supplied copulas have been found, a vast number of correctly supplied morphemes have been gathered from the data. Copulas, like many other morphemes, can also appear in contractible and uncontractible forms. Therefore, it is also important to add supplementary discussion about them. The following section will briefly summarize how and when contractible and uncontractible copulas occur in the data.

5.3.4.1.2 Melati's Accuracy with the Copula *be*

Having discussed Mawar's production data, let us now move into detail with Melati's data. As detailed in Table 18, Melati's complete 12 datasets of transcripts consist of 726 obligatory contexts for the copula *be.* Around 88% of these obligatory contexts were correctly supplied while the other 12% include both non-suppliance and incorrectly supplied copulas. From this statistic, it is clear that her knowledge of copula *be* is well developed. Although Melati's average percentage of correct suppliance was 88.7 %, there are still several occasions where the rate of correct suppliance is much lower than the average. These include Sample 3 (80%), Sample 7 (77%), and Sample 12 (86%). In general, however, her proficiency in supplying copula *be* is surprisingly high. This results in a high accuracy score of 93%, which indeed exceeds Brown's 90% cut-off point initially applied to L1 learners. From this data, we can assume that her knowledge of copula *be* is very advanced, although about 11 % of copula *be* obligatory contexts are still omitted or incorrectly supplied. In general, however, the quality of suppliance improves gradually. For this reason, we are convinced that the influence of the first language is very minimal.

Similar to Mawar, many errors in Melati's copula *be* suppliance also involve omission of the *be* verb and supplying an incorrect copula that does not agree with the corresponding noun. To some extent, Mawar and Melati reveal the same pattern on how their errors with copula *be* are exhibited. They both tend to either omit the copula or supply with the wrong one if one exists. The following extracts give us a more precise overview of copula *be* omission tokens collected from Melati's transcripts.

(95) * What your favorite book? (Melati age 9;3)
(96) * This one long? (Melati age 9;6)
(97) * Katie I much warmer now. (Melati age 9;11)
(98) * When master Ugure still alive (Melati age 10;4)

From these examples, we can see that similar errors tend to appear in almost all the sample transcripts. The trend shows that Melati seems to keep making these errors over and over. By my calculation, at least 36 (43% of the total errors) utterances with non-suppliance of copula *be* in obligatory contexts were found over the course of one year.

Looking at these errors from an Indonesian grammatical structure point of view, the omission of the *be* verb is very reasonable. As Indonesian does not recognize the copula *be* in its lexical category, it is most likely that Indonesian young learners of English carry the same structure when producing English sentences. To understand this, below is the relevant Indonesian translation of one of the above utterances:

(99) When master Ugure ~~was~~ still alive
Saat master Ugure Ø masih hidup.

This translation gives us a clear overview of how the absence of copula *be* in learner's first language grammatical system woulds result in a problem with surface morphological realization in L2 production. Obviously, Melati realized the requirement of the copula *be* in verb-less sentences as above. This is proven in all utterances with the correctly supplied copula *be.* However, the fact that her L1 does not use copulas at all has influenced her performance in producing such utterances in English.

Apart from non-suppliance of the copula, the suppliance of an incorrect copula is also very common in Melati's data.

(100) * There's lots of game (Melati age 9;5)
(101) * There's a lot of people (Melati age 9;9)
(102) * My feet was… (Melati age 10;3)
(103) * … is some photos that ayah take (Melati age 10;4)

In looking at these examples, a proficient English speaker will quickly recognize the disagreement between the copula and the subject of each sentence. Melati's obvious mistake here is supplying a singular copula for a plural noun, or vice versa. In Sentence (100), for instance, the contractible copula *is* is incorrectly supplied as the corresponding noun, *lots of game*, is in plural form. The problem with this sentence is not only with the copula, but also with Melati's failure to pluralize the noun *game.* A similar case also appears in Example (103) as the copula *is* does not agree with plural noun *photos,* which in this case comes after the copula. In (102), however, the case is slightly different. The noun *feet* does not require an *–s* in order to be transformed into the plural form as it is classified as an irregular noun. In this particular context, perhaps Melati got confused with whether the copula should agree

with a singular or plural noun. With limited thinking time, her default option would be singular.

5.3.4.2 Contracted vs. uncontracted copulas

Brown (1973) suggests that contractible and uncontractible copulas appear at different points of time along the course of language acquisition. In his study of three young L1 learners, he suggested that the order of acquisition would be uncontractible copula, uncontractible auxiliary, contractible copula, and contractible auxiliary.

In Mawar's case, the order is quite different from those of Brown's. A few examples of utterances carrying uncontractible copula have been found in Sample 1 (age 2;4) and many more start to appear as time progresses. However, one or two contractible copulas have also started to appear at this stage. Utterances like *who's that* and *it's blue*, for instance, have been found at age 2;4 and 2;5 respectively. This suggests that Mawar's shortened form of copula appears considerably earlier than that of L1 learners, which according to Brown, contractible copula use appears around 41-46 months of age.

Many of her contractible copulas appear in short utterances that are repeated for so many times by the child. Hoff (2012) suggests that these types of utterances may be considered as chunks and therefore are excluded from the counting. For this particular reason, utterances like *who's that* and *what's that* are excluded from the calculation for Mawar as they are considered as chunks and are not original utterances produced by the child.

With regards to Melati, knowing when the contractible and uncontractible copulas first appear in the data is not essential. The reason for this is that, at her current age, the knowledge of both contractible and uncontractible copulas are assumed to have fully developed. Several errors, however, have been found involving copulas when they are contracted, as in examples 104 and 105 below.

(104) * … but there's no time (Melati age 9;5)
(105) * … there's some family that … (Melati age 9;9)

From these examples, it is clear that copula *be* may still be incorrectly supplied even if they are already contracted. In the first example, Melati was discussing some particular past events she had experienced with her mother. For this specific reason, the phrase *there's* should read *there was* as it had already happened. This is still counted as missuppliance of the copula, as the incorrect copula was used for a particular time when the event took place.

Similarly, the second example exhibits a similar issue with the use of contracted copula by Melati. A proficient speaker of English would agree that a quantifier 'some' requires a plural *be* verb in a sentence. Therefore, the suppliance of *is* instead of *are* is regarded as a typical L2 learner's error.

5.3.4.3 Auxiliary *be*

In addition to the copula *be*, the use of copula as an auxiliary wa also one of the properties being investigated. As they are both used in totally different contexts and purposes, the discussion for these morphological properties should then be separated. The following table highlights important information about the two subjects' data in regards to their use of the copula *be* as an auxiliary.

Table 18: Comparative Overview for Accuracy in Use of Auxiliary *be* by Mawar and Melati.

No.	Mawar					Melati				
	Age / MLU	Correct	Incorrect	Ø Suppl.	Total OC	Age	Correct	Incorrect	Ø Suppl.	Total OC
1	*2;4 / 1.92*	0%	0%	0%	0	*9;3 / 2.82*	80%	0%	20%	5
2	*2;5 / 1.77*	0%	0%	100%	1	*9;4 / 2.51*	90%	0%	10%	10
3	*2;6 / 1.97*	0%	100%	0%	1	*9;5 / 2.67*	0%	0%	100%	2
4	*2;7 / 1.56*	90%	0%	10%	10	*9;6 / 2.61*	71%	0%	29%	7
5	*2;8 / 1.56*	80%	7%	13%	15	*9;7 / 2.16*	100%	0%	0%	1
6	*2;9 / 1.87*	90%	0%	10%	20	*9;8 / 1.99*	100%	0%	0%	2
7	*2;9 / 1.66*	83%	6%	11%	18	*9;9 / 3.05*	50%	10%	40%	20
8	*2;11 / 1.48*	75%	0%	25%	4	*9;11 / 2.11*	63%	0%	38%	16
9	*2;12 / 1.50*	86%	0%	14%	7	*9;12 / 2.63*	82%	0%	18%	17
10	*3;1 / 1.91*	71%	0%	29%	7	*10;1 / 1.99*	88%	0%	13%	8
11	*3;2 / 2.30*	86%	3%	10%	29	*10;3 / 3.11*	80%	10%	10%	10
12	*3;3 / 2.01*	69%	6%	25%	16	*10;4 / 3.30*	69%	8%	23%	13
		Total OC			128		*Total OC*			111

5.3.4.3.1 Mawar's Accuracy on Auxiliary *be*

With regards to Mawar, neither incidence nor obligatory contexts in the use of auxiliary *be* has been found in the first recording sample transcript. From the second recording onwards, however, auxiliary *be* obligatory contexts are present frequently, thus incidences with correct and incorrect suppliance can be traced. The data in Table 19 show us a number of important points. First of all, Mawar's correct suppliance on auxiliary *be* obligatory contexts, in contrast with the incorrect and no suppliance, has been extremely high in percentage. With 81.3% correct suppliance, 14.8% no suppliance, and 3.9% incorrect suppliance, the calculated accuracy rate is 66%. Being slightly above V & Y-S's 60% cut-off

point, we can assume that she has fully acquired this morpheme although some traces or errors are still found here and there.

The first three recording samples present us no correct suppliance from Mawar. It is possible that the auxiliary *be* had not become part of her morphological knowledge, but no suppliance could also be a result of many other factors. As suggested by Brown (1973), even L1 learners take 41-46 months until they can show traces of uncontractible auxiliary in their utterances. Therefore, it is not surprising to find out that an L2 learner like Mawar produced no utterance containing auxiliary *be* between the age of 2;4-2;6. Typical errors retrieved from Mawar's first transcripts reveal that non-suppliance of the auxiliary is common, for example in **bibi do drawing (bibi is drawing)*.

Most of Mawar's errors, with regards to auxiliary, found throughout the year, are in this form (non-suppliance of auxiliary). However, there are also cases where auxiliary is supplied but other required morphemes, like *–ing* in *she is singing*, are missing. In a few other cases, the incorrect auxiliary has been supplied (i.e., *are* instead of *is*). There is also another incident where auxiliary *be* is replaced by *do* (i.e., *she don't eating*).

When cases of non-suppliance are found, usually the required auxiliary *be* is somehow missing. There are at least 20 tokens of auxiliary non-suppliance when obligatory contexts are found. The following are several examples for our review.

(106)	* this falling down	(Mawar	age 2;7)
(107)	* airplane flying	(Mawar	age 2;9)
(108)	* daddy what you going?	(Mawar	age 2;12)
(109)	* I putting something	(Mawar	age 3;3)

In Example (106), Mawar was recorded holding a piece of cheese when it suddenly slipped out of her hand. What she meant to say was actually the progressive event with present continuous tense. While most of the grammatical requirements are in place, the sentence is still missing *is*. It is perhaps important to mention that Mawar expresses a few other similar utterances (i.e., *the phone is falling down*, *koala is falling down*), in the same transcript, with no required morpheme being absent. In the second example, the copula *is* is missing from the sentence. At the time of the recording, Mawar was playing at the park with her father and watching an airplane flying overhead. This should indicate that the sentence is is in progressive form and therefore an obligatory context for the auxiliary is in place.

The interrogative sentence as in (108) certainly requires the presence of an auxiliary *are.* In this sentence, Mawar has dropped the auxiliary where an obligatory context is

present. Similarly, the last example is missing the auxiliary *am* (the correct sentence should say *I am putting something*). This example has been retrieved from the last recording transcript collected when Mawar was 3;3 years of age, indicating that identical errors were still being uttered after nearly one year of data collection.

Besides these majority of auxiliary non-suppliance errors, Mawar also produced a few other errors as mentioned earlier. The subsequent examples will illustrate this.

(110) *Bibi do drawing (Mawar age 2;7)

In this particular example, Mawar referred to herself as 'bibi', which is her name at home. All she meant to say here is *I am drawing.* This could be a little more complex because when a subject noun as *bibi* and the pronoun *I* are placed in the subject position, they both require a different verb or auxiliary. In either case, Mawar's utterance is not supplied with an auxiliary to express her progressive action *drawing.* Mawar's L1, Indonesian, does not recognize such an auxiliary, so the omission of an auxiliary here is very much expected. Another possibility for the use of such a construction is due to the fact that applying the default form *do* is much more simple than combining the auxiliary *is* with the non-finite verb *drawing.* As both Brown (1973) and Krashen (1977) suggest, the auxiliary is usually acquired in later age. Example 111 below, however, suggests an opposite fact.

(111) * I'm sit (Mawar age 2;9)

There is a suspicion that Mawar confuses two possible grammatical tense structures, the present tense and present progressive. One one hand, if present tense was applied, there should not be any co-occurrence of *be* and the infinitive verb at the same time (as in *I sit*). On the other hand, when present progressive (continuous) is used, an auxiliary and *–ing* verb should co-exist (as in *I'm eating*). The fact that an auxiliary and infinitive verb co-occur in Mawar's utterance tells us that the structure of the sentence has randomly been chosen. Let us look at Example 112 below for another missupliance of the auxiliary in obligatory context.

(112) * What do you doing mommy? (Mawar age 2;10)

When this sentence was being uttered, Mawar was observed having a conversation with her mother and eventually asked what she was doing at the time. From a native speaker's perspective, this is clearly a progressive context of an action, thus it requires an auxiliary *be* rather than *do*. It is unclear why she uses *do* instead of *are* in this sentence. One

possible explanation is that she is unsure of which auxiliary to use. Therefore, her default option is to apply *do* as it represents an action.

(113) *are daddy driving (Mawar age 3;3)

Such utterances as presented above are very rare in Mawar's transcripts. However, it is worth mentioning and discussing as it reveals important information about her language production. From the sentence, we can see that the auxiliary has been incorrectly supplied (*are* instead of *is*). At the time when the recording was taking place, Mawar was actually asking her mother if her father was driving the car, meaning that it should be expressed in a progressive form of a verb. In order to be correct, the supplied auxiliary should *is* as it refers to a third person singular noun *daddy.* Mawar misreplaces the two auxiliaries, making the entire sentence incorrect.

5.3.4.3.2 Melati's Accuracy with Auxiliary *be*

With regards to Melati, the data reveal that her production of the auxiliary *be* is much lower than that of the copula itself. Over the course of 12 months, there were only 111 obligatory contexts of the auxiliary found in the transcripts. Unlike her suppliance of copula, her average correct suppliance of the auxiliary was much lower (71%), whilst her correct suppliance of the copula was nearly 89%. It seems that when *be* is used as an auxiliary, Melati tends to produce more errors.

Similarly to Mawar, many of Melati's errors in this context occur with the omission of the auxiliary itself. Out of the total of 32 utterances containing errors with the auxiliary, 28 (25%) of them appear to be without the auxiliary at all, while the rest (4%) are incorrectly supplied. Most of the omissions occurred in either progressive or passive sentences where an auxiliary *be* is compulsory. Other errors include supplying an incorrect auxiliary that does not agree with the subject, or an auxiliary that does not carry correct tense (i.e., present instead of past tense). Her accuracy rate, however, is high in percentage (74%), meaning that she has decent knowledge of the use of *be* as an auxiliary.

In the following examples, a number of sentences involving the incidences with the auxiliary in progressive context will be presented. Relevant discussion about them will follow.

(114) * they eating (Melati age 9;11)

(115) * they just borrowing without … (Melati age 3;3)

As mentioned earlier, errors of this type are common in the transcripts. In the first example, Melati was actually having a conversation with a native interlocutor while feeding swans and ducks at Riverside Park. All she wanted to say was *they are eating*, but instead she uttered *they eating.* Clearly, it is not an acceptable sentence in English as a progressive sentence requires an auxiliary *be* combined with a verb with *–ing* form. In the second example, Melati was actually having a conversation with the interlocutor at her home. She was telling a story from a movie when the sentence in the example came into the conversation. Similarly to the previous example, the sentence carries progressive meaning, but with the auxiliary *are* omitted.

Although many problems with the auxiliary in progressive sentences are found in Melati's transcripts, it has been observed that she was perfectly fine with many other similar sentences, eventually uttering them with no errors. Sentences like *what are you talking about* (age 9;6) and *he was planning to do that* (age 10;4) are two perfect examples of her correct suppliance of the auxiliary *be.*

In addition to the above sentences, many omissions of the auxiliary also occur in passive sentences context. The following examples highlight this phenomenon.

(116)	* the motive called batik	(Melati	age 9;6)
(117)	* … you not allowed to tell me	(Melati	age 9;11)
(118)	* the boat called sailing boat	(Melati	age 10;4)

All the above sentences represent Melati's errors with the auxiliary in passive voice contexts. In all the above sentences, an auxiliary *be* has been omitted by Melati. In the first sentence, an auxiliary *is* is required in order to fulfill the requirement of a correct passive sentence in English. Similarly, an auxiliary *are* is necessary in the second sentence, otherwise the passive sentence is incomplete. In addition to this, it is perhaps worth presenting another identical sentence but with a more complicated issue. In Sample 8 of Melati's transcript (collected at age 9;11), an utterance *we not allow to tell you…* has been retrieved. Unlike the other one where only the copula is missing, in this sentence, the participial verb is not appropriately inflected (*allow* instead of *allowed*).

In the last one, the sentence is missing an auxiliary *is.* All of these sample sentences show us that Melati is still struggling with the use of the auxiliary *be* in particular for passive sentences. As she grew up with an L1 that does not mark such things, errors like this are not uncommon.

In some other examples, it has also been discovered that a few other types of suppliance errors exist in Melati's data. On some occasions, the auxiliary is incorrectly supplied, as highlighted in the following sentence.

(119) * they was hide (Melati age 9;9)

Not only does this sentence contain an incorrect choice of auxiliary (*was* instead of *were*), it also reveals the fact that the main verb *hide* is not appropriately inflected to fulfill the requirements of either a passive phrase or past progressive. It could be that Melati had two options of either using a simple past tense or past progressive form. Unfortunately, neither one of the structures has been actualized in the sentence. However, the main problem here is her missuppliance with the correct auxiliary, which is also related to what is being discussed in this section.

Sometimes, Melati's errors are as simple as incorrectly supplying an auxiliary that matches the time (tense) being described. In her final transcript (age 10;4), a progressive sentence (*that he's stealing*), obviously containing an incorrect auxiliary, has been retrieved. Since Melati was describing a past event, the auxiliary in this sentence should not be in present tense. Instead of *is* (contracted as *'s* in the sentence), *was* should be supplied so that the expression of the past progressive event is correctly represented in the sentence.

5.3.4.4 Contracted vs. Uncontracted Auxiliary

Uncontracted auxiliaries normally appear earlier in language production, especially with L1 learners (Brown, 1973). Brown suggests that uncontractible auxiliaries (i.e., *Are* they sleeping?) tends to appear earlier than shortened (i.e., he*'s* sleeping) ones. L1 learners have been observed to produce these morphemes around the age of 41-46 months. Data from the two subjects in this study reveal that contracted and uncontracted forms of copula have both been used by the two subjects.

With regards to Mawar, her first obligatory context of the auxiliary *be* is found in sample 2 (age 2;5), which is also the only occurrence in that particular sample. In the transcript of recording data collected one month later, another one is also documented. None of these samples contain correct suppliance of either contractible of uncontractible auxiliary. The first one, however, carries an obligatory context of auxiliary *be* although the auxiliary itself is not supplied at all. Surprisingly, nine out of ten obligatory contexts of auxiliary have been found with correct suppliance in sample 4 (age 2;7). With this 90% of correct

suppliance, we can assume that her knowledge of auxiliary has, to some extent, been established.

In this transcript, it has been found that four of ten auxiliary *be* obligatory contexts contain contractible auxiliaries, all of which are correctly supplied. Having all these in the data, it can then be assumed that Mawar is now proficient in using contractible auxiliary. Unfortunately, it has been relatively difficult to calculate the exact number of contractible and uncontractible auxiliaries, especially when the morpheme is omitted. In omission (non-suppliance) cases, the morpheme could be either one in case they are supplied. Therefore, only when correctly supplied have they been labeled as either contracted or uncontracted.

With regards to Melati, her production of both contracted and uncontracted forms of auxiliaries started to appear in the first sample transcript. Considering her age at the commencement of the study, this is very possible. The number of auxiliary *be* obligatory contexts found in Melati's transcripts surpasses the total number of obligatory contexts for the other five morphemes. It has also been observed that she shares the same amount of balance between the contracted and uncontracted forms of auxiliary *be*.

5.3.4.5 Suppliance of Copula in Non-obligatory Contexts

Copula *be* are found not only in relevant obligatory contexts but also in various non-obligatory contexts. This means that copulas are randomly supplied in sentences where they are not required. In most cases, a copula co-exists with another verb of a sentence such as **she is go to school.* Such utterances are found both in Mawar's and Melati's transcripts across the entire dataset. This section is dedicated to the discussion of this phenomenon. The following sub-sections will present relevant data, separated for Mawar and Melati, in regards to the suppliance of copula in non-obligatory contexts.

5.3.4.5.1 Mawar

At least 28 utterances with copulas being supplied in non-obligatory contexts have been found in Mawar's transcripts. In most cases, as mentioned earlier, they co-occur with another verb or auxiliary verb. These utterances do not appear in all transcripts, yet they are randomly distributed. The first utterance of this kind is discovered in sample 3 (age 2;6). In the following examples, some of them will be presented for further discussion. These examples will represent different combinations of copula used in sentences by Mawar.

Most of Mawar's basic errors with suppliance of copula in non-obligatory contexts occur when the copula co-exists with a verb, as in the following excerpt.

(120) * I was fall down (Mawar age 2;8)

In this particular sentence, the copula *was* is used at the same time when the verb *fall* appears in the sentence. This sentence is extracted from a transcript of conversation with the father, recorded during home interactions. As uncontractible copula is one of the earliest occurring morpheme in child language (Brown, 1973), it is possible that Mawar considered this as the verb although another verb was also supplied in her spontaneous language production. Thus, copula *was* is purely unnecessary since the main verb is supplied, although incorrectly inflected, and this could be seen as her confusion with the realization of surface morphology. In many other cases, the supplied copula also appears in different tenses, as shown in the following example.

(121) * I was fall down (Mawar age 2;8)

This example clearly indicates her problem with the use of the past tense verb. From the transcript, I am aware that the context of the conversation is a past event which Mawar tried to describe to her father. Instead of trying to inflect the verb to a past form, a specific morphological knowledge that had unlikely developed around this particular age, the easiest way for her was by adding a morpheme that could function as a time marking. In this case, her choice was to use the copula *was* although it co-existed with the verb *fall.*

In other occasions, even though it occurs in a non-obligatory context, Mawar also supplies a copula that mismatches the subject. As shown in the following example, the copula *is* does not agree with the subject *they.*

(122) * They is stop (Mawar age 2;9)

Although such an example is a rare occurrence in the transcript, it is important to underline that Mawar missupliance in agreement context can also occur in the context where a morpheme is not required. In addition to this, a double suppliance, where a copula co-occurs with another copula, also exists in the data. The following example highlights this.

(123) * I'm be careful (Mawar age 2;9)

As mentioned above, this example represents Mawar's suppliance of a copula in non-obligatory context. I classify this case as a non-obligatory context because one of the copulas is not supposed to be there. There are two possible options of this sentence, *I am careful* or *I will be careful.* Either one will require an omission of one copula.

In Example 124 below, a conflict of two different auxiliaries comes into play.

(124) * Are you promise? (Mawar age 2;9)

If we look at the sentence, Mawar uses the auxiliary *are* instead of *do.* Obviously, it is used in the wrong place but it should indicate her understanding with the use of auxiliary in certain contexts. The auxiliary *are,* in this instance, is nevertheless supplied in a non-obligatory context. On other occasions, utterances like *this is should be like this* (age 3;3) and *this is can breath* (age 3;3) have also been found. If we look at these examples, all the *be* verbs, whether they function as a copula or auxiliary, always co-occur with another auxiliary, verb, or modal. Many other utterances have also been found in these structures.

5.3.4.5.2 Melati

With regards to Melati, we found no less than 30 utterances containing copulas supplied in non-obligatory contexts. Although some resemble those of Mawar, most of Melati's current errors represent her problem with inflecting verbs in present tense contexts. What this means here is that, in most cases, many present verbs following a 3sg subject do not come with an *–s* while an unnecessary auxiliary or copula is added to the sentence. In the following, several examples of this incident will be provided for further discussion. The other types of suppliance in non-obligatory contexts will be discussed subsequently.

(125) * when it's snow… (Melati age 9;4)
(126) * It's really hurt (Melati age 9;8)
(127) * It's taste like … (Melati age 9;9)
(128) * It's get confusing (Melati age 10;4;4)

These examples clearly show that none of the verbs is properly inflected, while additional morpheme *'s*, which in this case, could function as either a copula or an auxiliary, has been added to the structure. It is worth mentioning that all these utterances occur in present tense context, therefore a proper verb inflection with *–s* is compulsory.

With regards to the first utterance (125), the verb *snow* requires a proper inflection with *–s* suffix in order to make sure it agrees with the subject pronoun *it.* Likewise, the same requirement should also be applied in the other three examples. In all of these examples, appropriate inflection is clearly missing or omitted by Melati. Instead, she chose to supply the copula *be* rather than inflects the present verb. Theoretically, this is in line with several proposals related to L2 morphome acquisition (e.g., Krashen, 1977) which predict that copula is acquired much earlier than third-person singular *–s.*

As mentioned earlier, Melati's suppliance of copulas/auxiliaries in non-obligatory contexts also occurs in a number of other instances. In *it's took an hour* (Sample 126, age 9;4), for instance, it is unclear why a morpheme *–s* is used when the context of verb is past tense. Another utterance, *my grandma dad was kill him,* is also found in the same transcript.

The first one (125) reveals a complicated structure where the verb *took* co-occur with a present form copula *'s (is)* which obviously occurs in a non-obligatory context. Besides as a contractible copula, the *'s* might have also been supplied as a contracted form of the auxiliary *has,* but it is very unlikely without a suppliance of the past participle form of verb *taken.* Another possibility is that the *'s* could function as a contracted auxiliary for a progressive verb *was taking,* but this is likely impossible. The most possible explanation for this is that it was supplied for the purpose of avoiding L2 structures that she is not familiar with, thus the copula was chosen to be inserted.

In the second example, however, the verb *kill* is in infinitive form, whilst the past form copula *was* is supplied in non-obligatory context. Although it was fairly clear to her that the context of conversation is a past event, the verb *kill* was not properly inflected to the past tense form *killed.* Instead, she erroneously supplies the additional morpheme *was,* probably to emphasize that the event had already happened. The two examples show us that Melati is still confused about past tense verb inflection and where to correctly supply a copula.

5.3.5 Summary

The discussions above present an overview of the individual development patterns of the two bilingual children, Mawar and Melati. The data reveal that there are considerable differences between the two research participants. From the first few samples, for instance, the number of utterances containing relevant morphemes being investigated (i.e., *–ed* past tense) are quite different. This has to do with their respective ages at data collection. Mawar, for instance, had not started to produce some morphemes when Melati, on the other hand, had already supplied morphemes with a high percentage of accuracy. A comparison with Brown's (1973) data shows that the two participants in the present study developed through relatively similar stages, as compared to L1 learning children, although there are some differences to be considered as well. Mawar is a bilingual child whose acquisition patterns fall between the range of, or at least close to, L1 children. Melati is a successive L2 learners and her developmental patterns do not show many parallels with L1 learning children.

The most striking parallels between the two subjects occur within the domain of agreement marking and regular past tense verb inflections. Both Mawar and Melati reveal extremely low accuracy rate (7% and 16%, respectively) for 3sg *–s* in the 12 samples we have collected. This means that the majority of 3sg *–s* obligatory contexts were either erroneously supplied with an incorrect morpheme (e.g., not agreeing with the subject) or simply appear with no agreement marking. With respect to the past tense marking, the accuracy rates are considerably higher for both of them, except for regular past tense where their accuracy rates are relatively low. With such a low accuracy rate for regular past tense marking, it is fair to say that both subjects have not properly acquired the obligatory suppliance of the regular past tense (*-ed*) morpheme, unlike that of irregular one. In addition to the two morphemes previously mentioned, Melati is also found with a relatively low (50%) accuracy rate in the suppliance of plural *–s* morpheme. Other than these, both children seem to have relatively higher accuracy rate for other morphemes. These morphemes have been supplied with accuracy rate higher than the 60% cut-off point suggested by Vainikka and Young-Scholten (1994).

In regards to the pattern of suppliance, it has been observed that morphemes have been supplied randomly both in obligatory and non-obligatory contexts. In addition, many have also been used in incorrect contexts (refer to the previous discussion about how correct, incorrect, and no suppliance samples were classified). The following table summarizes this point:

Table 19 Overview of Suppliance data for Mawar and Melati

Properties	Mawar				Melati			
	Total OC	Correct	Ø Suppliance	Incorrect	Total OC	Correct	Ø Suppliance	Incorrect
3sg -s	28	7.1%	78.6%	14.3%	160	16%	70%	14%
Reg. past (*-ed*)	5	0%	100%	0%	112	27%	70%	4%
Irreg. past	21	48%	14%	22%	347	61%	36%	3%
Plural *-s*	84	74%	26%	0%	149	50%	50%	0%
Copula *be*	564	88%	9%	3%	726	89%	6%	6%
Auxiliary *be*	128	81%	15%	4%	111	71%	25%	4%

From this table, we can see comparable performance between the two participants, especially with regards to the number of identified obligatory contexts. Considering that the data were collected from spontaneous recording sessions and that the subjects are two young learners of English, it was very difficult for the researcher to interrupt the participant's spontaneous production. For example, very little suppliance data for the regular past verb (*-ed*) have been collected from Mawar due to the fact that she is still too young to produce

such morphological contruction. All the correct suppliance represent the contexts in which each morpheme is correctly supplied. Ø suppliance is when no morpheme is supplied by the target child, while incorrect suppliance represents participant's production when in which the morpheme is incorrectly supplied. It is obvious from the data that the suppliance rate of agreement *-s* is not really different between the two participants. The only morphemes that are differently acquired are the regular past and the plural.

In addition to this, a different set of data representing suppliance in non-obligatory contexts have also been collected from the two children. These are related to the production of morphemes in such occasions where obligatory contexts for the relevant morphemes do not exist. Incidents of this sort of suppliance have been found in abundance, mainly related to other properties not currently being investigated. For the morphemes relevant to the present study, both subjects produced relatively high number of copulas supplied in non-obligatory contexts. Mawar produced 28 copulas in non-obligatory contexts, while in Melati's transcripts 30 utterances containing the suppliance of copula in non-obligatory contexts have been found. Surprisingly, none of the other 5 morphemes were found or supplied in non-obligatory contexts.

Chapter 6: Discussion

6.1 Introduction

This dissertation has aimed to gather important information about the effect of possible predictive variables in L2 acquisition. In particular, the main focus has been on the possible influence of quantity and quality of exposure (i.e., non-native input) on the two children's language development. In addition, we have also reviewed a large amount of data from participants' production transcripts, which certainly helped us investigate and explain the variable use of inflections by the two research subjects. We have investigated the English language development of two Indonesian children acquiring English as an L2. We looked at participants' exposure data collected through a digital questionnaire (UBiLEC), which have revealed important information about the two children's interactions in English and other languages with different interlocutors. In addition, transcripts of spontaneous audio data collected longitudinally during each child's daily activities also reveal interesting findings in their language production patterns.In this particular chapter covering boths issues of environmental factors and variability in L2 acquisition, the findings presented in the earlier chapters are evaluated and reflected upon, with relevant conclusions presented in different sections.

This particular chapter is organized as follows. In Section 6.2, we will discuss findings of possible factors that influence the two children's language acquisition. We will put a particular focus on parental input and exposure to non-standard L2 in the home environment. This section will answer a question about whether parental L2 is a significant predictor in L2 acquisition. It will also relate our findings to data collected through UBiLEC in order to confirm whether each child's L2 development progress (i.e., MLU) is influenced by environmental variables as found in parental questionnaire data. In Section 6.3, we will revisit variability issues in L2 acquisition, covering in detail relevant proposals in the present contexts. Further in the section, we discuss whether claims proposed by the Missing Surface Inflection Hipothesis (MSIH) can be reflected in our findings. It will also cover a brief discussion about other alternative accounts of variability. In the section that follows, commonalities and differences between the data from the present study and those collected from previous studies will be presented with the purpose of answering the research questions.

6.2 Roles of L1 and Non-native Input (Internal and External Factors)

This section will briefly review the two participant's language development with the basis of data from their language exposure (UBiLEC) and MLUs (details of which have been presented in the previous chapter). This will hopefully give us an overview of how their language developed and what factors contributed to their current level of proficiency. We will then try to theoretically relate the findings with relevant theories in order to show whether their errors in L2 production are due to the absence of certain morphological properties in L1. Hopefully this will be able to suggest whether, in this context, there is an L1 influence on L2 acquisition. In particular, this discussion is expected to answer the first research question inquiring about *the roles of non-native input to L2 learners' linguistic development.* To move forward to our discussion about the roles of non-native input, we will first of all discuss L1 influence as an internal factor on L2 acquisition. We will then continue our discussion to the roles of non-native input as an external factor in L2 acquisition.

6.2.1 L1 Influence in L2 Acquisition

L1 influence is, for some, somewhat an outdated issue to discuss within a study involving L1 and L2. However, I personally found it beneficial to incorporate such a discussion into the presentation of the results of the present study. L1 influence is far from straightforward and depends on many of other factors. One essential reason to consider is that studies involving L1 (child) Indonesians as the acquirers of L2 English have been very scarce in the field of SLA as the vast majority of currently published studies involve mostly European languages. For this reason, in the current investigation, I expect to bring novelty in the form of a new set of languages into the already existing field of research.

It has been extensively discussed in Chapter Two that evidence for the influence of a non-standard L2 on child's language development is available from various data sets. In this particular section, we will relate the findings presented in Chapter 4 to some available literature and see whether the present data would necessarily support or reject previous findings. As previously discussed in Chapter Three, Indonesian and English language differ significantly in the way the grammar of each language is represented. For this particular reason, the occurrence of negative transfer is inevitable in the interlanguage process of the two subjects.

One of the most frequently practiced types of data analysis in SLA studies is called Contrastive Analysis, which is mainly used to identify similarities and differences between

two languages (Larsen-Freeman and Long, 2014). This would then prompt the birth of the Contrastive Analysis Hypothesis (CAH), proposing two types of transfer previously mentioned; positive and negative transfer. These two types of transfer are manifested through predictions about whether L1 would cause difficulty (such as errors in production) or whether it would facilitate the acquisition process. It is also worth mentioning that, in generative terms, CAH was later developed into a hypothesis called the Feature Reassembly Hypothesis (Lardiere, 2009), as already introduced in Chapter 2.4.

In order to prove whether the CAH predictions are applicable to the participants of the present study, we will now review whether the learner's L1 (Indonesian) affects the acquisition of L2 (English). In particular, we will be looking at how *marked* and *unmarked* features in L1 are transferred to L2 when the two languages differ in the way they apply this notion of 'markedness'. According to Battistella (1996), the term *marked* is used to refer to any non-basic forms which usually come with inflections and derivations. The rest of the forms such as singular and default forms are mainly referred to as unmarked.

It has been predicted that the low functional morphology and high variability of L1 (Indonesian) grammar will have an effect on the realization of L2 (English) morphology among the two children. The present study attempts to find out whether the subjects show greater inconsistency in their suppliance of the relevant English properties. In addition, it will also try to provide an answer to the question of whether the morphemes are equally vulnerable to L1 influence.

For the purpose of explaining how similarities and differences between morphological inflections in English and Bahasa Indonesia are reflected in L2 production by Mawar and Melati, it is necessary to expose an important point suggested by Foley and Flynn (2013) emphasizing that L1 influence usually occurs at an abstract level rather than at surface morphological form. This is particularly important due to the type and nature of data already collected and available in the present study. Let us now review the following data containing different errors made by Mawar and Melati.

Table 20: Errors Made by Mawar

PROPERTY	TYPES OF ERRORS		% CORRECT	% ERRORS
	OMISSION	MIS-FORMATION		
3 sg -s	79%	14%	7%	93%
Reg. Verb	100%	0%	0%	100%
Irreg. Verb	14%	38%	48%	52%
Plural -s	26%	0%	74%	26%
Copula be	9%	3%	88%	12%
Auxiliary be	15%	4%	81%	19%

Table 21: Errors Made by Melati

PROPERTY	TYPES OF ERRORS		% CORRECT	% ERRORS
	OMISSION	MIS-FORMATION		
3 sg -s	70%	15%	15%	85%
Reg. Verb	70%	3%	27%	73%
Irreg. Verb	36%	3%	61%	39%
Plural -s	50%	0%	50%	50%
Copula be	6%	6%	88%	12%
Auxiliary be	25%	4%	71%	29%

Table 20 and 21 above show overall suppliance data from Mawar and Melati, respectively, collected over the course of one year. The rate of errors (omission and misformation) and correct suppliance are presented against the total number of obligatory contexts found in all the transcripts. One interesting observation from the data is that none of these properties can be transferred from Indonesian but the children are not equally inaccurate with them.

First of all, we observe that there is clearly low provision of agreement by both children. From the data, Melati appears to have a better rate of correct suppliance with regard to morphemes, indicating that this property develops. Secondly, there is clearly a lexical difference between regular and irregular verbs. The two children show consistent acquisition of this particular morpheme, shown by Melati's better accuracy. This would not have been observed if the older child exhibited a similar or lower accuracy rate. We also learn from the table that the copula and auxiliary *be* are acquired by both participants. The results are somewhat unexpected, but they are better marked than agreement. Finally, Mawar appears to be more accurate than Melati with regard to the suppliance of plural *–s*. Since the two are the same morpheme phonetically, one possible explanation to this is that Mawar has been receiving consistent input for this particular morpheme since birth, while Melati was exposed to this grammatical morpheme at a later age. If we relate this to the fact that their L1 does not overtly mark plurality, there is a greater chance for Melati to produce many more errors with plural *–s,* as she had more exposure to L1 Indonesian than Mawar. Therefore, the data suggest that L1 transfer might be one possible (not the only) explanation.

One might be wondering to what extent these errors are relevant to the present study, and how these errors bring us to understanding the L1 influence on L2 acquisition. In order to narrow down the discussion about this issue, we will need to expand the investigation further into how the absence of surface realization of particular morphemes in the L1 affects the production of similar properties in the L2, and whether the morphemes are equally

vulnerable to L1 influence. Following this, I further hypothesize that the low functional morphology and high variability of the L1 (Indonesian) grammar will have an effect on the realization of L2 (English) morphology among the two children.

Attempting to explain whether learners' first languages influence their L2 production is a challenging task. I have personally found it very hard to judge whether the patterns of L2 production collected from Mawar and Melati have any correlation to their Indonesian grammatical system, which to a certain extent is distinct from that of English. For the purpose of answering this question, I reviewed all the errors they both produced when supplying relevant morphemes and attempted to relate these errors to the way these morphemes are realized (if any) in their L1 grammar rule. As suggested by Ellis (1994), learners' problems in producing L2 utterances should be distinguished within two main classifications; namely *competence (errors)* and *performance (mistakes)*. In this particular discussion, the focus on 'errors' as the notion of 'mistakes' is not fully relevant to the present study.

One type of error that has frequently been discussed is called *interference*, which involves the use of elements from L1 when speaking an L2. Transfer errors occur on different occasions, but one possibility that represents surface morphological errors takes place when learners (possibly) transfer the structure of L1 features into the target language production. In this respect, the two Indonesian child learners of L2 English involved in the present study have been observed to produce a high number of morpheme omissions in their L2 production. This has been recorded with all morphemes currently being investigated in the study (e.g., agreement *–s,* regular (*-ed*) and irregular past tense, plural *–s,* copula *be* and auxiliary *be*), which happen to be morphological items that are not overtly marked or realized in Indonesian.

If we refer to Tables 20 and 21 above, agreement morpheme *–s* and regular past tense *–ed* seem to be two morphemes that were most frequently omitted by the two subjects. Even though Mawar might have not fully acquired these morphemes at the beginning of the study, data from the older child Melati still reveal noticeable omissions of this morpheme. With respect to the other four morphemes, although their omission rates are lower than the other two previously discussed, the data evidently show that these morphemes are omitted frequently, but not as frequently as the tense morphemes .

Obviously, these omission data do not seem to indicate that the child is not in possession of syntactic and morphological knowledge required for the production of these morphological properties. One reason and evidence for this can be seen from data showing their correct suppliance of the morphemes. Our data indicate that most of these morphemes are correctly inflected whenever they are supplied and in relevant morphological contexts. For

this particular reason, it is confirmed that they have appropriate knowledge about how and when to accurately supply the morpheme, as the correct suppliance is based on correct mental representation. Although some misformations are also found, morphemes are largely correct when supplied. In other words, the two subjects are capable of avoiding supplying the morphemes in an inappropriate context within utterances. As a consequence, errors like *they studies at high school, I walked today,* and *this is my books* are hardly available in the data.

In order to prove whether these characteristics of errors are pertinent to their first language, I try to produce some data about their language exposure (collected from the UBiLEC) and relate them with the production data (the Suppliance in Obligatory Contexts). Table 22 below summarizes the data that have been collated into three different stages of data samples for easier and direct comparisons.

Table 22: Amount of Exposure (in %) to Target Language (TL) and Other Languages (OL1 and OL2)

	Stage 1 (months 1-4)						Stage 2 (months 5-8)						Stage 3 (months 9-					
	Mawar			Melati			Mawar			Melati			Mawar			Melati		
	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2
Average % exposure to TL/OL1/OL2 per week (home only):	50	45	5	35	35	30	50	45	5	35	35	30	64	30	6	35	35	30
Average % exposure to TL/OL1/OL2 per week (home/school):	55	37	8	60	33	7	55	37	8	60	33	7	65	35	0	60	33	7
Average % exposure to TL/OL1/OL2 per week (home/school/extra):	51	42	7	65	29	6	54	41	5	65	29	6	75	25	0	65	29	6

Table 22 indicates that during the particular 12-month course of data collection, the two research subjects were exposed to at least three different languages simultaneously. Both were exposed to target language (TL) English, another language 1 (OL1) Indonesian, and another ethnic language (OL2) spoken at home (Acehnese for Mawar and Javanese for Melati). As mentioned previously in the relevant chapter, and confirmed in Table 22 above, both of the subjects regularly actively use English and the majority first language (Indonesian), especially in their conversations with parents and siblings at home. Exposure to English (TL) is the highest in percentage, followed by exposure to Indonesian, and the third language at the lowest rate. In general, the amount of exposure to the target language, English, for Mawar seems to increase over time, while the percentage for Melati remains the same through the course of data collection. This is because Mawar's hours at the nursery, as well as doing other English-based activities, gradually increased. Melati had already been in

full-time schooling when the data collection commenced, thus there are very few changes in her exposure hours.

Additionally, data from Tables 20, 21, and 22 above indicate that the two research subjects seem to reduce the number of errors they produced in their L2 when they were exposed more to the target language. Thus, it seems to me that transfer from L1 still, to a certain extent, influences the production of utterances in the target language. In the meantime, the child still utilizes some L1 features (e.g., null inflection for plural) in their L2 production. Their attempts to use relevant rules of grammatical inflections in L2 are obviously visible when those morphemes are accurately supplied. However, they seem to omit the morphemes more frequently than they supply them with incorrect forms. This indicates at least two possibilities: (1) they simply do not know what to insert, or (2) they are unsure of which option to insert, thus they choose the default form.

Based on these findings, we can conclude that the absence of surface realization of particular morphemes in L1 does affect the production of relevant inflections in the target language. It is also important to highlight that some features in the learners' L1 Indonesian are generally similar to that of the L2 (e.g., S-V-O word order), and these have largely facilitated their language acquisition. The vast number of differences between L1 and L2 (e.g., how surface morphology is realized), however, have structurally interfered with their L2 production, resulting in variability in the way some forms are expressed. As a result, we have found a large number of errors in the learners' transcripts.

It is also important to mention that the amount and quality of input they receive does play a specific role in shaping the forms of structures they produce in L2. In relation to this, I need to highlight that both Mawar and Melati were exposed to L2 English at least under two basic circumstances; (1) exposure to authentic English at school or nursery, and (2) exposure to non-native English at home. For this reason, the amount and quality of input they receive in English fluctuates and is under different conditions at different times. Detailed information about their amount, length, and quality of language exposure is provided in Appendix B.

In order to further provide additional support to the claim that L1 transfer actually exists in the two learners' production data, I will now try to relate our findings to the study of Luk and Shirai (2009) which investigated the acquisition of three English morphemes (plural *–s,* articles, and possessive *'s*) using data from L1 speakers of Japanese, Korean, Chinese, and Spanish. They found that L2 learners of Asian L1 experience strong L1 transfer during the process of their L2 English acquisition (morphemes acquired earlier or later),

while those with Spanish L1 conform to the natural order proposed by Krashen (1977) previously provided in Chapter 2. Therefore, they concluded that depending on how each morpheme is realized in L1, the relevant production or acquisition associated with those morphemes can be different.

For this particular discussion, it is pertinent to mention four favorable conditions required so that L2 learners can experience positive transfer and be able to acquire certain morphemes relatively easily. According to Luk and Shirai (2009), the conditions include (a) how frequent it is used in the target language, (b) whether the morphemes are free or bound, (c) whether they are congruent, and (d) whether they are phonetically alike. Thus, in the case of the acquisition of agreement *–s* between L1 Indonesian and L2 English, for instance, negative transfer should be expected as the morpheme is only frequent in the L2 and is neither congruent in use nor phonetically similar in both languages. For a clearer overview, the following table illustrates some of the relevant data presented in Luk and Shirai's article, partially adapted from Andersen (1983).

Table 23: Characteristics of morphemes that promote transfer from Spanish and Japanese, adapted from Andersen (1983).

Spanish >> English					
Form	**+/- Transfer**	**Frequent in English?**	**Free/bound (L1+L2)**	**Congruent? (L1 + L2)**	**Phonetic Similarity? (L1 + L2)**
Article	+	Yes	Free	Yes	No
Copula	+	Yes	Free	Yes	"Is", yes
Auxiliary	+	Yes	Free	Yes	No
Plural	+	Yes	Bound	Yes	Yes
*In**	+	Yes	Free	Yes	Yes
On*	-	Much less than *in*	Free	No	No
Possesive	-	No	's bound transferred N of/de N free	's no N of/de N yes	No (but *de* like *the)*
Go to for aux + *going to*	-	?	Transferred from free	Qualified "yes"	No
Japanese >> English					
Form	**Transfer**	**Equivalent in Japanese**			
Article	-	No articles			
Copula		Several different copulas			
Auxiliary					
Plural	-	No plural			
*In**					
On*					
Possessive	+?	Similar to English			
Go to for aux + *going to*					

From Table 23, it is obvious that both positive and negative transfer are fully dependent on the similarities and differences between L1 and L2. In this case, the positive transfer occurs more between Spanish and English as more favorable conditions are met, while in the case of Japanese and English, negative transfer occurs on some occasions as the relevant morphemes do not exist in L1. Adapting information from Table 26, I attempt to re-create a similar table to describe the data from Mawar and Melati, as shown in the following:

Table 24: Characteristics of morphemes that promote transfer from Indonesian to English

Form	Conditions				Equivalent in L1
	+/- Transfer	Frequent in L1/L2?	Congruent? (L1/L2)	Phonetic Similarity? (L1/L2)	
Agreement *-s*	-	No/Yes	No	No	Ø
Reg. verb	-	No/Yes	No	No	Ø
Irreg. verb	-	No/Yes	No	No	Ø
Plural *-s*	-	No/Yes	No	No	Ø
Copula *be*	-	No/Yes	No	No	Ø
Auxiliary *be*	-	No/Yes	No	No	Ø

Considering the data illustrated above, we clearly expect to see constant occurrence of negative transfers in the data from Mawar and Melati. As predicted by Andersen, negative transfer likely will take place when most of the conditions are not met. With respect to L1 Indonesian and L2 English, there are sufficient differences between the two languages that can initiate negative transfer, particularly the absence of the aforementioned morphemes in L1.

If we relate this with universal acquisition order or grammatical morphemes (refer to previous discussion of Brown (1973), Dulay and Burt (1973, 1974), Bailey, Maiden, and Krashen (1974), and Pica (1983)), and the acquisition order postulated by Krashen's (1977) findings discussed in this section, the consensus strongly points to the prediction of L1 interference or negative transfer. To support this, data from Mawar and Melati must show that they acquire the morphemes relatively late, due to L1 – L2 differences.

In Tables 23 and 24**,** we observe accuracy rates achieved by the two participants for all the morphemes currently being investigated. If we follow the 60% benchmark for minimum acquisition proposed by Vainikka and Young-Scholten (1994), it is clear that the two subjects have not yet acquired two morphemes (agreement -s and regular past tense -ed). According to Krashen's (1977) natural order, these morphemes are predicted to be acquired within the last stage, thus there is no strong evidence to suggest that the low suppliance of

these morphemes is due to L1 influence. L2 utterance production patterns (high omission of Agr *–s* and *–ed*), however, reveal a large number of similarities equivalent to the L1 structure in which the relevant morphemes are absent or not overtly marked (refer to relevant examples in Chapter 4).

One striking fact comes from Melati with regard to her suppliance of plural *–s.* Our data indicate that she irregularly supplied 50% of the obligatory contexts, which suggests that acquisition is still taking place. This means that this morpheme is acquired relatively late, and after the other morphemes such as copula, auxiliary, and irregular past, which according to the natural order are supposed to be acquired later. For this reason, I strongly believe that the late acquisition of plural *–s* is due to L1 interference as Indonesian has a completely different way of marking plural nouns, as discussed in the earlier chapter.

In contrast, Mawar has successfully acquired plural *–s* at a very early age. One possible reason for this is that she is exposed to L2 English at a very young age. In addition, as her exposure to L2 increased, her contact with L1 decreased gradually throughout the course of data collection. Unlike Mawar, Melati's exposure to L2 and contact with L1 have been recorded to remain the same over this particular period of time. Thus, L1 influence plays an important role in the subjects' production data.

With regards to the other four morphemes (irregular past, plural *–s,* copula *be,* auxiliary *be*), the order of acquisition appears to consistently follow the natural order, with irregular past being (supposedly) the most difficult one among the four. As predicted by Krashen, the copula *be* appears to be acquired early. Mawar and Melati's accuracy rate for this morpheme is comparatively high. As L1 Indonesian does not recognize any morpheme equivalent to the copula *be,* or any other word with a similar function to it, we surely cannot expect to see any particular influence of such a property in L2. However, traces of L1 influence can still be found in all the four morphemes as their accuracy rates are still far from being near-native. Morpheme order studies involving L1 children (e.g., Brown, 1973) have provided evidence that L1 children produce better accuracy rates than those of Mawar and Melati.

Although the strong influence of L1 can only be seen in a few of the morphemes currently being investigated, we can still argue that the low accuracy scores are due to L1 interference for the reasons we discussed earlier. Meta-analysis reported by Luk and Shirai (2009) confirms the influence of previous knowledge of the native language(s) to the acquisition of L2. It is also important to mention that Luk and Shirai themselves reject the existence of a natural order of acquisition, but they accept the universal aspects of it. With

particular attention given to the input and exposure, I also need to highlight that these factors play, to a certain extent, a role in promoting specific forms in Mawar's and Melati's L2 production. In conclusion, it has been confirmed that the low functional morphology and high variability of L1 (Indonesian) grammar affect the realization of L2 (English) morphology.

6.2.2 Roles of Non-native Input

We now turn our attention to a discussion about possible roles played by non-standard input in Mawar and Melati's linguistic development. It is also important to mention here that our discussion will be restricted only to the available data variables in the study, namely quantity and quality of exposure, which were collected through UBiLEC (see Chapter 4 for details). Monthly quantitative data relevant to these will be compared to that of language development recorded in the subjects' MLUs. Direct comparisons between the two variables of data will be able to tell us whether an increase or decrease in the amount and quality of exposure will affect language development. I need to also emphasize that, based on the available data, we only looked at the acquisition of morpho-syntax, not vocabulary. For this purpose, we will relate the main findings to relevant theories previously discussed in Chapter two. The section will then be followed by a subsequent section specifically dedicated to answering the first research question.

Previously, in Chapter 2, we reviewed a number of different studies suggesting possible roles played by standard and non-standard input in language acquisition. The primary findings found in these studies point to different variables that may have effects in linguistic development. To move forward with our discussion, I would like to highlight three factors that may be the most relevant to our discussion, namely insufficient input, incomplete acquisition, and parent's socio-economic status and level of education. These are the most common factors that can be directly associated with our discussion about non-native input in language acquisition.

First of all, it has been argued that children exposed to a second language outside the home receive less input than monolinguals who are exposed to only one language both at home and outside (Chondrogianni and Marinis, 2011). If we relate this argument to the context of the present study, we know that the two research subjects are exposed to both authentic L2 English (at school and nursery) and at home (with parents, siblings, and occasional visitors). Based on UBiLEC, both children communicate fully in English at school and nursery, but use it less than 50% of the time at home. Since we did not conduct a

formal assessment to rate their current performance in English, we can relate their language exposure data in the UBiLEC with the development of MLU calculated from the transcripts of their monthly linguistic production (details available in Chapter 4).

If we look at their MLU data, it is obvious that their ability to produce longer utterances seems to gradually develop over time. The only difference between the two children is that Mawar, whose initial exposure to English was much earlier, seems to have consistent MLU development. Melati's development, on the other hand, appears to be slower across the year. One common similarity to highlight here is that their MLU growth seemed to decrase when they both left for Indonesia on a family holiday, during which they received minimal exposure to English. In such conditions, their dominant language will switch from English to Indonesian; thus English becomes a minority language.

As suggested by Gathercole and Thomas (2009), the input level in linguistic development appears to be related to input levels both for the majority and minority languages. With regards to Mawar and Melati, their input level was constantly lower during their family retreat to their home country, which could be a good explanation why their MLU levels dropped during this particular period of data collection. As mentioned earlier, their only sources of exposure to English during this time ware their parents and siblings, but such input seems to be insufficient to maintain their current proficiency level in the L2. As clearly highlighted in Chapter 4, the two children maintain both English interactions with parents (at home) and also full communication in English outside of the home. With these exposure characteristics, we expect to see steady improvements in their linguistic proficiency, which is obviously visible in their MLU data. Since their MLU counts dropped during their holiday trip, it suggests that the reduced amount and quality of authentic input is the only factor that can explain this.

In addition to this, data about morpheme suppliance collected from both subjects seem to provide evidence consistent with the above findings. In the data, Mawar and Melati are found to produce repeated errors both in the form of omission and incorrect suppliance of morphemes. In order to suggest that exposure to non-native input will affect linguistic development, the current data must be able to show that the child exposed to English of parents with lower proficiency will have lower quality English than data from the other child. UBiLEC data reveal that parents of both children honestly self-rated their English proficiency, and according to my own observation as the interviewer, the score reflects their current performance in English (refer to Table 12 in Chapter 5 for details).

There is nothing in the data suggesting that either Mawar or Melati is better than the other. In fact, both of them produced all types of errors throughout the year, which signifies that their parents' non-standard English does not interfere with L2 production by the two research subjects. Furthermore, different references in the literature suggest that the acquisition of morphology may not be vulnerable to input factors. Chondrogianni and Marinis (2011), for instance, indicate that the acquisition of morphology seems to be less susceptible to input factors when compared with other aspects such as vocabulary and complex syntax.

Our findings indicate that the two subjects consistently produce language errors that mirror the forms of inflections in their L1. As discussed earlier in Chapter 2, Indonesian and English differ in the way inflections are realized (e.g., Indonesian does not mark plurality). We found a high number of occasions where required inflections were not supplied, showing exactly how these forms are used in the first language. In addition, it has also been observed that the older child, Melati, produced the same errors repeatedly, although on other occasions she could supply the inflections correctly. It turns out that she seamlessly knows how to use the required inflections, whilst making recurring errors that could be traced as a form of L1 influence.

With regards to the suppletive and affixal elements, it seems to us that affixal elements (i.e., 3sg *–s,* past *–ed,* and plural *–s*) are more problematic for both subjects. Although irregular inflections that occur in suppletive elements like irregular verbs are known to be difficult aspects for many L2 learners, Mawar and Melati appear to struggle more with adding morphemes to the root words. Thus, it is clear that when such a property is not overtly realized in L1, learners have a tendency to omit the production of such forms in the L2.

Studies suggest that the absence of surface realization of particular morphemes in L1 will, to some extent, affect the production of relevant inflections in the target language. This is particularly true when we compare different theories to the findings established through the present study. However, it is also important to highlight that some features in learners' L1 (Indonesian) are generally similar to those of L2 (e.g., S-V-O), and these have largely facilitated their language acquisition. The vast number of differences between L1 and L2 (e.g., how surface morphology is realized), however, have structurally interfered with their L2 production, resulting in variability in the way some forms are expressed. As we have found a large number of errors from learners' transcripts that emulate how the relevant morphological forms are expressed in their first language, we suggest that, at this particular

point of interlanguage, the two subjects are still transferring some forms of grammatical rules from their first language. As theories suggest, since their second language acquisition occurs within the critical period, the two subjects will soon reach the stage where their L2 competence is near native-like. This is particularly true for the younger child as she has been simultaneously acquiring the two languages from a very young age (before the age of three). Finally, as has been discussed in the previous section, our data have been unable to provide any evidence suggesting effects of non-native input in child L2 production.

6.3 Variability in L2 Production

The discussion of this section is specifically designed to answer the research questions, which focus on the issue of L2 variability and how it reflects the MSIH. The two research questions ask how the absence of morphological markings in L1 affect their productions in L2, each of which particularly emphasizes on specific focus.

Data which are relevant to finiteness reveal that there is overuse of uninflected forms in finite contexts. By adapting similar method used by Poeppel and Wexler (1993) and Prévost and White (2000), every single sentence uttered by each participant was analysed to prove whether inflections have been used correctly or not. The following table summarizes relevant information in this regard.

Table 25: Mawar's and Melati's Mean Accuracy Score for Each Morpheme.

AVERAGE ACCURACY RATE FOR BOTH PARTICIPANTS						
	3sg *-s*	Reg. Past	Irreg. Past	Plural *-s*	Cop. *Be*	Cop *Aux*
Mawar	16%	50%	68%	72%	85%	66%
Melati	22%	23%	62%	50%	93%	74%

The figures in the table represent accuracy rates for each morpheme calculated using the suppliance in obligatory context formula previously discussed in Chapter 4. Each figure is a yearly average, obtained by dividing the total monthly score by the number of samples in which obligatory contexts of each morpheme have been found. In a few samples of transcripts, we have found that the child did not produce any obligatory contexts for specific morphemes. Therefore, this sample has been excluded as a denominator to avoid getting a lower accuracy rate. For example, in Melati's case, suppliance of 3sg *–s* morphemes have been found in all samples except in Sample 5. To obtain the mean accuracy score, we summed up accuracy scores from all samples and divided the total score by 11 (total samples with 3sg *–s* obligatory contexts). From this action, we found that 23% is the mean accuracy rate. However, if we

divided the total accuracy score by 12 (total samples), the obtained mean would have been 21%.

Data from Table 25 above show us that, for both Mawar and Melati, 3sg *–s* and regular past verbs are the most problematic ones. If we refer to Vainikka & Young-Scholten's (1994) 60% cut-off point as a criterion for successful acquisition, we can immediately conclude that the two children have not acquired the knowledge of agreement marking (*–s*) and regular past tense (*–d* or *–ed*). In addition, unlike Mawar, Melati has also not fully acquired the plural *–s* morpheme. The data show us that the older child, who began to learn English years after L1 knowledge had settled, seems to struggle more with the plural *–s* than the younger one, who acquired L2 English simultaneously with L1 Indonesian.

6.3.1.1 Relevant Findings for Verb Inflections and Finiteness

Referring back to the presentation of data in Chapter 5, the calculation of accuracy rates takes into account information about the number of morphemes that were correctly or incorrectly supplied in obligatory contexts for the respective properties being investigated, as well as any misformation among them. The percentages in this table represent this information, which means that the remaining percentage from each figure represents non-suppliance of each particular morpheme in their respective obligatory contexts.

I have collated all the information into the following table for a closer overview of the two participants' incorrect and no-suppliance data of the morphemes.

Table 26: Comparison Between No-suppliance vs. Incorrect/misformation

Accuracy of Verb Inflections (Melati)										
Subjects	S-V Agr.		Reg. Past		Irreg. Past		Cop. *Be*		Aux *be*	
	No-suppliance	Incorrect / misform.	No-suppliance	Incorrect / misform.	No-suppliance	Incorrect / misform.	No-suppliance	Incorrect / misform.	No-suppliance	Incorrect / misform.
Mawar	79%	14%	100%	0%	14%	38%	9%	3%	14.80%	3.90%
Melati	70%	14.40%	70%	4%	36%	3%	5.60%	5.60%	25%	4%

From the table, it can be seen that the amount of 'no-suppliance', or omission, for almost all the morphemes is relatively high, particularly when compared to the data of those that are incorrectly supplied. What these data tell us is that the two participants tended to switch to the default form (no inflection) whenever a particular inflection was required.

In their study about L2 French and German acquisition of tense/agreement morphology and relevant syntactic properties, Prevost and White (2000) found consistency similar to the studies mentioned previously. Their L2 learners' data also highlighted high rates of omission of finite inflectional morphology (further discussion about this will be

presented in the subsequent section). To sum up, our findings to this point suggest that learners' problems are principally failure to accurately supply the required morpheme. We have also found that whenever inflections take place, target morphemes are mostly supplied accurately.

With regard to the missing inflection claims, the use of finiteness in its obligatory contexts have also been analyzed. Table 27 below indicates the use of finite verbs in non-finite contexts and vice versa:

Table 27: Finite and Non-finite Verbs Produced by Mawar and Melati

	Obligatory Finite Contexts			**Obligatory non-finite contexts**		
	+finite	**-finite**	**%**	**-finite**	**+finite**	**%**
Mawar	683	63	63 / 746 (8.4%)	442	5	5 / 447 (1.11%)
Melati	1006	450	450 / 1456 (30%)	588	14	14 / 602 (2.3%)

To be consistent with MSIH predictions, findings should show overuse of non-finite verbs in finite contexts, but not vice versa. Table 27 above suggests exactly the same case. Overall, both participants tend to overuse non-finite verbs in place of finite forms (more obviously in Melati's data). In contrast, they tend to avoid using finite forms in non-finite contexts, confirmed by low percentage figures in the right-most column.

In the study of four L2 learners of French and German, Prevost and White (2000) found that all learners were highly accurate when using finiteness morphology. Although French and German are extremely rich in morphology, as opposed to English, the findings of this study can be used as a point of reference for our further discussion about this point. Similar to what has been found from Mawar and Melati, data from Prevost and White's participants also suggest that non-finite verbs were often used in finite contexts, but finite verbs were almost never used in non-finite positions.

6.3.1.2 Relevant Findings for Syntax and Morphology Interface

In an attempt to find out about the interface between morphology and syntax, I specifically refer to two opposing views on whether morphology is present or absent from learner's language. White (2003), for instance, suggests that before achieving 90% accuracy

in L2 production, learners would *inconsistently* produce various morphemes but they are not considered as being absent. An opposing view proposes that the acquisition of underlying knowledge cannot merely be represented in learners' practical use of that particular knowledge (*i.e.,* Meisel, Clahsen, and Pienemann (1981).

I further refer to two contradicting perspectives about the morphology-syntax interface in interlanguage grammars. As previously presented in the discussion of the literature, some linguists have proposed that there is a form of grammatical impairment or deficit in interlanguage grammar. The opponents of this view claim that such an impairment does not exist. Instead, learners are known to face difficulties in accessing the relevant morphology and, as a result, struggle with surface morphological realization. This account is commonly known as the Missing Surface Inflection Hypothesis (MSIH), the positions of which are challenged in the present study.

The results of the present study suggest that participants' morphological production is consistent with the predictions suggested in the MSIH. Our primary findings reveal that learners consistently omit verbal morphology, but these morphemes are largely accurate when supplied in the relevant contexts. In addition, we have also found a very small amount of incorrect (misformation) suppliance, showing that there is a developmental process taking place in the interlanguage stage. These findings indicate the absence of surface manifestation of inflection, formerly known as *missing inflection* (Haznedar and Schwartz, 1997), later amended to the term *missing surface inflection* (Prevost and White, 2000). Adopting this view, we can emphasize that abstract morphosyntactic features of the two participants are not lacking, as also formerly proposed by White (2003). The missing inflection account suggests that the problem with overt morphology is not permanent, thus we expect to see their inflection accuracy improve as their learning and exposure to the target language progresses. My personal observation has provided evidence for this, indicating that, after approximately one year since data collection was completed, the two children's language quality has increased significantly.

The findings discussed above advance our further discussion about the *morphology before syntax* and *syntax before morphology* views. It has been initially hypothesized that the acquisition of syntax knowledge preceded morphology. In other words, morphology does not drive the acquisition of syntax. Findings from the present study indicate that both subjects consistently use nominative subjects and place lexical verbs in the VP, consistent with findings from other studies advocating *syntax-before-morphology* view (e.g., Haznedar, 2001). None of the utterances in all the transcript samples have been found with null or

accusative subjects. In addition, verb placement is almost always accurate when supplied (e.g., they always remain in the VP). It has also been observed that suppliance of some properties (e.g., the copula) has been relatively high throughout the data collection period. For these particular reasons, we find no evidence that the abstract quality of Tense is underspecified, suggesting that surface morphology is not the precursor of interlanguage syntax. Thus, it has been concluded that learners' syntax is acquired much earlier than their morphology.

With regards to the *morphology before syntax* or *syntax before morphology* arguments, it is necessary to find evidence for whether the syntax drives the acquisition of morphology or vice versa. In the first definition, the acquisition of overt morphology is assumed to be the 'prerequisite' to the acquisition of abstract morpho-syntax, commonly known as *morphology before syntax,* as White (2003) labels it. This is particularly true according to at least two different accounts, namely the *Weak Continuity Hypothesis* and the *Rich Agreement Hypothesis*. As summarized by Slabakova (2016), proponents of the morphology before syntax view (i.e., Vainikka and Young-Scholten (1996) and Hawkins (2001)) propose that acquisition of morphological reflexes drives the acquisition of syntax. The findings of the present study revealed that such a claim cannot be confirmed with the data collected from the two learners being involved in the study. Our findings show that the two learners continue to produce inflectional errors while their understanding of abstract syntactic representation productively develops, as proposed in the *syntax before morphology* view that will be discussed subsequently.

According to *the syntax before morphology* view, the abstract and surface forms are two distinct features which grow separately (White, 2003). The Separation Hypothesis is one account that advocates this view. In particular, the view suggests that overt morphological understanding will begin to occur as the abstract underlying knowledge has already been included in the grammar. For instance, learners will only begin to start using 3sg *–s* morphemes overtly if the abstract categories of tense and agreement have been introduced in the grammar of the language being acquired. In a simple statement, syntactic knowledge is superficially unrelated to morphology, evidence of which can be seen in Table 28 below, as presented in Slabakova (2016).

Table 28: L2 English Suppliance of Functional Morphology in Obligatory Contexts

	3 sg. Agreement	Past tense on lexical verbs	Suppletive forms of *be*	Overt subjects	Nom. Case	V in VP
Lardiere (1998)	4.5	34.5	90	98	100	100
Li (2012)	16	25.5	93	100	100	-

The table provides data from two different studies investigating L2 acquisition. Lardiere's subject is an adult learner of L2 English, while Li's participants come from a group of L1 Mandarin children acquiring English as a second language. What the data tell us is that there is a clear dissociation between the incidence of verbal inflection and various syntactic phenomena. It is obvious from the data that both the adult learner Patty and L2 children in the other study still struggle with the production of the two morphemes for agreement and past tense. However, they appear to be very good at processing syntactic knowledge as shown in their high suppliance rate for relevant properties. This is a good indication that the learners have already had excellent knowledge of syntactic processes, but are still in the process of acquiring the morphology side.

In the case of Haznedar's (2001) subject, for instance, it has been observed that Erdem produces lexical verbs with the frequent omission of *–ed* and 3sg *–s* inflections. However, he appears to produce the subjects most of the time, with subject pronouns consistently nominative (*I* instead of *me)*. Contrasting this finding with the *optional infinitive* phenomenon of L1 acquirers of English, especially with regard to their tendency to omit overt subjects and use accusative pronouns with non-finite verbs, Haznedar and Schwartz (1997) suggest that Erdem has unconscious knowledge of certain syntactic requirements of English.

Our findings consistently point to the view stating that syntax drives the acquisition of morphology. In the case of Mawar and Melati, the incidence of inflected and uninflected forms of different morphological properties has been examined over the course of 12 months. The results reveal that the two subjects frequently omit past tense marking and 3sg –s whenever they are required in obligatory contexts. If we refer to the relevant table in the previous and subsequent sections, such variability in the suppliance data of the two subjects is obvious. However, similar to what has been found in Haznedar's (2001) study of Erdem, the data from Mawar and Melati also reveal that the two subjects consistently use nominative subjects and place lexical verbs in the VP. None of the utterances in all the transcript samples have been found with null or accusative subjects. In addition, verb placement is also accurate when supplied (always remaining in the VP). Furthermore, it has also been observed that suppliance of some properties (e.g., the copula) has been relatively

high throughout the data collection period. For this particular reason, we find no evidence that the abstract "Tense" is underspecified, suggesting that surface morphology is not the precursor to interlanguage syntax. To be precise, Table 29 below illustrates Mawar and Melati's suppliance of functional morphology in obligatory contexts. For comparison, I have also calculated the incidence relevant to their syntax knowledge.

Table 29: Mawar and Melati's Suppliance of Functional Morphology in Obligatory Contexts (in %).

Subjects	3sg. Agr.	Past Tense on Lexical Verbs	Overt Subjects	V in VP
Mawar	16	50	95	92
Melati	22	23	98	96

Table 29 provides a clear illustration of the use of functional morphology in obligatory contexts. What is remarkable about the data is that there is a clear separation between the incidence of verbal inflection (between 16% - 50%) and different syntactic phenomena relevant to it, such as providing overt subjects and verbs staying in VP (near 100% accuracy). It seems that Mawar and Melati optionally produce the overt morphemes *–s* and *–ed,* but they can distinguish between the different uses of these morphemes (accurately supplied when required). In addition, they adequately possess the knowledge of syntactic processes necessary to regulate the sentence, especially those relevant to the two morphemes discussed beforehand. If we refer to that data, it is difficult to say that regular omission of functional morphology indicates lack of L2 morphosyntactic features.

This finding is particularly relevant to a number of previous studies of variability. In the study of Patty, who is an adult L2 acquirer of English, Lardiere (1998) found that morphology remains missing for a long period of time. However, knowledge of syntactic properties that are related to morphology has been acquired, to a certain extent. For example, while Patty frequently drops agreement morpheme *–s* and *–ed* for past tense in her L2 production, her knowledge of verb movement is proven to be excellent. In addition to the study of Patty, findings from the present study are also similar to the case of L2 French and German samples presented in Prevost and White (2000). Findings in the study suggest that L2 learners fail to correctly supply verb inflections, but their knowledge of verb movement is proven to be accurate.

As argued by Borer and Rohrbacher (1997), abstract functional projections can still be found in learners' production although overt morphology is absent. They propose that

omission of overt agreement markers in learners' L2 production could be due to their desire to avoid producing incorrect forms when an acquisition has not fully taken place. To some extent, Borer and Rohrbacher's argument is consistent with our findings in the present study. We know that Mawar and Melati have not completely acquired any of the six morphemes currently being investigated and that high rate of omissions in their data could be considered as an attempt to avoid producing incorrect forms.

6.3.1.3 Relevant Findings for Simultaneous vs. Sequential Bilingualism

In addition to the previously mentioned findings, the present study also presents intriguing findings of two types of bilingual learners, simultaneous and consecutive (successive). As mentioned previously in the earlier chapters, there are at least two types of learners in regards to how they acquire the first and second language(s). In this particular study, Mawar is considered a simultaneous learner as she acquired L1 Indonesian and L2 English simultaneously. On the other hand, Melati is a sequential learner due to the fact that she had already completed the acquisition of L1 Indonesian before being exposed to L2 English (Meisel, 2008).

As discussed earlier, a child is considered a simultaneous bilingual when he or she acquires two languages at the same time. In Meisel's term, this type of bilingual acquisition is also called child second language (L2) acquisition. Both simultaneous and consecutive type of language acquisition should occur between birth to approximately ten years of age. If acquisition takes place after the age of ten, Meisel classifies this as adult L2 acquisition.

With the purpose of examining whether the two subjects in the present study produce different characteristics and quantity of errors, I used the analysis results from their morpheme suppliance data. Findings indicate that the data do not provide evidence showing that either one of the subjects produces more errors than the other. In other words, both subjects seem to have their own isolated problems with morphological inflections. However, we have found some errors that might be caused by the absence of similar properties in L1. In addition, the two subjects tend to have similar patterns in regards to the kinds of errors they frequently produce in L2 English production. Mawar, however, appears to show steady improvement in her L2 development, while Melati does not.

One might be questioning whether the two types of bilingual learners would perform differently in terms of their L2 production, particularly when considering their L2 influence and age differences. For this particular issue, I posed the third research question emphasizing what type of L2 errors are most likely caused by the absence of these particular morphology

and syntactic properties in the L1 and whether the two subjects have similar patterns in making L2 inflection errors. I then hypothesized that due to the amount of L1 influence and the age difference (simultaneous versus successive L2 acquisition), the number of inflectional errors produced by the younger L2 child would be fewer than the inflection errors produced by the older L2 child.

Answering this type of question is another challenging task in this study. For this particular purpose, I conducted a thorough analysis of the two participant's performance by closely looking at their L2 production transcripts. The following table provides a comparative overview regarding the percentage of errors produced by each child for the morphemes currently being investigated.

Table 30: Errors Produced by Mawar and Melati

PROPERTY	CATEGORY OF ERRORS				TOTAL ERRORS	
	OMISSION		MIS-FORMATION			
	MAWAR	MELATI	MAWAR	MELATI	MAWAR	MELATI
3 sg -s	79%	70%	14%	15%	93%	85%
Reg. Verb	100%	70%	0%	3%	100%	73%
Irreg. Verb	14%	36%	38%	3%	52%	39%
Plural -s	26%	50%	0%	0%	26%	50%
Copula be	9%	6%	3%	6%	12%	12%
Auxiliary be	15%	25%	4%	4%	19%	29%

If we refer to Table 30 above, we cannot instantly judge whether one child is better than the other in terms of how many individual errors they produce in the data. Quantitatively, it is clearly visible that Mawar produces relatively more omissions than Melati with regards to the agreement *–s* and *–ed* verbs. In contrast, Melati seems to struggle more with these morphemes, especially with the fact that her incorrect suppliance statistic is generally greater than that of Mawar. With regard to irregular verbs, however, Melati produces double the quantity of omissions than Mawar, but incorrect inflections have been recorded to be comparatively muchlower in quantity. For these three morphemes, the younger child Mawar seems to produce more errors in total for both omission and misformation.

Regarding inflectional errors for the plural marker *–s,* Melati omits twice as many errors as Mawar does. Misformation for this morpheme could not be calculated as there is no other option of a morpheme to express plurality in English other than *–s.* Thus, the only possible error to be recorded is when the child omits or fails to supply the *–s* itself. Furthermore, no suppliance of *–s* in non-obligatory contexts has been found in the data. Consequently, the older child seems to produce more errors with plural *–s.*

Mawar and Melati appear to be inconsistent with the use of *be* forms. One recognizable pattern that can be seen from the data is that they seem to have very close characteristics in the way they supply incorrect *be* forms as a copula or auxiliary. Although the number of incorrectly inflected morphemes is considerably lower than the number of omissions for these two items, they generally tend to struggle with supplying them accurately. As a result, the omission rates for these morphemes are higher, particularly for the auxiliary *be.* In general, however, Melati appears to be struggling more with these properties.

6.3.1.4 Conclusion for Variability in L2 Production

The present study relies predominantly on the predictions suggested by the MSIH. As discussed earlier, the MSIH suggests that at a morphological level inflections are assumed to be absent (Haznedar & Schwartz, 1997). Data from the two participants' transcripts have been analyzed to approve or disapprove this claim. As for the second research question, we hypothesized that for both children, there would be a divergence between surface inflection and more abstract syntactic properties, where the acquisition of the latter could precede of the former. Our findings indicate that there is a separation between surface morphological properties and abstract featural levels. Initially, through this study, we expected to find evidence of either *'morphology before syntax'* or *'syntax before morphology'* claims.

In explaining this particular condition, I consider using White's (2003) proposal stating that the non-appearance of surface morphology cannot be used as an indication of the absence of abstract representation. In the case of English, one important reason for this is that not all morphological inflections in this language are overtly marked, thus an absence of such features do not determine an absence of learners' abstract syntactic knowledge. Even when explicit morphology is absent, evidence for Infl can still be found. In a sentence like *we study*, for instance, we can still mark features for person (first), number (plural), and tense (-past), all of which are not overtly realized. These features must be present appropriately and according to clause or sentence requirement. Therefore, a sentence like *we studies* would be considered ungrammatical because there is a feature clash between the form of the verb and the pronoun.

Together with the aforementioned studies, findings from the present study appear to demonstrate that there is no particular relation between syntactic deficit and accurate use of inflectional morphology, as suggested by representational accounts advocating impairment views discussed previously (refer to Meisel (1997), Vainikka and Young-Scholten (1994, 1996, 1988), and Eubank (1993/1994)). Furthermore, it clearly shows that there is a dissociation between syntax and the use of inflectional morphology, which can be used as evidence to support the Missing Surface Inflection Hypothesis (Prevost and White, 2000; also Haznedar and Schwartz, 1997). This finding also indicates that syntax drives the acquisition of morphology, rather than vice versa, as advanced by White (2003). For this particular reason, our hypothesis has been approved and we can suggest that there is a divergence between abstract syntactic properties and surface morphological realization.

As for the third research question, our data confirmed that there was no significant evidence to proclaim that either one of the subjects produces (quantitatively) more errors than the other. In other words, both subjects seem to have their own isolated problems with morphological inflections. Mawar's higher rate of omissions, especially for agreement *–s* and *–ed* verbs could be seen as a reflection of characteristics of her very early acquisitional pattern where some morphemes have not been fully acquired yet. Likewise, Melati's high rate of omissions for these morphemes could also be a result of the same phenomenon, particularly the agreement morpheme *–s,* which is found to be frequently incorrectly inflected. For this reason, the data have been unable to confirm the hypothesis. Therefore, we can conclude that simultaneous and consecutive learners do not necessarily surpass one another in regards to how many L2 errors they produce. The data, however, confirm that the type of errors made by the two subjects are mainly *interference errors* which are mainly triggered by the differences between their first language and second language grammar systems, especially in the way the two languages express surface morphology.

6.4 Summary

Our findings indicate that learners' errors collected from roughly 7906 utterances are mostly consistent with the proposal of the Missing Surface Inflection Hypothesis rather than the impairment phenomenon, or any other variability proposals, for a number of reasons. First of all, in order to qualify as a missing inflection, it is important to make sure that the absence of inflection takes place at the surface morphological level rather than at the abstract featural level (Prevost and White (2000), Haznedar and Schwartz (1997)). All the inflections involving in the present study were found to be at the surface morphological level.

Additionally, as MSIH suggests, inflections are mostly accurate whenever they are supplied. This is particularly true in the present study, especially when challenged with the suppliance data. It has been found that L2 learners' accuracy rates are relatively high. In this regard, it can be observed that the omission rate is higher than that of the misformation rate. This indicates that, whenever the learners are unable to supply or find the correct morpheme, they tend to simply insert the default form rather than any other inflectional forms due to particular difficulties in retrieving correct inflectional morphemes. When the context is spoken production, such difficulties are multiplied because of environmental pressures and time constraints. As a result, learners use infinitives as default forms whenever certain obligatory contexts require the insertion of specific inflectional morphemes (Ionin, 2013).

This is particularly true when corroborated with alternative theories, such as the theory of Distributed Morphology (Halle and Marantz, 1993), which suggests that the process of lexical insertion should follow certain hierarchical steps. According to the DM, the finite form should be the first choice when a learner is choosing which lexical item to insert in an obligatory context of inflectional morphology action. In conditions when a learner is incapable of retrieving the required finite form, due to processing difficulties or other communication pressures, the underspecified form would normally be inserted. In this particular case, as a non-finite verb is an underspecified form, learners will use it as a default option.

Prevost and White (2000) emphasize that when learners have fully acquired an inflected finite form, for instance, it should hypothetically be the top priority for selection in the lexical insertion rather than any other underspecified item such as the default form. The following examples, extracted from learners' corpus, are presented to highlight this point:

(1)	* Mommy go home.	(Mawar	age 2;6)
(2)	She paints…	(Mawar	age 3;3)
(3)	* My teacher say …	(Melati	age 9;4)
(4)	… then Azka says …	(Melati	age 9;12)

The first and the second utterances have been collected from Mawar's transcripts at two different points of time, as have the other two from Melati. Both utterances with incorrect inflections (marked with an asterisk) give a good indication that there is a struggle in retrieving correct inflectional morphemes, thus the underspecified default form has been inserted. According to Lardiere (1998), even when such a form has been fully acquired, there is still a possibility that learners face difficulty in supplying the required morpheme. In the other corresponding correct utterances, collected at a later time around the final months of data collection, the forms bearing [+finite] feature win over the underspecified default form. For this reason, the learners insert this most prioritized form, instead of the other, into the syntactic node.

One might be questioning whether the accuracy rates or scores presented by the data would reflect learners' developmental sequence. In other words, it may lead us to question whether those scores can be translated as whether or not a morpheme has been acquired. In the purpose of answering such a question, I would like to refer to Slabakova's (2016) argument about the meaning of "to be acquired". By giving an example of English progressive tense (*Mary was eating a sandwich when I came in*), Slabakova asserts that a learner is considered to have acquired such a form when he or she can contrast it with another form such as simple past tense. In other words, a learner must know the difference

between *Mary was eating* and *Mary ate* before we can say that this functional category has been activated in the learner's grammar. Linguists have different arguments about the percentage of target-like use, which range between 60% to 90%.

With regards to Mawar and Melati, it is somewhat difficult to decide whether the functional category has been acquired. If we use the 60% cut-off point suggested by Vainikka & Young-Scholten (1994) for the criterion of successful acquisition, it is clear that two morphemes (third person *–s* and regular past tense *–ed*) have not been successfully acquired by the subjects. This data, however, only represent the learners' *production* of the correct form.

To accommodate this, some scholars suggest the use of performance data (e.g., comprehension of the correct meaning) in order to establish whether the functional category has been acquired. One of prominent works in this regard is that of McCarthy (2005), who proposes an underspecification hypothesis. She argues that variability occurs not only in production, but in comprehension as well. In her study investigating L2 Spanish clitics and adjectives, results reveal that intermediate level participants show variability across comprehension and production.

Incorporating McCarthy's proposal into the present study is immediately impossible. Data from Mawar and Melati only represent their spontaneous production, thus there is no means of evaluating their comprehension of the morphemes. For this reason, underspecification accounts cannot be tested with the present data and would be unsuitable for use in this context. Instead, data from the two research subjects have provided clear evidence that there are no representational deficits in learners' language. However, mapping problems between abstract features and surface morphological forms are obvious, adding weight to the Missing Inflection claims.

The relatively large number of errors in 3sg *–s* and regular past (*–ed*) morphemes is in line with Luk and Shirai (2009), who suggest that where a morpheme is not recognized in L1, L2 production for that particular morpheme will be affected as a result of a negative transfer. Furthermore, the findings of the study have also provided clear evidence that learners' underlying syntax and surface morphology are not linked. Our data support the claims that syntax drives the acquisition of morphology, thus disproving the hypothesis claiming that the absence of overt morphology is an indication for an incomplete acquisition of certain grammatical categories. In particular, we have not found any evidence that the acquisition of morphology is a prerequisite for further development of syntax knowledge, as suggested in a number of accounts such as the *Rich Agreement Hypothesis.*

The present study investigated two Indonesian L2 learners in regards to their acquisition of English as a second language. Not many empirical studies had been done on such L2 learners before, especially in the context of L1 Indonesian and L2 English. The study truly presents novel contribution by bringing a new set of data and a new family of language into the field of child SLA study.

Findings gathered from learners' corpus have confirmed at least a number of the following points. First of all, it has been found that a great number of errors from the learners' data could be traced to their L1 interference. In this particular case, missing morphological suppliance in L2 English is strongly related to the fact that morphological properties currently being investigated are not overtly marked or realized in the subjects' L1 Indonesian. As a result, many of these morphemes disappear from their initial data, but our data reveal that these properties are gradually reproduced as they grow up and receive more exposure to the target language.

The data also indicate that there is no particular evidence showing that a simultaneous learner necessarily makes more inflectional errors than the sequential learner, or vice versa, especially with respect to L1 influence and age differences. Errors found in their data largely vary and fluctuate over the course of the data collection period, indicating that there is no specific pattern in how the errors are made. With regards to the type of errors, however, it has been found that the two learners appear to produce a significantly higher number of omission errors than incorrect inflections. What this suggests is that they tend to either follow the rules of L1, which does not overtly mark such inflections, or that there are some communication difficulties causing them to drop obligatory inflections and use the default forms instead. The number of incorrectly supplied morphemes is also high when compared to that of monolinguals, indicating that there is still a long way to go for them in order to fully acquire these morphological properties.

In order to qualify for the MSIH theory, learners need to meet certain conditions. First of all, MSIH claims are applicable when learners are known to have unconscious knowledge of functional projections. This is usually visible through their utterance production patterns (as discussed in the previous sections). In addition, the underlying syntactic representations need to be correct, while surface morphology is normally seen as non-target-like and with frequently occurring errors.

The problems discussed in the MSIH generally deal with learners' failure to correctly supply required morphemes (Ionin, 2013). In other words, the learners tend to omit the target morpheme or, if supplied, use an incorrect one. However, when the morphemes are supplied,

they are almost always placed correctly (Ionin, 2013). In other words, the use of the investigated morphemes was largely correct and only a very small number of them have been used in an incorrect position.

Based on the data and findings discussed in the previous sections, I would like to argue that the distributional properties of the morphemes investigated in this study are largely consistent with the MSIH. The data from the two young L2 learners of English mostly favor missing inflections over wrong inflections. The results of the present study with regards to the percentages for omission and inappropriate use of inflection suggest that L2 learners' abstract syntactic knowledge is already in place. Although the rate of omission and misformation is still high, I personally believe that this is due to a number of restrictions such as their limited access or exposure to L2 prior to data collection. The two children had only been in the country for a short period of time, thus there is a possibility that they still are confused about the grammar systems of L1 and L2.

As far as the investigated morphemes are concerned, our data indicate that the two children have been able to show knowledge of relevant morphological constructions. Although their accuracy rate is not extremely high, they are able to demonstrate that they know how they are supposed to use the morphemes. For example, they generally know that an *–s* should be placed at the back of a present tense verb when it is preceded by a third person singular subject. Most of the errors produced are found to be omission of these morphemes, indicating that they choose to insert the default form of the verb rather than any attempt to use incorrect morphemes for a different subject. In other words, none of the sample utterances found contained the use of the agreement morpheme *–s* preceded by a subject other than the 3sg.

Similarly, other morphemes such as *be* forms and their relevant auxiliaries have also generally been used accurately. Our data indicate that the two children perform very well in the production of the copula *be,* but with a slightly lower accuracy rate when the morpheme is used as an auxiliary. Overall, however, they know which form to use with respect to the subjects and tenses. Considering that their omission rate is considerably higher than their rate of incorrect use, the data prove that the default forms have been largely used when inflection is necessary. This is a good indication that the participants are either trying to avoid using incorrect forms or having difficulty choosing correct ones due to some communication constraints. We conclude that participants' knowledge of relevant morphological inflection is already present, but they are still having difficulties implementing it on the surface level.

Chapter 7: Conclusion

This chapter presents the summary of the research findings and conclusions of the thesis. In the subsequent sections of the chapter, I will begin with a brief summary of the main findings by re-visiting the study and what has been found so far. I will attempt to review some methodological issues which were raised in the course of the present study. In addition, a discussion about the practical implications of the study will be presented in the next section, followed by a section about limitations and words dedicated to recommendations for future studies. Finally, the chapter will be concluded by a final section for a summary.

7.1 Summary of the Main Findings

This thesis investigated the acquisition of six inflectional morphemes by two L1 Indonesian-speaking child L2 learners of English. Findings from the present study have indicated that the data have provide no evidence suggesting an effect of non-native input in child L2 production. Besides, it has been confirmed that the low functional morphology and high variability of the L1 (Indonesian) grammar affect the realization of L2 (English) morphology. It was hypothesized for the subjects of the present study, whose L1 is Bahasa Indonesia and are also exposed to at least one local language spoken in the family, that there is a divergence between surface inflection and more abstract syntactic properties, where the acquisition of the latter could precede the former. Our findings indicate that there is a separation between surface morphological property and abstract featural level. Furthermore, it was also predicted that the younger (simultaneous) learner would produce less inflectional errors than the subject who acquired L1 and L2 sequentially.

7.2 Theoretical and Practical Implications

Initial motivation to conduct this study originated from my personal experience having a great amount of difficulty in learning English as a foreign language in Indonesia. Since I was first exposed to English, I immediately found it hard to acquire the knowledge of many properties in English, especially those that are not recognized in my first language. As soon as I started to pursue my career as an English teacher, these difficulties became greatly more obvious than before. Acquiring the knowledge of regular and irregular English past tense, for instance, is enormously hard for L2 learners whose L1 does not recognize the use of such a property. Therefore, teaching such knowledge is considered as another level of an already-challenging task for many.

The present study is expected to provide beneficial findings to the field of second language acquisition and learning. The results of the present study clearly indicate that L2 learners (Mawar and Melati) acquire abstract syntactic knowledge in advance of surface morphology. Although cases of omission and inaccurate suppliance are found in all the samples, the morphemes are mostly correct when supplied. This finding clearly provides further support to the Missing Surface Inflection Hypothesis account.

In addition, it was found that Indonesian child L2 learners of English consistently omit all the morphemes investigated in the study, which in fact are not overtly inflected in their L1. Although it is not the only factor, L1 influence or interference is considered to have played an important role in this specific case. Such a finding is particularly important to emphasize, especially when we are trying to explain the background behind their consistent omissions of the morphemes. When it comes to teaching L2 morphological properties that are not overtly available in learners' L1, teachers or parents should avoid the idea of asking the learners to memorize such morphemes. Instead, learners should be given maximum exposure to relevant knowledge so that interference problems (i.e., omission of the morphemes) can be avoided.

7.3 Limitations and Future Research

It is important to point out that research on morphological variability involves a lot of different languages. Studies on the Truncation Hypothesis, for instance, mainly covers L2 French and German (*i.e.,* Prévost, 1997). With regard to MSIH, besides a number of other major European languages, relevant support is also found in the study of an adult learner of L2 English (e.g., Lardiere, 1998). It is known that languages like French and German have richer inflectional morphology than English; thus it is assumed that morphological variability studies conducted in English are relatively difficult to interpret (Prévost, 2003). Therefore, I suggest that future research on morphological variability in general, or MSIH in particular, consider focusing on languages with rich morphologies, especially those that have not previously been studied.

Testing variability in L2 production surely involves delicate and challenging tasks along the way. Considering Prevost and White's (2000) assertion that variability is due to communication problems during production, the present study has only tested production data from the two research subjects. However, it should also be noted that if the production problem is to be responsible, then taking care of communication pressure should reduce or abolish the occurrence of variability (McCarthy, 2008). For this reason, I suggest the use of

comprehension tasks in future studies, which are currently lacking in this research. As McCarthy suggests in the results of her study, morphological variability does extend to comprehension, thus an extension of such a study is worth considering within future research investigating morphological variability.

Finally, I suggest the use of standardized tests like the Bilingual Syntax Measure (BSM) instead of spontaneous recording for the purpose of data collection. After experiencing this extensive study, it turns out that spontaneous data collection tends to lead to an extremely large amount of data, which need to be transcribed, analyzed, and discussed. For a small-scale study, this is usually attainable. However, much larger longitudinal studies with more participants and a longer period will certainly multiply the work and time required to deal with the data. In the present study, the work of transcribing and coding the audio data itself claimed hundreds of hours of work, let alone the remaining work of analysis and writing up the discussion. With the use of a standardized test like BSM, a large amount of time and work can be eliminated, resulting in a much more efficient study. The use of BSM has been applied in a number of well-known morpheme order studies, one of which is the study of Brown (1973) where seven cartoon-like pictures and 33 questions were used to elicit functional morphology and assess how accurately it was used in relevant obligatory contexts. Another prominent study which applied such an instrument is that of Dulay and Burt (1974), in which BSM scores were used to evaluate L2 learners' acquisition of English under different circumstances and amounts of exposure.

7.4 Summary

The study has provided detailed data and comprehensive analysis of the acquisition of six English morphemes by two Indonesian child L2 learners of English. As mentioned in the earlier chapter, Mawar acquired the two languages in a simultaneous fashion as she started learning L1 Indonesian and L2 English at the same time since an early age. It was observed that she acquired the constructions of the two languages at the same pace or even faster than some monolingual English children. Her L2 development appears to be more obvious than the other child, with a steady increase in her MLU counts. In addition, she seems to acquire morphemes quickly, which can be seen from the patterns of her suppliance data suggesting that errors tend to disappear along the way.

In contrast, Melati is considered a consecutive or sequential learner. She has fully established fluency in her L1, making it harder for her to acquire particular morphemes that are not recognized in her mother tongue. Data indicate that Melati's acquisition of the six

morphemes appears to be slower than that of Mawar. Her MLU counts seem to fluctuate over time, indicating her difficulties in producing longer utterances at specific periods of time. It has also been observed that similar errors seem to be repeated over and over, as many are found in most of the samples.

Both Mawar and Melati appear to struggle more in the production of morphemes that are predicted to be acquired at a later age by L2 learners. Results of the study show that the rate of omission for third person singular *–s* and the regular past tense verbs is relatively high for both of them. The number of omissions for the other four morphemes, however, is comparatively lower, indicating that the acquisition for these particular morphemes has taken place.

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APPENDICES

Appendix A: Details about the recording sessions.

Rec. Sessions	Target Participants	Length	Location	Description
1	Mawar	54 mins.	Mawar's home.	A talk with Whoallie at home.
	Melati	76 mins.	Researcher's home.	A lunch gathering at researcher's home.
2	Mawar	34 mins.	Mawar's home.	A morning talk between Mawar and her father.
	Melati	70 mins.	Researcher's home.	Kat, Nab, and Azka at researcher's home.
3	Mawar	46 mins.	Mawar's home	Mawar and her father.
	Melati	N/A	N/A	*Melati was on holiday to Indonesia!*
4	Mawar	34 mins.	Mawar's home	Mawar, father and mother while playing toys.
	Melati	44 mins.	Melati's home.	An interaction between researcher and the child at her house.
5	Mawar	47 mins.	Mawar's home.	Mawar and her father while playing toys at home.
	Melati	78 mins.	Southampton Common.	Barbeque at park.
6	Mawar	57 mins.	Lawn road playground.	Mawar and her father while playing on a park.
	Melati	60 mins.	Bitterne riverside.	Playing scrabble & picnic.
7	Mawar	53 mins.	Mawar's home	Mawar, father and mother while paying toys at home.

	Melati	78 mins.	Researcher's home	Cooking pumpkin pie.
8	Mawar	40 mins.	Shopping + park	While shopping and at the playground.
	Melati	40 mins.	Researcher's home.	Open interview between researcher and the child about holiday.
9	Mawar	93 mins.	Home and park.	A mix of Mawar's interaction with father at home and park.
	Melati	160 mins.	Riverside	Picnic. Scrabble + games.
10	Mawar	57 mins.	Mawar's home.	Mawar, mother and her father reading story books and playing toys.
	Melati	82 mins	Researcher's home.	Open interaction between interlocutors, Azka and Melati.
11	Mawar	64 mins.	Southampton Common.	Mawar and father playing on a playground.
	Melati	80 mins.	Melati's home.	Scrabble game at Melati's house.
12	Mawar	64 mins.	On flight, Morocco.	On a flight from a winter holiday from Morocco.
	Melati	120 mins.	Melati's home.	Scrabble + games at Melati's home.
13	Melati	50 mins.	Melati's home	Open conversation at Melati's house.

Appendix B: Detailed information about Amount, Length, and Quality of Language Exposure Collected through Utrecht Bilingual Language Exposure Calculator (UBiLEC).

RECAPITULATION		PHASE 1						PHASE 2						PHASE 3					
		SHO			NAB			SHO			NAB			SHO			NAB		
		TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2	TL	OL1	OL2
AMOUNT OF EXPOSURE																			
Average % exposure to TL/OL1/OL2 per week (home only):	in percentage	50	45	5	35	35	30	50	45	5	35	35	30	64	30	6	35	35	30
Average % exposure to TL/OL1/OL2 per week (home/school):		55	37	8	60	33	7	55	37	8	60	33	7	65	35	0	60	33	7
Average % exposure to TL/OL1/OL2 per week (home/school/extra):		51	42	7	65	29	6	54	41	5	65	29	6	75	25	0	65	29	6
Average % exposure to TL/OL1/OL2 per week (home/school/extra, incl. holidays):		45	50	5	64	31	5	53	43	4	64	31	5	74	26	0	64	31	5
Average % OF TL/OL1/OL2 spoken by child (output) at home		33	67	0	43	50	7	43	57	0	43	50	7	73	27	0	43	50	7
LENGTH OF EXPOSURE																			
Cumulative LoE to TL/OL1/OL2 (in years)	In year	0.7	1.3	0.0	0.6	1.4	0.0	1.0	1.3	0.0	0.9	1.4	0.0	1.1	1.3	0.0	1.0	1.4	0.0
Traditional LoE to TL/OL1/OL2		1.3	2.3	0.5	1.3	9.2	9.2	1.7	2.8	1.0	1.8	9.2	9.2	2.3	3.3	1.5	2.3	9.2	9.2
QUALITY OF EXPOSURE																			
Average quality of TL/OL1/OL2 exposure (home only)	in level (1-5)	3.8	0.2	n/a	3.0	0.3	n/a	3.8	0.2	n/a	3.0	0.3	n/a	3.6	0.2	n/a	3.0	0.3	n/a
Average quality of TL/OL1/OL2 exposure (home/school)		3.8	4.6	5.0	4.1	3.3	5.0	3.8	4.8	5.0	4.1	3.3	5.0	3.6	4.8	5.0	4.1	3.3	5.0
Average quality of TL/OL1/OL2 exposure (home/school/extra)		2.9	4.7	2.5	4.3	1.6	n/a	3.9	4.7	2.5	4.3	1.6	n/a	3.6	4.4	2.5	4.3	1.6	n/a
Average quality of TL/OL1/OL2 exposure (home/school/extra, incl. holidays)		3.9	4.7	0.0	4.2	1.8	n/a	3.9	4.7	0.0	4.2	1.8	n/a	3.6	4.5	0.0	4.2	1.8	n/a

Appendix C: Mawar's MLU Recapitulation

REC.	DATES	NUMBER OF UTTERANCES	NUMBER OF MORPHEMES	MLU	STD DEV
1	1/4/2015	256	493	1.926	1.34
2	2/15/2015	194	462	2.381	1.77
3	3/23/2015	196	457	2.332	1.971
4	4/27/2015	247	583	2.360	1.568
5	5/18/2015	413	994	2.407	1.565
6	6/3/2015	577	1516	2.627	1.871
7	6/27/2015	470	1240	2.638	1.662
8	8/9/2015	180	469	2.606	1.489
9	9/4/2015	441	1037	2.351	1.509
10	10/11/2015	497	1418	2.960	1.919
11	11/11/2015	463	1664	3.594	2.301
12	12/16/2015	456	1697	3.721	2.015
total		**4390**	**12030**		
mean		**366**	**1003**	**2.659**	

Appendix D: Melati's MLU Recapitulation

REC.	DATES	NUMBER OF UTTERANCES	NUMBER OF MORPHEMES	MLU	STD DEV
1	1/18/2015	242	1125	4.649	2.802
2	2/15/2015	265	1277	4.819	2.513
3	5/1/2015	216	994	4.602	2.672
4	5/17/2015	188	834	4.436	2.618
5	5/30/2015	218	771	3.537	2.168
6	6/7/2015	132	418	3.167	1.999
7	7/28/2015	678	3027	4.462	3.05
8	9/12/2015	391	1254	3.207	2.113
9	10/24/2015	333	1305	3.919	2.63
10	11/22/2015	204	751	3.68	1.998
11	16 & 31/01/2015	169	860	5.089	3.119
12	2/15/2015	480	2589	5.394	3.309
total		**3516**	**15205**		
mean		**293**	**1267**	**4.633**	

Appendix E: Sample Data from Mawar's Transcript

```
@Begin
@Languages:  eng
@Participants:MAW Mawar Target_Child, MAS Masrizal Investigator
@Options:
@ID:    eng|MawarRec6|MAW ||female|||Target_Child|||
@ID:    eng|MawarRec6|MAS||male|||Investigator|||
@Media:         Mawar150215, audio
@Transcriber: masrizal
@Time Duration:         00:57:30
@Date:          03-JUN-2015
@Situation:     lawn road park Southampton
*MAW: my heart (.) daddy (.) hehe .
%mor: pro:poss:det|my^co|my n|heart n|daddy co|hehe .
* MAW:          machi@b is my heart xxx .
%mor: bab|machi cop|be&3S^aux|be&3S pro:poss:det|my^co|my n|heart .
*MAS:  machi@b is ?
%mor: bab|machi cop|be&3S^aux|be&3S ?
* MAW:          xxx .
*MAS: your head hurt ?
%mor: pro:poss:det|your v|head^n|head^adj|head
        part|hurt&PASTP^v|hurt&ZERO ?
* MAW:          yes .
%mor: co|yes .
*MAS: yes (.) what happened to your head ?
%mor: co|yes pro:wh|what^det:wh|what part|happen-PASTP^v|happen-PAST
        inf|to^prep|to pro:poss:det|your v|head^n|head^adj|head ?
* MAW:          hurt in the head .
%mor: part|hurt&PASTP^v|hurt&ZERO prep|in^adv|in art|the
        v|head^n|head^adj|head .
*MAS: hurt ?
%mor: part|hurt&PASTP^v|hurt&ZERO ?
*MAS: what happened ?
%mor: pro:wh|what^det:wh|what part|happen-PASTP^v|happen-PAST ?
* MAW:          my slide is dirty .
%mor: pro:poss:det|my^co|my v|slide^n|slide cop|be&3S^aux|be&3S
        v|dirty^adj|dirt&dn-Y .
*MAS: www .
%com: this part is not transcribed .
* MAW:          no .
%mor: qn|no^co|no .
*MAS: no hehe .
%mor: qn|no^co|no co|hehe .
* MAW:          yes (.) dirty .
%mor: co|yes v|dirty^adj|dirt&dn-Y .
*MAS: which one is your slide ?
%mor: rel|which^pro:wh|which^det:wh|which pro:indef|one^det:num|one
        cop|be&3S^aux|be&3S pro:poss:det|your v|slide^n|slide ?
* MAW:          there .
%mor: pro:dem|there^pro:exist|there^adv|there .
* MAW:          no it('s) my slide .
%mor: qn|no^co|no pro|it~aux|be&3S^pro|it~cop|be&3S pro:poss:det|my^co|my
        v|slide^n|slide .
```

Appendix F: Sample Data from Melati's Transcript

@Begin
@Languages: eng
@Participants:XXX unknown Unidentified, IZZ Izza Adult, HAN Hannan Brother, AZK Azka Girl, INT Katie Adult, NAB Nabila Target_Child, MAS Masrizal Investigator
@Options:
@ID: eng|change_corpus_later|XXX|||||Unidentified|||
@ID: eng|change_corpus_later|IZZ||female|||Adult|||
@ID: eng|change_corpus_later|HAN||male|||Brother||AZK's_brother|
@ID: eng|change_corpus_later|AZK||female|||Girl|||
@ID: eng|change_corpus_later|INT||female|||Adult|||
@ID: eng|MelatiRec2|MEL||female|||Target_Child|||
@ID: eng|MelatiRec2|MAS||male|||Investigator|||
@Media: Melati070615, audio
@Transcriber: masrizal
@Time Duration: 01:18:59
@Date: 07-JUN-2015
@Situation: pumpkin pie cooking at masrizals house.
*INT: www .
%com: this part is not transcribed .
*AZK: wash hands .
%mor: n|wash v|hand-3S .
*MEL: wash hands .
%mor: n|wash v|hand-3S .
*INT: yes (.) wash your hands .
%mor: co|yes n|wash pro:poss:det|your n|hand-PL .
*AZK: yes .
%mor: co|yes .
*INT: www .
%com: this part is not transcribed .
* MEL: www .
%com: this part is not transcribed .
*MAS: what are you cooking today (.) girls ?
%mor: pro:wh|what aux|be&PRES pro|you part|cook-PRESP adv:tem|today n|girl-PL ?
*MAS: I want something yummy (.) super yummy .
%mor: pro:sub|I v|want pro:indef|something adj|yum&dn-Y adj|super adj|yum&dn-Y .
* MEL: can I give you a (.) tissue ?
%mor: mod|can pro:sub|I v|give pro|you art|a n|tissue ?
*MAS: shall I go out ?
%mor: mod|shall pro:sub|I v|go adv|out ?
*AZK: go out [/] go out .
%mor: v|go v|go adv|out .
* MEL: not allowed .
%mor: neg|not part|allow-PASTP .
*AZK: girls only .
%mor: n|girl-PL qn|only .
*IZZ: www .
%com: this part is not transcribed .
*AZK: Shofie sleeping (.) in the bed .
%mor: n:prop|Shofie part|sleep-PRESP prep|in art|the n|bed .

Appendix G : Sample CHAT Codes Used in the Transcripts

FUNCTION	SYMBOL	DESCRIPTION	EXAMPLES
Babbling and jargon	yyy [=!]	Used when there is no english word to transcribe the expression.	*CHI: yyy [=! Dada].
Acronym		Use underscore between the letters. First letter, or all letters, capitalized.	U_S_A
Babbling	@b		*SHO: bababa@b
Child-invented forms	word@c	words created by the child without obvious derivational morphology	*SHO: aaaa@c
Comment on main line	[% text]	Used for commenting on main line.	*CHI: I really wish you wouldn't [% said with strong raising eyebrows] do that.
Dep. Tier: Action tier	%act:	Describes the actions of the speaker or the listener. It can also be used in conjunction with 0 symbol when action is performed in place of speaking.	*ROS: I do it %act: runs to the toy box. ***Or,*** *SHO: 0. %act: runs to the toy box
Dep. Tier: Addressee tier.	%add:	To show who talks to whom. Use three letter identifier (participant ID) to identify the addresses. In the next example, mother is telling Shofie and Father to 'be quiet'.	*MOT: be quiet. %add: SHO, FAT.
Dep. Tier: Comment tier	%com:	This is the general purpose comment tier.	*SHO: that's yucky (.) is it? %com: note tag question.
Dep. Tier: English Translation	%eng:	This line provides a fluent, nonmorphemicized English translation for non-English data.	*SHO: bibi mau bobok. %eng: I want to sleep.
Dep. Tier: Paralinguistics Tier	%par:	This codes paralinguistic behaviours such as coughing and crying.	
Dep. Tier: Situation Tier	%sit:	Describes situational information relevant to the utterance	*EVE: what that? *EVE: woof@o woof@o. %sit: dog is barking.
Dropped sounds	()	Used when the speaker drops sounds out of words.	runnin(g), (be)cause, prob(ab)ly, (ex)cept.