The Acquisition of Verbal Agreement and Tense Among L3 Learners of Arabic: Language Transfer and Other Contributing Factors

by

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Dedication

First and foremost, I dedicated this dissertation to the Almighty Allah for His guidance, strength, power of mind, protection, skills, and for giving me a healthy life.

This dissertation is wholeheartedly dedicated to my beloved parents, who have been my source of inspiration and gave me strength when I thought of giving up, and who continually provide their moral, spiritual, emotional, and financial support.

And lastly, I dedicated this dissertation to my brothers, sisters, relatives, mentors, colleagues, committee members, participants, friends, sponsors, and classmates who shared their words of advice and encouragement to complete this dissertation.

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Abstract

This dissertation explores first language (L1) transfer and second language (L2) transfer processes and models, such as the full transfer/full access model (FT/FA), the representational deficit/interpretability hypothesis, and the feature reassembly hypothesis (FRH). The typological proximity model (TPM), the cumulative enhancement model (CEM), the L2 status factor model (L2SFM), and the linguistic proximity model (LPM) are L2 transfer models explored. Evidence produced from previous studies on L1 transfer is not conclusive concerning verbal agreement because the investigated languages exhibit tense or verbal agreement. No language such as Indonesian was investigated that lacks agreement and tense. This is the important reason for conducting this dissertation research on Arabic third language (L3) participants with different language pairings. Indonesian exhibits neither verbal agreement nor tense features to isolate the processing of verbal agreement from tense. The reason for selecting the Turkish language was related to the fact that Turkish native speakers realize various types of verbal agreement and tense in their own language, similar to Arabic. Spontaneous data were collected from 86 participants divided into eight groups of Arabic L3 proficiency: beginner, intermediate, advanced, and near-native (four groups for each Indonesian and Turkish L1 participants). The data produced mixed evidence. Based on L1 factor alone, there was hardly any statistically significant difference between the two L1 groups. Significant differences obtained when proficiency alone or the interaction between L1 and proficiency was considered. Some Turkish L1 participants were found to outperform the L1 Indonesian participants and some L1

Indonesian participants were found to outperform the L1 Turkish participants on some target forms. Motivation seems to be at play in the case of the Indonesian groups, and taken together with the role of L1 transfer, can account for the full range of the data. These statistical differences add to the findings of earlier Arabic research in the literature. Regarding near-nativeness, there were numerous instances of participants who achieved the highest ceiling level (100%) and were able to perform on various target forms, suggesting that full Arabic proficiency is achievable. The results provide partial support for the FT/FA model. Based on how the research participants performed, it is possible that no language transfer model can adequately explain the results. However, L1 transfer hypotheses and L2 transfer models provide some explanations for the L1 group performances of the two L1s. The dissertation findings have implications for four important groups (students, teachers, authors, and Arabic second language acquisition researchers) primarily concerned with language acquisition and those who struggle with learning Arabic as an L2 or L3.

Chapter 1

Introduction

1.1 Overview

Language transfer is a phenomenon in which second language (L2) learners apply their knowledge of one language to another. It entails transferring linguistic structures between languages during bilingual or multilingual learning. This dissertation presents an overview of the diverse processes, hypotheses, and acquisition patterns of two types of first language (L1) learners. The typological pairings of the participants are Indonesian or Turkish as L1, English as L2, and Arabic as third language (L3). The participants did not report any knowledge of other languages. This dissertation specifically involves processes and hypotheses concerning *first language transfer* and *second language transfer,* including: *the representational deficit/interpretability hypothesis*, the *full transfer/full access model* (FT/FA), and the *feature reassembly hypothesis* (FRH). The second-language transfer models include the *cumulative enhancement model* (CEM), the *L2 status factor model* (L2SFM), the *typological proximity model* (TPM) and the *linguistic proximity model* (LPM); these will be discussed further in Chapter 2. The aim of the dissertation is to examine the transfer effects between Indonesian and Turkish and English as L2 and Arabic as L3.

Spontaneous data were collected from Indonesian and Turkish L3 learners of Arabic in Indonesia and Turkey because spontaneous production was an effective method for eliciting verbal agreement and tense constructions from all participants. The rationale for choosing

Indonesian learners is that the Indonesian language has no verbal agreement and no tense; it is written in the Roman alphabet; and no study of the acquisition of Arabic as a third language has examined the effects of the transfer of grammatical agreement and tense from the native language (in this case, Indonesian) and the second language (English) on the third language (Arabic).

The purpose of selecting the Turkish language was related to the fact that Turkish native speakers realize various types of verbal agreement and tenses in their own language similar to Arabic, which are explained in detail later in Chapter 2. The dissertation presents a comprehensive analysis of Indonesian and Turkish L3 learners of Arabic to assess the influence of the presence and absence of agreement and tense in their native languages and English as L2 while learning Arabic as their L3.

1.2 Relevant Arabic L1 and L2 Transfer Studies

L1 and L2 transfer have received attention in the second language acquisition (SLA) field (e.g., Albirini et al., 2019; Alhawary, 2005, 2009a, 2009b, 2019; Benmamoun & Albirini, 2018). L3 learners' exposure to English cannot be disregarded or eliminated, but rather included to help in the interpretation of results.

Alhawary (2005) studied the predictions of three proposals—the local impairment hypothesis, the failed functional features hypothesis, and the missing surface inflection hypothesis—based on cross-sectional data. The findings revealed that there was no statistically significant difference in the production of subject–verb agreement among the French L1 groups and the English L1 groups. However, there was a significant difference between French and English groups concerning nominal agreement, including semantic/natural versus grammatical

gender. The author suggested that the English L1 participants seemed to experience more grammatical gender issues, as opposed to their French L1 counterparts.

Alhawary (2009a) collected longitudinal data for English L1 and cross-sectional data for English L1, French L1, and Japanese L1 speakers, all learning Arabic as L2. The goal of this study was to investigate the acquisition of third-person singular gender agreement for the following target structures: nominal gender agreement, demonstrative gender agreement, and verbal agreement. The first study was longitudinal with data collected from 8 English L1 speakers and 1 French/Creole L1 speaker. The findings revealed that verbal agreement (subject–verb) emerged and was acquired before nominal agreement, despite the fact that the participants were exposed to nominal agreement (week 3) before subject–verb agreement (week 8).

The second study was cross-sectional and consisted of 82 English L1, French L1, and Japanese L1 speakers learning Arabic as L2. The Japanese class hours were roughly double those for the English and French learners. The English learners were exposed to nominal agreement before subject–verb agreement, French learners were exposed to subject–verb before nominal agreement, and the Japanese learners were mixed. The results reveled that all groups tended to master the default form (third-person masculine singular) first. The French learners outperformed the English and Japanese learners in the correct production of feminine suffixes. In terms of verbal agreement (subject–verb) performance, there was no statistically significant difference in performance between the L1 groups. In the nominal agreement, the French learners outperformed the English and Japanese learners (likely due to L1 transfer and nominal agreement in French, but not in English/Japanese). There was no statistical difference between English and Japanese performance. In the demonstrative agreement, the French and Japanese learners performed equally (although the French were slightly better with feminine agreement).

Finally, both the French and Japanese learners outperformed the English learners in the demonstrative agreement forms.

There were also cross-sectional analyses for English L1, Spanish L1, and Japanese L1 learning Arabic as an L2. The goal was to investigate tense/aspect and verbal agreement acquisition for tense/aspect (past vs. present) structures. The results revealed that the English and Japanese learners significantly outperformed the Spanish learners in verbal agreement (in both past and present). The tense results showed that all the three groups performed comparably; however, only the English learners seemed to exhibit two developmental paths for the two target forms (both past and present).

Alhawary (2009a) provided more cross-sectional data for English L1, Spanish L1, and Japanese L1 learning Arabic as an L2. The goal was to investigate third-person singular null subject acquisition. The author noted that Spanish and Japanese are pro-drop languages (+null), while English is not a pro-drop language (–null). The results showed that in terms of null subject production, the English and Japanese learners dropped subjects more than the Spanish learners. Null subject and verbal agreement (subject–verb) showed that the English and Japanese learners were more correct in terms of subject–verb tokens in null subject contexts than the Spanish learners, due to the Spanish textbook, which did not explain subject–verb agreement adequately. There was a correlation between null subject and verbal agreement inflectional development because the Spanish learners struggled with subject–verb and used pronouns as a crutch to convey their meaning, even if the conjugation was incorrect and they knew they should be dropped. The results were not contradictory to L1 transfer.

Alhawary (2009b) examined the claims made by Pienemann's processability theory (1998). In a longitudinal study, the author collected data from 8 English L1 and 1 French L1

speaker learning Arabic as an L2 to examine the emergence/processing of demonstrative–predicate gender agreement and verbal agreement structures hypothesized to each be processable at Stage 4. The results displayed that the two forms were not processed by the English L1 learners at the same stage. The reason was that the learners appeared to face additional difficulties concerning the demonstrative–predicate agreement than the verbal agreement. The findings were further supported by cross-sectional data from 53 English and French L2 learners of Arabic. In other words, the effects between groups were noted based on demonstrative–predicate agreement. It was concluded that this is probably because the L1 transfer factor is not included in processability theory.

Benmamoun and Albirini (2018) conducted a study that examined the transfer of colloquial Arabic to L2 acquisition of Standard Arabic (SA) and related their patterns of SA acquisition to those of L2 learners of SA. Specifically, the authors sought to investigate the influence of previously acquired language varieties involving Colloquial Arabic (QA) on the acquisition of SA. Data were collected from 35 heritage speakers, 28 L2 learners, and 16 controls on sentential negation, whereby the authors indicated that SA and QA are significantly different in this topic. The participants performed five oral tasks that focused on negating eight different types of clauses. The results showed that L2 learners and heritage speakers had comparable performance, experienced parallel difficulties, and generated similar error patterns. The results also revealed that although L2 learners had not exhibited robust transfer effects from L1 (English), the heritage speakers had displayed both positive and negative effects of L1 QA. In addition, the results presented the dynamics of interaction on spoken heritage languages and their standard counterparts, written with particular emphasis on diglossic contexts.

The main goal of the study by Albirini et al. (2019) was to examine the influence of both Colloquial Arabic (CA) and English on the acquisition of Standard Arabic (SA) by L3 and L2 learners. The researchers sought to investigate the role of L1 and L2 transfer and to determine whether transfer patterns change over time. The results suggest that CA plays a positive role in L3 learners' acquisition of SA in forms where SA and CA converge. However, English appears to play a negative role for both L3 and L2 learners. Consequently, structural proximity could play a positive role in transfer to the L3. Additionally, negative transfer, regardless of proximity/distance, declines as learners advance in their study of SA. Ultimately, the researchers noted two limitations to their study. First, they could have tested L3 learners on their knowledge of CA, which could have provided additional robust evidence to further support the effect of CA on their performance in SA. Second, a comparison between L1-English and L2-CA speakers would have allowed an investigation of whether transfer in L3 speakers is a consequence of the typological proximity of the languages involved rather than of the age of acquisition.

Alhawary (2019) examined spontaneous data from participants of different L1 backgrounds (Chinese and Russian) with respect to crosslinguistic influence, usage-based learning, L1 transfer, L2 transfer, role of input, and speech-processing prerequisite accounts. The data provided evidence for usage-based and crosslinguistic typological effect explanations. Specifically, the processing of a nominal gender agreement construction in Russian and the absence of a gender agreement feature is rooted in the Chinese participants and not their Russian counterparts. This was because Chinese participants' L1 has no gender feature (see also Alhawary, 2009). However, Russian displays verbal gender agreement in the past tense but Chinese does not. Alhawary (2019) argued that the closest of all L1 transfer interpretations, the FT/FA provided the closest adequate explanation.

Alhawary (2019) asserted that the FT/FA did not appear to account fully for the verbal gender agreement data and the absence of asymmetry in the performance of the participants on par with that of the nominal gender agreement. Furthermore, the results displayed that there was no L2 transfer effect regarding the participants' production of nominal (noun-adjective) agreement and null-subject use.

The tense/aspect of the data reported by Alhawary (2019) did not exhibit robust patterns in all three tasks: no significant differences between past tense, present tense, and random present tense were obtained. Instead, other factors seem to be at play: including instructional input such as the scheduling of the input and input saliency. The author suggested this issue needs to be investigated further with different language pairings including an L1 which exhibits features for neither verbal agreement nor tense. Additional relevant Arabic L1 and L2 transfer studies are discussed further in section (2.5) of Chapter 2.

1.3 Objectives of the Dissertation

The purpose of this dissertation is to contribute to the field of SLA and provide empirical data from languages that have not been investigated by applying L1 hypotheses and L2 transfer models or near-native attainment. The data were collected from native Indonesian and Turkish learners of Arabic L3. The participants were exposed to the English language in their general education, although they do not have the ability to speak or write in English. English was included in the study to investigate the transfer effect of the L1 and L2 on the Arabic L3 despite learners not being fully proficient in English even though L3 learners have been exposed to English when they were choosing their general education in Indonesia and Turkey.

Arabic SLA field remains under investigated, and the Arabic second/third language field requires more research to help teachers of Arabic understand how Arabic as an L3 is learned. Teachers should realize that their L3 learners come from various backgrounds. Their L3 learners speak multiple languages, which can cause some confusion in language classes, so their main objective must be to address their needs and learn more about their native languages to resolve any issues that may occur during the learning process.

The typological pairings of Indonesian and Turkish learners of Arabic acquiring the target structures had not been previously investigated; in particular, Indonesian is a language that does not exhibit features for verbal agreement or tense. In addition, English is the most spoken language in the world, and many students worldwide look forward to learning Arabic.

Ultimately, L1 and L2 transfer studies in the Arabic SLA field are under investigated. Several works (e.g., Alhawary 2005, 2009a, 2009b, 2019) have investigated agreement, among other essential Arabic structures, in Arabic based on empirical findings implementing the L1 hypotheses, L2 transfer models, and near-native hypotheses. This dissertation, however, provides empirical data with novel typological pairings of participants with Indonesian and Turkish as L1s to examine the effect of transfer and how Arabic L3 learners deal with the target structures of the dissertation when learning Arabic as an L3.

Knowing about the factors that influence language acquisition can better prepare teachers on how to teach Arabic. The demands of L2 learning create heavy responsibilities for L3 teachers; however, they may face difficulties, such as teaching grammar rules that are accessible in Arabic but are unavailable in their learners' L1.

1.4 Research Questions

The dissertation addressed the following research questions:

RQ1. *To what extent is the Arabic language output of Arabic L3 learners of different L1s influenced by the absence of verbal agreement and tense in their own L1s?*

RQ2. *Are there any similarities and differences in the third language output of Arabic L3 learners of different L1s at different proficiency levels of verbal agreement and tense?*

RQ3. *Do Arabic L3 learners of different proficiency levels and of different L1s acquire verbal agreement and tense as native speakers?*

1.5 Outline of the Dissertation

The dissertation consists of five chapters. Chapter 1 encompasses an overview of the dissertation, relevant Arabic transfer studies, the objective of the dissertation, the research questions, and an outline of the dissertation. Chapter 2 provides a review of L1 transfer studies, L2 transfer studies, near-native studies, and relevant Arabic SLA studies and covers their important findings and hypotheses or models. Chapter 3 covers the methodology of the study including the participants, target structures, instruments, tasks, and the recruitment procedure. Chapter 4 comprises data analysis and findings. Chapter 5 discusses the results of the dissertation and a comparison of the study findings with previous studies, limitations, conclusions, and pedagogical implications.

Chapter 2

Literature Review

2.1 Overview

This literature review chapter covers studies that have examined the language transfer effect that are vital to understanding language transfer hypotheses, methods, and the approaches that researchers examined about language transfer. Specifically, this chapter provides a review of the results of transfer studies relevant to the topic of the dissertation, with the aim of comparing them with the results of the current dissertation presented in Chapter 5.

This chapter encompasses five important sections. The first section provides an overview of L1 transfer studies. The second section includes the L2 transfer models. The third section comprises the near-native hypotheses. The fourth section covers relevant Arabic studies. The last section involves a summary of the chapter.

2.2 L1 Transfer Studies

At least three hypotheses account for first-language transfer and ultimate attainment in L2 acquisition: (1) the *representational deficit/interpretability hypothesis*, (2) the *full transfer/full access model* (FT/FA), and (3) the *feature reassembly hypothesis* (FRH). The L1 transfer hypotheses are discussed in detail below.

2.2.1 Representational Deficit/Interpretability Hypothesis

The representational deficit/interpretability hypothesis (e.g., Franceschina, 2005; Hawkins, 2005, 2009; Hawkins & Hattory, 2006; Hawkins et al., 2008; Tsimpli, 2003; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2008) proposes that acquisition of uninterpretable features (e.g., agreement features of person, number, and gender) is restricted to the critical period. Once L2 learners pass their critical periods, there is no access to these features based on the universal grammar (UG) inventory for L2 acquisition. The interpretability hypothesis depends mostly on the presence or absence of uninterpretable features before the critical period, which plays a significant role for L2 learners throughout their L2 learning process.

For instance, Tsimpli and Dimitrakopoulou (2007) provided an overview of the *interpretability hypothesis*, which is a minimalist approach to L2 acquisition. This hypothesis allows for the classification of the statuses of features that are rarely accessible to resetting in a typical L2 acquisition process. The interpretability hypothesis depends on two factors: (a) constraints on the learnability of the features and (b) whether the features can be reset in the grammar. The authors indicated that UG principles and operations are accessible in SLA, but the formal features of the target language that are not represented in the L1 or have a dissimilar context create learnability difficulties.

Tsimpli and Dimitrakopoulou (2007) investigated 48 learners of English and a control group of 26 native speakers of English. The experimental sample was categorized into two groups: an intermediary group of 21 participants and an advanced group of 27 participants. The study consisted of 51 sentences, which included 21 fillers that tested their knowledge of the accessibility of resumptive pronouns embedded within interrogatives. The participants were able

to see each sentence on the screen for a total of 5 seconds and heard a recording of the sentence simultaneously. Participants were asked to identify the correct choice in their judgment regarding whether the sentence was certainly grammatical or uncertainly grammatical, and a not sure option was provided as well. The overall results were unsurprisingly illustrative. As the authors had anticipated, the control group rejected the presumptive pronoun in sentences that were not grammatically correct and accepted the gap in the grammatical phrases. However, the two groups of learners differed significantly from the native-speaking group in most of the conditions. Intermediate learners considerably underperformed the native speaker group in all sentences that were not grammatically correct.

Tsimpli and Dimitrakopoulou (2007) suggested that the *interpretability hypothesis* can account for the non-target use of L2 pronouns in interrogative contexts. However, the question remains whether it can also account for other syntactic features, such as the *wh*-interrogatives and subject verb agreement that learners face in language classes. Tsimpli and Dimitrakopoulou (2007) suggested two important implications that can be learned from this study: (1) the role of logical forms—interpretable and uninterpretable features in SLA that cause acquisition issues for learners in the later phase of learning the target language—should be tested; and (2) the use of the resumptive agreement on the verb or clitic pronouns in the L1 can be transferred as a parametric option to the developing L2 grammar. However, if subject–verb agreement in L2 verb forms and clitic pronouns is not available, language learners force the resumptive option on English L2 pronouns in questions based on a process of morphological misanalysis of these L2 items.

An important study that examined grammatical subjects in Greek and Italian is that of Tsimpli et al. (2004). The authors claimed that, after the critical period, the native speaker of a

language is steady about his or her competence. Tsimpli et al.'s (2004) hypothesis mainly concerned how syntactic attrition assumes morphosyntactic features that are interpretable at the LF interface but leaves unaffected uninterpretable features, which regulate parametric syntax (Sorace, 2000). The hypothesis by Tsimpli et al. (2004) relied on the following rules: First, once the critical period is ended, a native speaker of a language is in a steady state concerning their linguistic competence; this cognitive state does not consider optional syntactic processes (Chomsky, 1995, contra, e.g., Grimshaw & Samek-Lodovici, 1998). Second, syntactic computation motivated by a set of uninterpretable features that regulate parameters is flexible and thus does not permit top-down effects (e.g., the influence of interpretative properties) on syntactic derivations. Third, the LF interface and the representation it generates is not integrated, contrasting with the process of syntactic derivation (cf. Platzack, 1999). Therefore, interpretable features at the LF interface are exposed to attrition (p. 263). Data were collected from 20 Italian near-native speakers of English, 19 Greek near-native speakers of English, 20 Italian controls, and 20 Greek controls. Greek and Italian speakers of English spent six years of residence in Great Britain, used L1 and L2 in daily contexts, and their level of English L2 was almost native in accordance with White and Genesee's (1996) criteria, which encompasses advanced performance in morphology, syntax, vocabulary, fluency, and pronunciation. The evaluation of these levels was based on orally produced data in the L2, which was subsequently evaluated by two independent judges who were native speakers of that language. The assessment was plotted on a scale for each of the evaluated elements. Tsimpli et al. (2004) slightly lowered the selection threshold of near-native participants because Britain is not a bilingual country compared to Canada, where Genesee and White conducted their study. Consequently, the authors noted the difficulty of finding near-native competence, especially at the level of pronunciation in the

L2. Comparison group participants lived in Italy and Greece and had minimal to no knowledge of English.

The study consisted of two tasks. A production task, in which the participants were instructed to form a sentence encompassing a certain verb, a noun phrase, and an adverbial expression. The scattered phrases were presented on the screen to participants, along with a picture demonstrating the story designed to be explained by the phrases. The participants were asked to create a sentence starting with the phrase "Did you hear that …?" There were 15 sentences in which the subjects were indefinite (e.g., a building collapsed because of an explosion); in the remaining 15 sentences, the subjects were definite (e.g., the Wimbledon tournament started in bad weather).

An image verification task in which the researchers inserted the subject into a sentence with three images (presented randomly for each subject) was used. The participants were then instructed to distinguish which of the three pictures correctly corresponded to the meaning of the sentence. The subject of the main clause was always a noun phrase; the subject of the subordinate clause could be either an overt pronoun or a null subject. The results of this study revealed the presence of attrition effects in the production of pre-verbal subjects in the Greek group. Italian speakers, however, exhibited attrition effects in the interpretation of overt pronominal subjects. The results for the production task revealed that the experimental Greek group selected the pre-verbal subject position for both definite and indefinite subjects, outperforming the controls. The experimental and control groups differed significantly in the production of pre-verbal definite subjects. There was also a definiteness effect in the within-group analysis of the data from the experimental group. This understanding, according to the authors, related to the default interpretation of a definite subject as a topic, which the authors

considered as a universal (semantic/pragmatic) condition that is affected by syntactic attrition. Furthermore, the results of the picture verification task showed that the Greek experimental group had an increased indeterminacy, with participants selecting "both" old and new references in their elucidation of both pre-verbal and post-verbal indefinite subjects compared to the controls. Nonetheless, the results also revealed that both groups displayed a comparable preference for the "old" referent interpretation of pre-verbal indefinite subjects. The results support Tsimpli et al.'s (2004) original assumption about the nature of syntax attrition. Precisely, they suggest that there was no evidence of attrition in either Greek or Italian native speakers in properties of the syntax of "subjects" to be ascribable to the parameterization of purely formal or uninterpretable features. However, the results exhibit attrition in the two experimental groups related to the distribution and interpretation of subjects that is attributable to syntactic, pragmatic, or interpretive characteristics. Ultimately, the authors suggested that experiments can be developed to help produce quantitative results on attrition among speakers who continue to make active use of their L1. There is no evidence that L1 transfer had a significant impact on the study's findings, and the researchers did not infer that L1 transfer was the reasoning behind the data interpretation.

The *failed functional features hypothesis* was a predecessor to the *representational deficit/interpretability hypothesis*. It assumes that an L2 learner's functional system is inhibited by what is available in their L1; hence, they are always impaired depending on the nature of their L1 system (Hawkins & Chan, 1997; Hawkins, 1998, 2001). It rejects the possibility of UG restructuring during L2 development. Namely, according to Hawkins (1998, 2000), a subset of uninterpretable features will fail (i.e., be non-acquirable and thus absent) permanently during SLA.

For instance, Hawkins and Chan (1997) proposed that native speakers of Chinese (a language without *wh*-operator movement in overt syntax) learning English (a language with *wh*-operator movement in overt syntax) as a second language create mental representations for English that encompass pronominal binding rather than operator movement. Hawkins and Chan (1997) hypothesized that this disagreement from native-speaker representations influenced by the inaccessibility of the failed functional features hypothesis. The authors selected the Chinese experimental participants and the French control participants on the basis of performance on a general proficiency test. The test consists of multiple-choice listening test and a multiple-choice grammar test, each with 100 items. The possible total score is 200. The authors divided the leaners into three levels elementary (scores in the range 105-20), Intermediate (scores in the range 135-50), and advanced (scores in the range in the range 170 and above). The native speakers of English were assigned in the advanced level because they scored in advanced range in the Oxford Placement Test. The participants in Hawkins and Chan's study were L2 learners of English in Hong Kong. This study included seven groups of participants: (a) three experimental Chinese groups at different age and proficiency levels (147 participants) which were divided into three levels (elementary 47 participants, intermediate 46 participants, and advanced 54 participants), (b) three groups of native French-speaking participants at comparable age and proficiency levels to the Chinese groups to act as controls for the reliability and validity of a grammaticality judgment test (113 participants) which were divided into three levels (elementary 33 participants, intermediate 40 participants, and advanced 40 participants), (c) and one group of native speakers of English to act as a control for the reliability of the tokens used in the test (32 participants). Hawkins and Chan found that 22 of the 47 elementary Chinese participants (which was significantly less accurate than all groups) accepted ungrammatical sentences encompassing

resumptive pronouns as correct in 73% or more cases. Of these 22, 18 corrected the subjacency violations by presenting a resumptive pronoun in 75% or more cases. In contrast, of the 18 participants who recognized ungrammatical sentences including resumptive pronouns in 53% or fewer cases, only three introduced resumptive pronouns to correct subjacency violations in more than 50% of cases. One limitation of this study is that elementary participants who seem to be able to correct subjacency violations by including a resumptive pronoun do not necessarily recognize a subjacency violation; they are inserting resumptive pronouns where they would be required in their native Chinese. Hawkins and Chan suggest that uninterpretable f-features (i.e., agreement features of person, number, and gender) have maturational constraints (i.e., critical period effects). Consequently, the uninterpretable f-features are not instantiated in L1 before the critical period, and the features do not become accessible later. In other words, the features become inaccessible in the UG inventory for L2 acquisition.

The local impairment hypothesis was also a predecessor to the *representational deficit/interpretability hypothesis*. It assumes that functional projections are attested in L2 but that features concomitant with functional heads are permanently impaired regardless of L1 (Beck, 1997, 1998; Eubank et al., 1997; Eubank & Beck, 1998). Consequently, the abstract feature strength does not transfer over from the L1.

Beck (1998) provided the outcomes of a response-latency experiment involving native English learners of German. The theoretical background of this study encompasses various approaches regarding language transfer observations by Schwartz and Sprouse (1994, 1996), the gradual-development view of Vainikka and Young-Scholten (1994, 1996), the under-specification view of Eubank (1994), and the local-impairment view (Beck 1997, 1998; Eubank et al. 1997; Eubank and Beck 1998). The study found that adult L2 competence includes a

selective and local deficit that influences head movement. The order of the English language is subject-verb-object. By contrast, the order in German is not only based on the head-final structure but also shows the verb-second effect. Data were collected from 48 English learners of German: 21 women and 27 men with an average age of 23 years. The study also consisted of a control group of 27 native speakers: 12 men and 15 women with an average age of 26.25 years.

Beck (1998) categorized exposure time to the German language according to the following criteria: one German language class taken for one semester at the college level, one year of German learning in high school equaled one semester of learning German at the university, two months of exposure in the country equaled one semester of learning German at the university, and one month of exposure within the country equaled one semester of German learning in college. There was also a control group of German university students, some German high school students, and others from the German community. Beck (1998) did not indicate the exact number of school/community participants. Beck (1998) designed a task based on stimuli comprised of sentence matching (SM) and translation (ET) tasks. L2 German participants whose L1 was English participated in both tasks, but the control group was presented with the SM task only. The SM task encompassed 30 sentences, 15 of which were ungrammatical, and the remaining 15 sentences were grammatical in the SV-Adv-O and *S-Adv-VO surface orders.

The findings indicated that L1 German speakers selected more grammatical inversions that contained raised verbs than ungrammatical ones that contained unraised verbs. By contrast, the results for the L2 grouping revealed that the learners in the overt agreement group made no distinction between raised verbs and unraised verbs. However, when the learners were divided "based on subject-verb inversion, a nonaccidental differentiation showed up only for the no-inversion group; the three inversion groups did not differentiate between raised-verb and

unraised-verb stimuli" (p. 332). The authors suggested that the results showed that less advanced groups can only project VPs, which is in line with the gradual development view of Vainikka and Young-Scholten (1994, 1996). The authors also indicated that only one hypothesis accounted for the advanced group results in developmental contexts—the local impairment hypothesis.

One limitation of the study is that it might have been preferable to include only students from one university or one school (who shared an exact level of exposure to L2 German) rather than to include students from different places and with different levels of proficiency. This introduced a huge variance in language exposure, which may have led to unbalanced and biased results.

Eubank et al. (1997) study provided evidence to the local impairment hypothesis. The authors argued that White (1990/1991) and Schwartz (1993) proposed parametric values that control verb raising transfer into initial L2 representation based on the transfer of L2 development. Eubank et al. (1997) also claimed that reaction-time research by Eubank and Grace (1996) specified that transfer does not occur and that the value governing the raising is entirely underspecified. The reason, according to Eubank et al. (1997), involves excessive level of extrapolation. Data were collected from 39 native speakers of Mandarin and one Cantonese speaker, all of whom were not native speakers of English. They also included a control group of native English speakers comprising 28 participants enrolled in a single class called general linguistics. Eubank et al. (1997) designed this task as an extra quiz assignment with an automatic grade of A to encourage participants to complete the task. Eubank et al. (1997) eliminated all participants over the age of 50 years; they assumed that older participants could be disadvantaged in learning an L2 compared with significantly younger participants. The task consisted of two parts. First, the authors asked all participants to fill out a questionnaire. Second,

they asked the participants to perform truth-value and translation tasks. The participants were allowed to inquire about the meaning of unknown words that they might encounter during the task but could ask no questions involving stimulus sentences or a general understanding of the narratives.

The non-native speakers performed the task individually, and all the native speakers were asked to complete the task in one class setting. The results from the native speakers revealed that all the native speakers' responses were 100% incorrect on the unraised control items and 91% incorrect and 9% correct on the raised items. However, the non-native participants showed comparable performance with regard to unraised control items, scoring 94.9% incorrect and 5.1% correct responses. Conversely, the non-native group demonstrated a broader range of responses to the items raised, with 74.1% incorrect and 25.9% correct responses. The results confirmed the first prediction of the authors, which was that native and no-agreement non-native speakers should be related significantly to their L1 status. By contrast, the results were discordant with the second prediction, which was those native speakers and the agreeing non-native speakers' responses should be significantly similar to those of the native speakers.

Overall, Eubank et al. (1997) claimed that different perspectives based on the transfer of L2 development can be unpredictable because they limit L2 development to more conservative representations (i.e., no movement). The researchers proposed an interpretation that was consistent with the results of their study. It is the assumption of Beck's local impairment hypothesis, which suggests that verb raising may always be problematic for adult L2 learners because of extinctive extrapolation, as indicated above.

2.2.2 The Full Transfer/ Full Access

The FT/FA model (e.g., Schwartz, 1998; Schwartz & Sprouse, 1994, 1996) that the first stage of L2 acquisition is considered to be the last stage of L1 acquisition (FT) (Schwartz and Sprouse, 1996, p. 40). The hypothesis posits that all L1 grammar that encompasses lexical and functional categories and feature values concomitant with functional categories, except the phonetics matrices of lexical, is accessible by L2 learners in the initial stages of L2 acquisition. L1 transfer will also reform the L2 system based on the input that L2 learners experience when exposed to the target language. However, obscured input leads to fossilization. Schwartz and Sprouse (1996) investigated the FT/FA model.

For instance, Schwartz and Sprouse (1994, 1996) investigated the FT/FA model, which proposes that the first stage of L2 acquisition is considered to be the last stage of L1 acquisition (Schwartz and Sprouse, 1996, p. 40). Schwartz and Sprouse also drew some important views from several models, such as the minimal trees hypothesis (no transfer of functional categories) of Vainikka and Young-Scholten (1994, 1996) and the weak transfer hypothesis (no transfer of the values associated with functional categories) of Eubank (1994). Schwartz and Sprouse (1994, 1996) reviewed several studies and found that the minimal trees hypothesis is useful at the early stages of L2 acquisition, and they assumed that the weak transfer hypothesis depends on the morphosyntactic empirical bases that drive this approach. They also proposed that transfer to the L2 includes the syntactic structures and semantic functions that are essential for natural grammar. Data were mainly collected from a Turkish participant with the pseudonym “Cevdet” who grew up in a suburb of Ankara as a monolingual Turkish speaker. Cevdet completed nine years of formal schooling in Turkey before seeking employment in Germany in October 1981. Schwartz and Sprouse (1994, 1996) obtained their transcripts from the European Science

Foundation (ESF) that encompassed interviews with Cevdet conducted between July 1982 and August 1984. The ESF researchers reported that Cevdet's level of German is "little." Cevdet received 10 hours of German language training and 20 hours of vocational and social instruction per week on a special program sponsored by the German government. For three months, Cevdet met with a social worker for three hours every week. Cevdet worked at a furniture company from September 1983 to June 1984. The language used in the workplace was German. He worked as a roofer from June 1984 to June 1985; again, the language in the workplace was German. Cevdet was a member of an integrated sports teams outside of work. Cevdet continued to live in an apartment with his parents and brother during this time. Cevdet spoke Turkish with his family at home. The exposure data reveals the extent to which he was exposed to German in naturalistic contexts as well as the quality of his exposure. Schwartz and Sprouse's (1994, 1996) target structures concerned German word order and nominative case. Schwartz and Sprouse (1994, 1996) specified that both German and Turkish have OV word-order patterns in embedded clauses (object–verb; nonfinite verb–auxiliary verb); however, the V2 phenomenon (movement of the finite verb to the second position [complementizer]) in matrix clauses partially obscures these patterns in surface syntax in German but not in Turkish. More specifically, Schwartz and Sprouse (1994, 1996) examined three grammatical structures of Cevdet's data: 1) the position of the finite verb (thematic and auxiliary/modal verbs); 2) the fronting of the non-subject constituent X; and 3) the type of subject (pronominal or non-pronominal). Schwartz and Sprouse (1994, 1996) categorized Cevdet's data into three stages. In stage 1, Cevdet's interlanguage system does not allow phrases in which the subject does not precede the verb. In stage 2, utterances in which the verb precedes a non-pronominal subject are deficient. In stage 3, Cevdet's grammar still differs from German. According to Schwartz and Sprouse (1994, 1996),

German is a strict V2 language because it does not allow adjunction to complementizer phrases. Cevdet's data patterns, on the other hand, accept such phrases. Ultimately, the main conclusions of the study by Schwartz and Sprouse (1994, 1996) were that L2 learners have access to the L1 grammar from the start of L2 acquisition; exposure to target language input causes restructuring or approximation of the L2 system, and obscurity in input causes fossilization.

2.2.3 Feature Reassembly Hypothesis

The FRH (e.g., Hwang & Lardiere, 2013; Lardiere, 2008, 2009) advances the FT/FA model (e.g., Schwartz, 1998; Schwartz & Sprouse, 1994, 1996). It posits that assembling various lexical items of an L2 requires learners to reconfigure features represented in their L1 into new types of lexical items in their L2. The learning tasks are based on the ability of learners to reconfigure assembly features that they use in their L1 into new assembly features in the target language. Hwang and Lardiere (2013) suggested that native-like attainment is feasible only for some learners, and that the presence or absence of certain features will not affect the process of mastering the L2 as native-like speakers. Likewise, the authors found that seven of the advanced learners were among the correct response type, and one of them scored 100% correct responses. This led the authors to conclude that eventual native-like attainment is feasible for some learners.

Lardiere (2007, 2009) provided some observations into the FRH. To test this hypothesis, Lardiere (2009) compared the use of assembly features with plural markings in English, Mandarin Chinese, and Korean. The author also examined learners' use of *assembly features* regarding the nominal mapping parameter and the role of UG in L2 acquisition. Lardiere (2009) asked several important questions: "With which functional categories are the selected features

associated in the syntax, and how might this distribution differ from the feature matrices of functional categories in the L1? In which lexical items of the L2 are the selected features expressed, clustered in combination with what other features? Are certain forms optional or obligatory, and what constitutes an obligatory context? More specifically, what are the particular factors that condition the realization of a certain form (such as an inflection), and are these phonological, morphosyntactic, semantic, or discourse-linked?" (p. 175). Lardiere (2009) argued that it could be difficult for L2 learners to address these questions without fully understanding the categorization of these features and knowing explicitly how they are assembled in the lexical item of the target language. This suggests that researchers should understand that learning tasks are based on the ability of learners to reconfigure assembly features that they use in their L1 into new assembly features in the target language. However, it would be interesting to examine how Arabic language learners reconfigure assembly features that are represented in their first languages into the Arabic language.

Ionin and Montrul's (2010) study examined the predictions of the FRH. Ionin and Montrul's (2010) suggested that many languages use either bare plural, such as English, or definite plural, such as Spanish, to express generic interpretations. Data were collected from 24 L1-Spanish English learners and 29 L1-Korean English learners, as well as 19 L1-English controls. The authors matched the Spanish and Korean groups for proficiency, as assessed by a forced-choice cloze test, in which every seventh word was omitted and substituted by three options, one of which was suitable for the context. The authors predicted that Spanish-speaking learners of English would transfer the interpretation of definite plurals from their native language. The findings of the truth-value judgment task confirmed this prediction. Their reasoning was that the 24 Spanish speakers acquired the generic interpretation of English definite

plurals to a superior level than speakers with equivalent skills in the 29 Korean learners of English, a language that did not use articles. The results indicated that the interpretation of the plural noun phrase in L2 English was due to L1 transfer. Similarly, recovery from L1 transfer was feasible.

Further, Montrul (2010) examined whether L1 influence in adult L2 learners is similar to L2 influence in the L1 of early bilinguals. To investigate this effect, the author tested learners' knowledge of Spanish clitics, clitic left dislocations, and differential object marking. Spanish has weak pronouns or clitics, such as *me*, *te*, *lo*, *la*, and *le*, which differ in case: accusative is used for direct objects and dative is used for indirect objects, whereas the clitics must attach to a host, which is the verb in Spanish. Data were collected from 72 L2 learners of Spanish, 67 Spanish heritage speakers, and 22 monolingual native speakers of Spanish (not all participants completed all tasks). All learners were instructed to complete a short survey and take a brief Spanish proficiency test. The L2 learners were all native English speakers raised in English-speaking families, and they began learning Spanish as a foreign language between the ages of 12–25 years. Two tasks were conducted. The first task was based on an oral narrative that aimed to elicit all instances of clitics from the participants. Participants were instructed to describe 14 color pictures narrating a famous children's story presented in a PowerPoint presentation. The results of the oral task indicated that the heritage speakers and the native control group produced 60% clitics and 40% noun phrases, whereas the L2 learners produced significantly fewer clitics (21%) and noun phrases (79%) (Montrul, 2010, p. 306).

The second task that Montrul (2010) asked learners to perform was the acceptability judgment task (AJT). The goal was to supplement the scores gathered in the oral task, including 45 grammatical and 45 ungrammatical sentences formed spontaneously and some sentences that

were not produced in the oral task. All 90 sentences were divided into 18 sentence types, with five response options for each type. The results of the AJT task showed that L2 learners and heritage speakers were aware of the syntactic constraints and possibilities of object clitics in Spanish. However, heritage speakers outperformed L2 learners with clitic climbing. Similarly, the researcher indicated that heritage speakers were more successful than L2 learners with clitic left dislocations in structures that interact with semantics and pragmatics. Nevertheless, both groups differed significantly from native speakers in ascertaining the ungrammaticality of these sentences; L2 learners outperformed heritage speakers, particularly those who had the lowest level of competence. This signifies that L2 learners are restricted by their L1 and accept subject-verb-object sentences rather than sentences with clitic left dislocation constructions, so this goes against the FRH predictions according to which absence or presence of a feature in L1 does not make a difference.

The missing surface inflectional hypothesis (MSIH) that was a predecessor to the *FRH* predicts that the feature system is temporarily impaired at the surface level because it may be arduous to map out the surface forms and underlaying abstract features, irrespective of the presence or the absence of a feature in an L1 (Lardiere, 1998, 2000; Prévost & White, 2000; De Garavito & White, 2002). The impairment is based on whether an L2 learner can identify and construct the complex mapping accurately. This concept conforms to the UG FT/FA (Schwartz & Sprouse, 1994, 1996).

Prévost and White (2000) mainly examined the missing surface form hypothesis. Prévost and White (2000) collected data in the form of the spontaneous production of two adult French learners and two adult German learners. Prévost and White collected spontaneous production data from two adult French learners and two adult German learners. Abdelmalek and Zahra,

native speakers of Moroccan Arabic, were interviewed monthly over 3 years. Abdelmalek and Zahra immigrated to France from Morocco and were exposed to French; their initial interviews were conducted 1 year after their arrival in France. Two German learners who had immigrated to Germany, Ana and Zita, spoke Spanish and Portuguese as their mother tongues, respectively, and were interviewed in the ZISA project (Clahsen et al., 1983) 3 months after immigration. Their interviews occurred once a month for less than 2 years. The task was based on spontaneous output data collected longitudinally from adults learning French L2 and German L2 in naturistic settings. The properties that Prévost and White aimed to investigate were related to verbal functional projections. Verb (V) features must be checked in Infl (I) (Chomsky, 1995). "If V features are strong, the verb raises overtly to I for feature-checking purposes. If V features are weak, the verb raises covertly (after having been spelled out). Several syntactic consequences result: in languages like French and German, V features are strong; finite verbs raise, resulting in well-known alternations between the positions of finite and nonfinite verbs" (Prévost & White, 2000 p. 104). The results indicate that finite forms do not appear in non-finite contexts and that learners exhibit syntactic reflexes of finiteness. In addition, the inflected forms generally exhibit correct agreement. The authors suggested that L2 learners distinguish finiteness and agreement at an abstract level instead of being impaired in this domain, which supports the MSIH.

2.3 L2 Transfer Studies

At least four L2 transfer models speculate about L2 and L3 learning processes: (1) the *cumulative enhancement model* (CEM); (2) the *L2 status factor model* (L2SFM); (3) the *typological proximity model* (TPM); and (4) the *linguistic proximity model* (LPM). The L2 transfer models will be discussed in detail below.

2.3.1 The Cumulative Enhancement Model

The CEM (e.g., Berkes & Flynn, 2012; Flynn et al., 2004) specifies that L1 is not the only source of transfer between the first, second, and third languages, but it typically depends on the positive and cumulative influence of preceding acquired languages on the learners' L3. The transfer process is selective. Therefore, the CEM may affect the learning process, where only positive transfer but no negative transfer occurs or where the transfer will remain neutral.

Berkes and Flynn (2012) presented L2 as inadequate for understanding L3 acquisition and how specific forms and grammatical structures that learners acquire during L3 learning are formed. The L3 depends on the initial state hypothesis, whereby language-specific grammar is acquired based on the accessibility of *UG* in the minds of learners. The CEM is an attempt to clearly explain multiple language acquisitions. The authors indicated that German is a head-initial language such as English and Hungarian, but they mentioned that concerning the complementizer order of relevant words, German presents a typical SOV word order like head-final languages, such as Japanese.

Berkes and Flynn's (2012) study compared the output of three different clauses: lexically specified headed relatives, lexically unspecified headed relatives, and free relatives by three groups of learners. The first group consisted of 42 German speakers with L2 English; all learners were in Hungary, and all learners were exposed to English for 10 years. The second group encompassed 36 Hungarian students in L2 German and L3 English. Most learners have also learned English and German for a decade. The participants were asked to reproduce 12 target sentences and 9 fillers. The authors ensured that the participants were able to understand lexical items implemented in stimulus sentences before the real experiment. This is achieved through teaching/testing the knowledge of lexical items before implementing the task so that the results

are not affected by the lack of the lexical items but only based on syntactic factors involved in the maturation process of the language-specific grammar. The findings revealed that German L1 and Hungarian L1 acquiring L2 English and German L2 acquiring L3 English at three levels of proficiency demonstrated increased facilitation following the acquisition of each new language. Furthermore, the progression of syntactic knowledge in L3 acquisition cannot be clarified based on a structural transfer from the final language learned. Ultimately, it is not always the case that the final language learned influences the development of underlying grammatical structures.

As suggested by Flynn et al. (2004), examining adult L3 acquisition is vital because it enables new understanding of the processes of language acquisition in general. Flynn et al. (2004) argued that it is not possible to learn about the processes of language acquisition by studying L1 and L2 acquisition. Their study addressed two main research questions: whether the L1 influenced L2 and L3 acquisition, and whether the L1 assisted language learners' successful acquisition of the L2 and L3. They argued that it is difficult to determine whether all languages are susceptible to the L1 and whether the structure of the L1 alone specifies the grammar learning process for the L3. Data were gathered from two groups composed of 33 participants. Japanese was the L1 of the first group, and Spanish was the L1 of the second group. Both groups were learning English as their L2. Proficiency in English varied between participants, with 7 at the beginner level, 14 at the intermediate adult level, and 12 at the advanced level. Data were also collected from a group of children who were simultaneously learning English and Russian. The group of children comprised 10 beginners, 12 intermediate, and 9 advanced level participants. Moreover, there was an L3 group comprising 33 adults and 30 children who spoke Kazakh as their L1, Russian as their L2, and English as their L3. The authors implemented the elicited imitation task to compare the production of three relative clause factors. The first factor

was a lexical head with semantic content. The second factor was a lexical head without semantic content, and the third factor was a free relative clause. The factors were selected because English (both adult groups' L2) and Japanese (the first adult group's L1) have free relative patterns preceding lexically headed relative clauses. English and Japanese are known as the head-final languages. However, the L1 for the second adult English group was a head-initial language. The results revealed that patterns of acquisition shown by the group that had Kazakh as their L1, Russian as their L2, and English as their L3 matched those shown by the group that had Spanish as their L1 and English as their L2. However, the patterns of acquisition did not match those shown by the group that had Japanese as their L1 and English as their L2. The results suggest that L1 transfer does not always influence the transfer of grammar structures between languages. Nonetheless, the findings raised the question of whether the most recently learned language remains the one that affects the transfer to the next language. According to Flynn et al. (2004), prior knowledge of any language is essential for future language acquisition because the acquisition of language is accumulative, and the transfer from the L2 to the L3 is real and does not depend on the L1 alone. The development of syntactic knowledge in L3 acquisition cannot be clarified based on a structural transfer from the final language learned.

2.3.2 The L2 Status Factor

The L2SFM (e.g., Bardel & Falk, 2007, 2012; Falk & Bardel, 2011) proposes that L1 has no role in influencing L3 learning processes but states explicitly that L2 influences L3 acquisition whether the transfer is negative or positive. The reason is that there are advanced parallels of sociolinguistic and neurocognitive resemblances between L2 and L3 that are different from L1 because of several factors (e.g., the learning settings, age of onset, learning outcome, and the practice of learning strategies) (Falk & Bardel, 2010, 2011).

Bardel and Falk (2007) studied the placement of sentence negation in L3 acquisition. One example that supports the author's argument is the study by Håkansson et al. (2002), who noted that the *developmentally moderated transfer hypothesis* that encompasses transfer in the *processability theory* states that there is no syntax transfer between L2 and L3. The researchers claimed that both thematic and nonthematic verbs are raised to a complementizer head, giving rise to the so-called verb-second (V2) word order rule shared by all Germanic languages except English. Data were gathered from two groups of participants. The first group included five Swedish L3 learners who were recorded during the group's lessons. Three learners had non-V2 English as their L2 and one V2 as their L1 (Dutch). The other two learners had a V2 language (German or Dutch) that was robust in L2 and a non-V2 language (English or Hungarian) in L1. The second group had four learners whose L3 output was recorded individually in Dutch or Swedish. Two learners had a V2 language as their L1 (Swedish) and a non-V2 language as their L2 (English). Both learners had a language other than L1 (Italian or Albanian) that was not V2, and a V2 language as an L2 (German/Dutch or German only). The learning situation was formalized and proceeded independently from the linguistic community. The grounds for separating both groups are that in the five learners in the first group, L1 is a V2 language but L2 is not, whereas in the second groups of four learners, L1 is a non-V2 language and L2 is a V2 language, which assisted the researchers in examining a nontransfer hypothesis or hypotheses relating to L1 or L2.

The authors collected only complete sentences that contained a subject, verb, and negation. The results of the first group revealed that Dutch and German learners produced 12 instances of post-verbal negation out of 15 negated sentences. However, the 3 English learners produced only 4 out of 14 negated sentences. The results of the second group indicated that L1

(Italian or Albanian), L2 (German/Dutch or German only), and L3 (Swedish or Dutch) learners produced 71 utterances with post-verbal negation only. The other two learners with L1 Swedish, L2 English, and L3 Dutch produced 28 utterances with pre-verbal negation and 17 with post-verbal negation. Finally, the data revealed that L2 structures can be transferred more easily from L2 to L3 than from L1 to L3. The authors claimed there was no clear evidence of transfer from L1 to L3, but instead, the typological proximity seemed to favor transfer from L2 to L3. It was not clear whether L2 blocked the transfer from L1 to L3, or whether the syntactic structure had to be transferred from L1 to L3 in most cases. Similarly, the results revealed that the L2 status factor is more potent than the typology factor in L3 acquisition. That is, the typological proximity with respect to L1 and L3 was not sufficient to allow the first group to correct the L1 transfer. However, the results indicate the positive transfer of the negative/V2 placement from L2 to L3 in groups D and G. The results therefore conflict with both *processability theory* and *developmentally moderated transfer hypothesis*, as suggested by Håkansson et al. (2002).

In another study, Falk and Bardel (2010) investigated whether a learner's L2 influences only L3. To test this assumption, the authors examined the placement of object pronouns—in both main and subordinate clauses—in a grammatically judgment/correction task in French, English, and German. The three languages differ in terms of the placement of object pronouns, where French considers a pre-verbal and English a post-verbal placement of object pronouns, and the object pronoun could be placed in both main and subordinate clauses in English and French. However, German treats the placement of an object pronoun differently because the pre-verbal of object pronouns is placed in the subordinate clause, but the post-verbal of object pronouns is in the main clause. Data were collected from 22 learners who had French as L1 and English as L2, and from 22 learners who had English as L1 and French as L2. The author

interviewed all learners for two purposes: to gather general information about the learners and to decide on the appropriate level of learners. The learners were exposed to their L2 (English or French) for about 4 to 6 years. The level of the learners was intermediate in German as an L3. The results of the main clause in this study indicated that the English L2 group had 95.2% of the correct answers. However, the Level 2 French group was more accurate (63%), but what is interesting is the high number of errors. The findings showed that there were approximately 111 cases (37%) in which French L2 participants rejected grammatical sentences and then replaced them with ungrammatical ones that corresponded to the French word order. This was also the case for 15 of the English L2 group (4.8%). This result led the authors to conclude that the English L2 group had acquired this structure, unlike the French L2 group. The conclusion here is that the L1 effect on L3 was not active in this study. The reason is that the L2SFM, which depends mostly on how L2 and L3 resemble each other rather than L1 and L3, concerns the learning situation, metalinguistic knowledge, learning strategies, and the level of knowledge of the language process. In this case, the transfer from L2 to L3 was either positive or negative. Falk and Bardel (2010) specified that the distribution of acceptances and rejections was related to the fact that negative transfer was from English L2 in *U:en* (an ungrammatical sentence with a word order that corresponds to the English), and that positive transfer was from English L2 in *G:en* (a grammatical sentence with a word order that corresponds to the English). In addition, the authors found evidence for negative transfer from French L2 in *U:fr* (an ungrammatical sentence with a word order that corresponds to the French) and positive transfer from French L2 in *G:fr* (a grammatical sentence with a word order that corresponds to the French) and suggested that when learners reach a superior degree of competence in the L2, they are able to transfer the interlanguage structures to the L3, regardless of the correctness of the interlanguage structures in

the target language. The authors concluded that if the level of structure similarities between the L2 and L3 is high in the L2, the transfer from the L2 to L3 is much stronger than a transfer from the L1 to L3 despite various factors (e.g., onset, outcome, learning situation, metalinguistic knowledge, learning strategies, and degree of awareness in the language learning process).

2.3.3 The Typological Proximity Model

The TPM (e.g., Rothman, 2010, 2011, 2013, 2015; Rothman & Cabrelli Amaro, 2010; Rothman et al., 2015) assumes that the L1 and L2 transfers occur in L3 acquisition but that there are some variances between the CEM and TPM. First, it is feasible that both negative and positive transfers will occur. Second, the TPM specifies the positive or negative transfer regulated by the typology/structural similarity of the languages concerned. The parallels between the target languages are evaluated by linguistic cues in the input and the language acquisition device (LAD). Third, Rothman (2015) assumed that LAD can only foresee structurally comparable languages at a universal level, irrespective of the structure resemblances. Fourth, the LAD is directed by various associated linguistic cues (lexical, phonological, morphological, syntactic) to identify the former L1 and L2 systems, which are akin structurally to the target L3. Lastly, the transfer is full, whether it is from L1 or L2, or emerges at an early level of acquisition, which is parallel to the findings of Schwartz and Sprouse (1996).

Rothman (2010) was the first study that set out to test the predictions of the TPM. Rothman (2010) studied L3 initial state transfer only based on explicit language pairings (e.g., syntactic word order and relative clause attachment preference in L3 BP). Two goals were addressed in this study. The first was to identify the influence of the L1 or L2 syntax transfer on the early stage of L3 acquisition, and the second was to elucidate which one of both L1 and L2

was selected to transfer the target structures to the L3. Rothman suggested that typological proximity among languages is the definite variable for syntactic transfer. Rothman observed data of the initial phases of L3 for participants who were learning Brazilian Portuguese (BP), who were either native speakers of English or Spanish, and had achieved a high level of proficiency in English or Spanish as a second language. The author conducted two experiments. The first experiment was a grammatical judgment task with corrections. He examined syntactic knowledge of word-order restrictions in declaratives and interrogatives. He asked participants to read the target phrases to mark the ones that were correct; if there were incorrect sentences, participants were asked to verify and fix the errors. However, when participants did not know exactly how to correct mistakes, they were told to clearly state that they did not know the correct answers. The total number of examples was 100, and they were distributed into 60 target sentences and 40 fillers.

The second experiment was based on a matching task. This experiment contained relative clauses of two types, where there was either ambiguity or no ambiguity. It consisted of 50 examples, of which 20 were fillers. The participants performed this experiment on a computer and were asked to respond based on their first guess. They were told to move on to the next sentence once they were done, and the program was designed to prevent them from going back to the previous question that they had already been answered. The data were collected from five groups, which included three control groups. Ten participants were native English speakers, 10 were native Spanish speakers, and 10 spoke BP as their native language. There were two L3 groups, which consisted of 15 native Spanish speakers and 16 native English speakers who were fluent in BP. The L3 participants attended BP's summer program in Brazil. They also learned BP for at least 4 weeks and up to 5 weeks at the time of data collection. The role of the control

groups was to create norms for language transfer for both English and Spanish, and to identify the target grammatical knowledge/preference for BP native speakers. The results of this study revealed related areas of syntactic word order and the relative preference for attachment to clauses in L3 BP. The results showed that Spanish was transferred to both experimental groups, regardless of whether it was an L1 or an L2. The author stated that comparing the data from both parts of the experiment that investigating transfer patterns in multilingualism assists as an additional source of independent supporting evidence. The reason is that the acquisition of underlying target syntax word order patterns provides expansion to the selection of parsing strategies for attachment preference in ambiguous relative clauses. He suggested that his data revealed that adults could process non-native grammars like natives, which can be verified by the transfer of L2 strategies as an early hypothesis for ambiguity resolution in the BP L3 of English native speakers of L2 Spanish. He considered both findings significant because he stated that acquisition in the lifespan is feasible and led by comparable principles and mechanisms as child language acquisition.

The transfer to L3 early phase only and whether it is based on the *L1 transfer hypothesis* or the *L2 transfer hypothesis* were investigated by Rothman and Amaro (2010). For the *L1 transfer hypothesis*, the authors posited that English speakers of French and Italian as L2 and L3 would transfer the English value at both early state occurrences, resulting in an early performance advantage for the L2 and L3 French group only. However, the *L2 transfer hypothesis adopted two hypotheses:* the L2SFM (e.g., Bardel & Falk, 2007, 2012; Falk & Bardel, 2011) and the CEM (e.g., Berkes & Flynn, 2012; Flynn et al., 2004), which were explained earlier in this section. Five experimental groups were used to gather the data. L1 of English was constant across all groups. They were L1 English, L2 French, L2 Italian, L3 French, and L3

Italian. The French and Italian L2 groups had 10 and 11 participants, respectively. The French and Italian L3 groups consisted of 9 and 10 participants, respectively. The English L1 comprised 12 participants. Rothman and Amaro (2010) employed a grammatical judgement/correction task to test their participants. They also asked their participants to indicate whether a sentence was ungrammatical and to correct it if they could. The results revealed that the English and French L2 groups significantly rejected *null expletives* and *null referential subjects* and allowed *overt expletives* and *overt referential subjects*. However, both L3 groups regularly used *null expletive subjects*, *overt referential subjects*, and *null referential subjects* and excluded *overt expletives*. The L2 Italian group excluded *null expletives* about 60% of the target sentences and allowed *overt expletives*, *overt referential subjects*, and *null referential subjects*. In conclusion, the data indicated that the L3 groups were successful learners of Spanish, but that the L2 groups seemed to have transferred only from English. The researchers did not provide any concrete explanations for why L2 learners depended only on English for transfer or why they performed below the L3. Rothman (2010) suggested that the results are based on TPM, considering that Spanish was the typologically closer language. However, the results rejected the CEM and the L2SFM. Rothman (2010) elucidated two reasons behind his findings: (a) the L2 of both groups that did not transfer was predicted by the L2SFM; and (b) the English language that was more suitable for transfer was not transferred by either group despite its accessibility, as predicted by the CEM.

In the same vein, Rothman (2011) compared data in the domain of adjectival understanding among successful L1 Italian learners of English as an L2 at the low-to intermediate-proficiency level of L3 Spanish and successful L1 English learners of L2 Spanish at the corresponding levels for L3 BP. The aim of this paper was to determine which variables condition syntactic transfer. The author argued that L3 transfer is selective and, under certain

conditions, driven by the typological proximity of the target L3 measured against the other previously acquired linguistic systems. Data were collected from 60 participants. The control group included 33 native speakers of Spanish and BP (17 Spanish and 16 BP). Two L3 groups, both at the intermediate level, were included in the L3: 12 Italian natives of L2 English learning Spanish as an L3 and 15 English-native L2 Spanish learners of Portuguese as an L3. Each L3 participant was tested using both a cloze test and a general grammar test. Similarly, each student's overall proficiency in both the L2 and the L3 was nominated only if he or she tested at the advanced to near-native level for the L2 and the intermediate level for the L3. Furthermore, all participants completed an extensive linguistic history background questionnaire to identify their experiences with the L2 and L3.

Rothman (2011) study consisted of two tasks to test the participants' acquisition of the syntactic and semantic properties of Romance determiner phrases (DP). The first was a semantic interpretation task, in which the participants read a short sentence that contained a DP with either a prenominal or postnominal adjective. Two language versions were used: Spanish and BP. From the target sentence provided, the participants were asked to select the correct meaning based on two interpretations. The second task was a context-based collocation task in which the participants were instructed to read a short story and fill in, at the end of the task, either a prenominal or postnominal blank for the adjective, which was also provided. The findings revealed no significant interactions between item type and group. Similarly, no significant effect was found for item type (preposed vs. postposed) or language group. Consequently, the null hypothesis was not rejected. Rothman argued that foreseeing that the groups will perform differently is not feasible. However, he suggested that some individual variation can be seen in performance, although such variation, for both experimental groups, did not generate non-target

behavior as such. This was because the native controls exhibited similar individual participant differences, namely, all L3 individuals performed within the range of the native control individual performances. The results of the collocation task indicated that all groups performed comparably, selecting roughly the same number of correct adjective placements based on context for both preposed and postposed adjectives. The findings showed no significant interactions between item type and group. Furthermore, the analysis displayed no significant effects for item type (preposed vs. postposed) or language group. Consequently, Rothman postulated that these results may be linked to the conclusion of Experiment 1; the null hypothesis could not be rejected because the groups were not performing differently. The individual variation was obtained in Task 1, but in every case, it fell within the range of individual variation of native control participants. Hence, more studies are needed to determine accurately whether the L3 is equally typologically similar to the L1 and L2, or whether the L3 is typologically not at all comparable to either the L1 or L2. Similarly, examining similar patterns in the languages under investigation would not help linguists recognize the dynamics and how to transfer work across languages. The effective method is to test diverse patterns that occur in altered language structures to under-treated complex language structures and to discover how language learners transfer them across other languages.

The study by Rothman et al. (2015) sought to investigate two critical ideas. One idea concerned the generative L3 acquisition in which the initial state concentrates particularly on the initial morphosyntax stages. L3 data can assist with better understanding the mechanisms behind human minds and how cognitive economy limits the acquisition process more generally. The second idea the researchers needed to argue for was how cognitive economy benefited from neuro/psycholinguistic methods. The researchers gathered data from four groups of English-

Spanish speakers in which they categorized the groups based on the difference between two factors: (a) the order of acquisition of English vs. Spanish and (b) the artificial language (AL). Each group consisted of 24 participants. The first group was L1 English, L2 Spanish, with the language of training (LOT) being mini-Spanish. The second group was L1 English, L2 Spanish, with the LOT being mini-English. The third group was L1 Spanish, L2 English, with the LOT being mini-Spanish. The last group was L1 Spanish, L2 English, with the LOT being mini-English. The study encompassed a training session in the AL and a judgment task with an EEG recording. The participants were exposed to meaningful instances of the AL and looked at two pictures demonstrating a contrast such as *three expensive trucks vs. three cheap trucks* then shown written descriptions such as *the trucks are expensive vs. the trucks are cheap*. The reason was to provide some implicit training on number and gender agreements between articles, nouns, and adjectives. The training session started by presenting the articles and then moved to the full sentences. Each item was presented equally in the data, and there were some filler sentences to make sure the participants discovered the testing items. The researchers assigned about 144 sentences, based on three conditions: grammatical, number violation, and gender violation. Then the learners read the 144 sentences presented, one word at a time, using the rapid serial visual system while their brains were recorded with an electroencephalography (EEG). At the end of the task, the researchers asked the learners to perform a grammatical judgment task to identify the agreement violations made by the learners. The researchers posited that the three models would predict that all the learner groups would perform above chance levels (i.e., above 50% accuracy) with number agreement because both English and Spanish recognize this property. With regard to gender agreement, the L2 status factor predicted that only groups 1 and 2 (i.e., those with Spanish as the L2) would display above-chance accuracy with the detection of gender

violations. One limitation of this study was that the researchers did not perform the actual analyses to obtain the actual results, rather depending on their predictions (see page 11).

Hermas (2014) investigated the acquisition of both properties of the null subject parameter in L3 English, namely subject–verb inversion in declarative sentences and null expletive subjects. The aim was to investigate the nature of the grammar in the L3 initial stages to address the question: "Which of the L1 or the L2 constitutes the source of morphosyntactic transfer?" Hermas (2014) reviewed the L3 transfer, as it related to the typological primacy model, and the L1 transfer. Data were gathered from four groups, the first of which included 14 trilingual learners (advanced level in French L2/beginner in English L3). There were also three control groups, 15 native speakers of Moroccan Arabic, 25 native French speakers, and 25 monolingual speakers of American English. The author indicated that the trilingual learners had begun to learn French L2 at age 8 and English L3 by age 16. Additionally, proficiency in French L2 and English L3 was determined based on the Oxford placement tests. There were two tasks: an AJT first and then a preference test (PT) in Moroccan Arabic, French, and English forms. The AJT encompassed 12 grammatical targets (6 examples per sentence type), 12 ungrammatical variants (6 examples per sentence type), and 48 fillers. The PT involved 12 sentence pairs consisting of a grammatical and ungrammatical sentence (6 pairs per sentence type) and 54 pairs of filler matching the aggregate number of grammatical and nongrammatical items in the task. The author indicated that the results of both tasks appear to show L1 Arabic as the source of the morphosyntactic transfer in the L3 initial stages. More precisely, Arabic L1 decreed the effect of linguistic proximity, typology, and psychotypology that allegedly initiated the transfer of French L2.

Jin (2009) studied a nonfacilitative effect of L1 Chinese on L3 Norwegian regardless of the existence of an advanced L2 English grammar that represents the target feature. The author claimed that the existence of a cross linguistics effect from the typologically more distant language, for example, the influence of L1 Chinese instead of L2 English into L3 Norwegian, is the most significant issue for typology-based models. Specifically, the author examined the acquisition of objects in Norwegian L3 by Chinese-speaking advanced learners in English L2. The participants in this study comprised 40 L1 Chinese–L2 English–L3 Norwegian learners and 14 native Norwegian speakers as a control group. The author implemented grammatical judgment and sentence correction in both English and Norwegian. The tasks in these languages comprised 20 randomized written sentences, 5 of which were null object sentences and 15 were distracting. All phrases of the null object were related by topic. Null objects were spread between root clauses and embedded clauses, namely in 3 root clauses and 2 embedded clauses. Animate and inanimate discrepancies were established. More precisely, the null objects in root clauses included 2 inanimate objects, and 1 was animated. However, the null objects in the embedded clauses contained 1 that was inanimate, and the other was animated. The results showed a robust L1 effect and negligeable evidence for L2 English interlanguage transfer in the acquisition of Norwegian objects by L3 Chinese language learners. The author clarified that Chinese-speaking learners accept the L1 parameter setting when initiating the acquisition of Norwegian L3.

2.3.4 The Linguistic Proximity Model

Westergaard et al. (2017) defined the LPM as an alternative approach to the CEM and the TPM. The authors argued that some similarities among the three languages play a vital role instead of the order in which they are acquired. The authors advised that the argument should not

focus on the general typological proximity as a crucial factor; instead, only the similarity of abstract linguistic properties is the main cause of cross linguistics effects from previously learned languages. The authors also indicated that the LPM accounts for both facilitative and nonfacilitative influence.

For instance, Westergaard et al. (2017) examined the effects of cross linguistic influence in an L3 by simultaneous bilinguals. The researchers addressed the following questions: Do both languages (Norwegian and Russian) contribute to crosslinguistic influence in third language acquisition, or is one of them chosen as the sole source of influence? Is crosslinguistic influence always from typologically more similar languages? Is crosslinguistic influence always facilitative, or can it also be nonfacilitative? (p. 672). Data were collected from three groups of participants aged 11–14 years: 22 Norwegian-Russian bilinguals. The authors clarified that 14 of the bilingual children were born in Norway, of which 10 were in homes where one parent spoke Russian and the other Norwegian and four were in families where both parents spoke Russian. The remaining eight bilinguals arrived in Norway before the age of five, of which four were in households with two Russian-speaking parents and four were in homes with two Norwegian-Russian parents, 46 Norwegian-speaking monolinguals, and 31 Russian-speaking monolinguals.

Westergaard et al. (2017) used a generalized mixed liner model analysis (Norwegian, Norwegian–Russian, Russian) and determined their interactions on the correctness of judgments. The Norwegian–Russian bilinguals and Norwegian monolinguals were recruited in Norway (Tromsø and Oslo), whereas the Russian monolinguals lived in Russia (Moscow). All participants had studied English since Grade 1 (at 6 years of age). The Norwegian–Russian participants attended the same public schools as the Norwegians and had received exactly the same exposure to English. The participants were selected from a large pool based on the results

of a short vocabulary test consisting of a subset of the British Picture Vocabulary Scale (1997). Only participants who scored 60% or more were included in the dataset.

A judgment task was used with two restricted conditions: declaratives with adverbs and questions with auxiliaries. Both conditions included 12 test sentences: 6 grammatical and 6 ungrammatical. The stimuli included 24 filler sentences with both grammatical and ungrammatical word orders. The results revealed a significant main effect of language in the Adv-V condition. Both the monolingual Russian group and the Norwegian–Russian group performed significantly better than the Norwegian group. In the Aux-S condition, language was not a significant predictor of accuracy. The overall scores were high for both bilinguals and Norwegians (80% and 81%, respectively). Monolingual Russian participants scored slightly lower (72%), but the researchers indicated that this difference was not significant.

In brief, Westergaard et al. (2017) stated that the linguistic proximity model played a vital role in this study because all the preceding languages acquired before the third language remained active, regardless of the order of acquisition or general typological grouping. Consequently, Westergaard et al. (2017) argued that the linguistic proximity model occurs on a property-by-property basis. This is because crosslinguistic influence can be both facilitative and non-facilitative. The Norwegian–Russian/L3 English is focused on two-word order phenomena related to verb movement: adverb placement in declaratives and subject-auxiliary inversion in questions. English shares patterns with Russian (Adv-V), whereas English is similar to Norwegian with respect to the second property (Aux-S). Nevertheless, whereas the Norwegian participants over-accepted ungrammatical sentences in English with a word order that was equivalent to Norwegian V2 (V-Adv), the Norwegian–Russians usually detected these errors significantly, which the researchers related to the facilitating influence of Russian. In addition,

the Norwegian–Russians scored lower than the Russian participants on grammatical judgments, suggesting the presence of a non-facilitative influence from Norwegian. Accordingly, Westergaard et al. (2017) argued that the results of this study can be captured more effectively by the LPM than by other existing models.

2.4 Near-Native Studies

There was a debate in the SLA literature regarding whether or not native-like competence can be attained by L2 learners. Several researchers (e.g., Abrahamsson & Hyltenstam, 2009; DeKeyser, 2000; Hyltenstam & Abrahamsson, 2000, 2001, 2003; Johnson & Newport, 1989; Long, 1990, 1993; Patkowski, 1980) believe that the attainment of native-like speech is not possible whereas another group (e.g., Birdsong, 1992, 2007; Birdsong & Molis, 2001; Bongaerts, 1999; Colantoni & Steele, 2006; Montrul & Slabakova, 2003; Moyer, 1999; van Boxtel, Bongaerts, & Coppen, 2005; White & Genesee, 1996) hold the opposite view. Numerous studies have provided findings that have revealed that a native-like level of proficiency is attainable. These include studies that showed a few L2 learners passing as native speakers by native speaker judges (Ioup, Boustagui, El Tigi, & Moselle, 1994; White & Genesee, 1996). At least, three vital hypotheses concerning the attainment of native-like proficiency have also been proposed in both the SLA and Arabic SLA literature: 1) the representational deficit/interpretability hypothesis; 2) the FT/FA; and 3) the FRH, which were all discussed earlier in the L1 transfer studies section. This section also covered additional issues that were related to native-like and near-native proficiency, as follows: 1) optionality and 2) the critical period hypothesis (CPH).

2.4.1 The Optionality Phenomenon

Sorace (2003) stated that adults show different degrees of imperfection in L2. The majority of nonnative speakers may develop a competence, in somewhat nonobvious ways, in the L2, that differs from the monolingual native's own competence. The phenomenon of optionality is one of these differences that characterizes near-native grammars.

Optionality caused problems for formal grammatical theory, including *cost* and *learnability*. First, the problem of *cost* referred to the fact that models of grammar only allow for one candidate to emerge as an exemplary form, but *Optionality* required the existence of two or more forms. Second, the problem with *learnability* was that optional forms could result in incorrect forms and structures. Nonetheless, one solution to the problem of *cost* was that optional forms belong to different grammars but express the same meaning. The solution for the learnability problem was based on optional variations belonging to the same grammar, but which express different subtle semantic differences. Children exhibited stages of temporary optionality, allowing the coexistence of mutually exclusive forms in adult grammar. This occurred because of misunderstandings surrounding the *interpretive conditions* and the concomitant presence of agreement and tense. For instance, *structure-building* and *under specification* were two views behind the nature of this developmental optionality, the latter referring to the alternation between finite and nonfinite verbal forms. Both work with the idea that children's grammar is diglossic, consisting of different grammars.

L2 *optionality* differed from that of L1 because L2 learners had L1 as alternative source of optionality. L2 *optionality* increase at advanced levels of competency. Similarly, *residual optionality* lies at ultimate L2 attainment. For example, French speakers of English still place adverbs between verbs and objects (i.e., Mary speaks very well English). There are also residual constraints among German learners of English who often place two verbs within English

sentences (i.e., For many kids is living with their parents is a nightmare). The cognitive mechanisms behind *optionality* are not well understood, though they exist in both native and nonnative grammars. There is no model to foretell when optionality may arise or when it becomes lasting. *Optionality* is a restricted phenomenon in child language acquisition as well as nonnative grammars.

Furthermore, the parallels between residual L2 optionality and L1 attrition/optionality appear because of extended exposure to an L2. For example, native Italian speakers with almost native English language proficiency exhibit parallel patterns compared to other almost native Italian speakers; for instance, they did not have sufficient input of their original native language, or the L2 merely conflicted with their L1. This *emerging optionality* perhaps has given credence to there being a relationship between L1 and L2 optionality. The *optionality* tended to occur in L2 end-state grammars. Though often caused in L2 by transfer effects from L2, other factors perhaps played a role in optionality, including the input itself or relative markedness of features within the grammar. Sorace (2003) suggested that the origin of emerging L1 optionality is identical to that for L2 optionality: inadequate input due to diminished exposure to the L1 and diverging evidence related to continued exposure to the L2. That is, all grammar, native or nonnative, must be deepened on continued exposure to robust input to be not only acquired but also preserved.

2.4.2 The Critical Period Hypothesis

The CPH focused on the attainability of native-like ultimate proficiency from mere exposure, as Abrahamsson and Hyltenstam (2009) suggested, and the connection concerning age and ultimate attainment. The main assumption was that those who learn language as an L2 after

the critical period cannot attain proficiency comparable to that of a native speaker.

Moyer (1999) studied advanced German L2 speakers (instructors of German, graduate students), and only one in five passed as a native speaker, as judged by a panel of native speakers. Abrahamsson and Hyltenstam (2009) suggested there are important factors in SLA, such as quality and quantity of input (including length of residency or duration), age of onset, and motivation. The authors concluded that native-like proficiency was unattainable in L2; however, this did not explain how we could account for the one German speaker who passed as native in Moyer (1999), as well as Julie and Laura in Loup et al. (1994). This was too strong of a conclusion; there were people who could passed as native speakers in certain aspects of L2 use. Regarding grammatical tests, many argued that these actually test metacognitive skills, not grammaticality (e.g., Birdsong, 1992, 2007; Birdsong & Molis, 2001; Bongaerts, 1999; Colantoni & Steele, 2006; Montrul & Slabakova, 2003; Moyer, 1999; van Boxtel, Bongaerts, & Coppen, 2005; White & Genesee, 1996).

Muñoz (2008) indicated that some researchers had argued that CPH was irrelevant to formal language acquisition (DeKeyser and Larson-Hall, 2005, p. 101; Lightbown, 2000; Patkowski, 1994, 2003). DeKeyser (2000, 2003) phrased this differently, arguing that CPH only applied to implicit language acquisition. In formal settings, children were not provided with sufficient input to trigger the "implicit learning mechanisms that characterize their language learning capacity" (DeKeyser, 2000, p. 520).

To sum up, based on the studies available within the SLA, it is clear that there were some instances in which L2 learners were able to reach a native-like level of proficiency—this was reflected in many of the arguments we have explored so far. The CPH was too robust of a constraint that might prevent L2 learners from reaching native-like proficiency.

2.5 Relevant Arabic SLA Studies

Alhawary (2005) studied the predictions of the three proposals—the local impairment hypothesis, the failed functional features hypothesis, and the missing surface inflection hypothesis—based on cross-sectional data. Data were collected from 53 Arabic L2 learners divided into two different L1 learner groups: American English and French. The participants were placed into one of three groups depending on their exposure to formal education in Arabic: first year, second year, and third year. The goal of the study was to assess the participants' acquisition of morphosyntactic structures, including subject–verb and nominal agreement, together with nominal agreement word order. The tasks were based on recorded spontaneous production data that encompassed picture descriptions, picture differences, and picture sequencing, and narrative tasks. The findings revealed that there was no statistically significant difference in the production of subject–verb agreement among the French LI groups and the English LI groups. However, there was a significant difference between French and English groups concerning nominal agreement, including semantic/natural versus grammatical gender. The author suggested that the English LI participants seemed to experience more grammatical gender issues, as opposed to their French LI counterparts. The findings appear to support a modified temporary (access to UG) impairment view; namely, the MSIH claims that the feature system is temporarily impaired at the surface level because it may be arduous to map out the surface forms and underlaying abstract features, irrespective of the presence or the absence of a feature in an L1 (Lardiere, 1998, 2000; Prévost & White, 2000; De Garavito & White, 2002). However, presence or absences of a feature in L1 does make a difference. The target gender agreement form did not exhibit a complex mapping between underlying abstract features and surface forms, yet the English L1 participants had more difficulty with the form than their

English participants on nominal gender agreement. The latter had the feature gender nominal agreement in their L1. This concept conforms to the UG FT/FA (Schwartz & Sprouse, 1994, 1996). Further, the French participants (Group 3) and one of the English LI participants both scored 100% correct ratios in both forms. The scores of 100 for both participants indicate the potential for achieving full attainment in both groups.

Alhawary (2009a) collected longitudinal data for English L1 and cross-sectional data for English L1, French L1, and Japanese L1 speakers, all learning Arabic as L2. The goal was to investigate third-person singular gender acquisition agreement for the following target structures: nominal gender agreement, demonstrative gender agreement, and verbal agreement. The first study was longitudinal with data collected from 8 English L1 speakers and 1 French/Creole L1 speaker. The author used a variety of techniques to elicit spontaneous/semi-spontaneous production data (picture description, story retelling, and narrative tasks). The author also implemented the *emergence criterion*: the same target structure must be correctly used for both masculine and feminine. The author stated that the use of this criterion is that each pair stipulates two contexts for rule application that are necessary to ascertain emergence with slightly reasonable certainty because of two reasons: (1) the two elements are matched morphologically (word-finally) and (2) they display suffix manipulation as evidence contradicting the learning/memorization of the form as unedited piece. Furthermore, the author specified that the emergence schedules of nominal and verbal agreement in the participants' interlanguage systems are determined by using the emergence criterion of parallel lexical forms in both singular masculine and singular feminine. The context was to show that learners can manipulate structures rather than merely utter unanalyzed morphemic chunks. The author also applied the *acquisition criterion*: target forms must be produced 90% correctly. The findings revealed that

verbal agreement (subject–verb) emerged and was acquired before nominal agreement, despite the fact that the participants were exposed to nominal agreement (week 3) before subject–verb agreement (week 8). This went against Pienemann's (1998) processability model—verbal agreement emerged first even though nominal agreement was introduced first—likely because there is no nominal agreement in English, and the majority of participants were English L1. Additionally, in terms of demonstrative agreement, subject–verb emerged and was acquired before demonstrative agreement (likely also for same reason, that there is no demonstrative agreement feature in English, and the majority of participants were English L1).

The second study was cross-sectional and consisted of 82 English L1, French L1, and Japanese L1 speakers learning Arabic as L2. The Japanese class hours were roughly double those for the English and French learners. The English learners were exposed to nominal agreement before subject–verb agreement, French learners were exposed to subject–verb before nominal agreement (see page 87), and the Japanese learners were mixed. There was no prior exposure: no heritage speakers, no significant travel to Arab world (except for 1 French subject who lived in Egypt for a year but showed average performance). The author implemented a variety of techniques to elicit spontaneous/semi-spontaneous production data (picture description, story retelling, and narrative tasks). The results reveled that all groups tended to master the default form (third-person masculine singular) first. The French learners outperformed the English and Japanese learners in the correct production of feminine suffixes. In terms of verbal agreement (subject–verb) performance, there was no statistically significant difference in performance between the L1 groups. In the nominal agreement, the French learners outperformed the English and Japanese learners (likely due to L1 transfer and nominal agreement exhibited in French, but not in English and Japanese), and there was no statistical difference between English and

Japanese performance. In the demonstrative agreement, the French and Japanese learners performed equally well (although the French were slightly better with feminine agreement). Finally, both the French and Japanese learners outperformed the English learners in the demonstrative agreement forms, likely due to the input since the Japanese participants received more input than the English participants.

There were also cross-sectional data for English L1, Spanish L1, and Japanese L1 learning Arabic as an L2. The goal was to investigate tense/aspect and verbal agreement acquisition for tense/aspect (past vs. present) structures and verbal agreement. Data were collected from 83 Arabic L2 learners (English L1, Spanish L1, Japanese L1). The Japanese class hours were roughly double those for the English and Spanish learners. The author has indicated that the Spanish textbook used by Spanish L1 participants barely recycles verbal agreement. He also suggested that this is perhaps the reason that could help to understand the change in performance of the three groups of L1s. Moreover, the fact that the Spanish L1 participants were unsuccessful in verbal agreement is reinforced by their under usage of null subjects; they dropped significantly fewer cases than their English L1 and Japanese L1 counterparts, and this created correlations amid their low scores on both verbal agreement and subject dropping. In terms of prior exposure, there were no heritage speakers and no significant travel to the Arab world, and no prior exposure prior to joining the program of study. The author used a variety of techniques to elicit spontaneous/semi-spontaneous production data (picture description, story retelling, and narrative tasks). The results revealed that the English and Japanese learners significantly outperformed the Spanish learners in verbal agreement (both past and present). The tense results showed that all 3 groups performed comparably; however, only the English learners seemed to exhibit two developmental paths for the two target forms (both past and present).

Alhawary (2009a) provided more cross-sectional data for English L1, Spanish L1, and Japanese L1 learning Arabic as an L2. The goal was to investigate third-person singular null subject acquisition. The author noted that the Spanish language were pro-drop (+null), the Japanese language were pro-drop, and the English language were not pro-drop (–null). Data were collected from 83 Arabic L2 learners (English L1, Spanish L1, Japanese L1). The Japanese class hours were roughly double those for the English and Spanish learners. In terms of prior exposure, there were no heritage speakers and no significant travel to the Arab world, and no prior exposure prior to joining the program of study. There were 6 native speaker controls. The author used a variety of techniques to elicit spontaneous/semi-spontaneous production data (picture description, story retelling, and narrative tasks). The results showed that in terms of null subject production, the English and Japanese learners dropped subjects more than the Spanish learners. Null subject and verbal agreement (subject–verb) showed that the English and Japanese learners were more correct in terms of subject–verb tokens in null subject contexts than the Spanish learners, due to the Spanish textbook, which did not teach subject–verb agreement adequately. There was a correlation between null subject and verbal agreement inflectional development because the Spanish learners struggled with subject–verb and used pronouns as a crutch to convey their meaning, even if the conjugation was incorrect and they knew they should be dropped. The results were not contradictory to L1 transfer.

In the same vein, Alhawary (2009b) examined the claims made by Pienemann's processability theory (1998). Longitudinal data were collected from 8 English L1 and 1 French L1 speaker learning Arabic as L2 to examine the emergence/processing of demonstrative–predicate gender agreement and verbal agreement structures hypothesized to each be processable at Stage 4. The elicitation tasks encompassed picture description, picture differences, picture

sequencing, story retelling, and object/person identification tasks whereby the learners were asked to describe the pictures in complete sentences. The results displayed that the two forms were not processed by the English L1 learners at the same stage. The reason was that the learners appeared to face additional difficulties concerning the demonstrative–predicate agreement than the verbal agreement. The findings were further supported by cross-sectional data from 53 English and French L2 learners of Arabic. In other words, the effects between groups were noted based on demonstrative–predicate agreement. It was concluded that this is probably because the L1 transfer factor is not included in processability theory.

Benmamoun and Albirini (2018) conducted one study that examined the transfer of colloquial Arabic to L2 acquisition of Standard Arabic (SA) and related their patterns of SA acquisition to those of L2 learners of SA. Specifically, the authors sought to investigate the influence of previously acquired language varieties involving Colloquial Arabic (QA) on the acquisition of SA. Data were collected from 35 heritage speakers, 28 L2 learners, and 16 controls on sentential negation, whereby the authors indicated that SA and QA are significantly different in this topic. The participants performed five oral tasks that focused on negating eight different types of clauses. The results showed that L2 learners and heritage speakers had comparable performance, experienced parallel difficulties, and generated similar error patterns. The results reveled that although the L2 learners had not exhibited robust transfer effects from L1 (English), the heritage speakers had displayed both positive and negative effects of L1 (QA). In addition, the results presented the dynamics of interaction on spoken heritage languages and their standard counterparts, written with particular emphasis on diglossic contexts.

The main goal of the study by Albirini et al. (2019) was to examine the influence of both Colloquial Arabic (CA) and English on the acquisition of Standard Arabic (SA) by L3 and L2

learners. The researchers sought to investigate the role of L2 transfer and to determine whether transfer patterns change over time. Specifically, the researchers wanted to achieve the following aims: (1) to determine whether L3 and L2 learners exhibit comparable performance in the use of definite articles, verb subcategorization rules, and sentential negation; (2) to determine whether transfer from CA and/or English affected the participants' performance and how the transfer effects were influenced by typological or structural proximity; and (3) to identify the patterns of transfer change as L3 and L2 learners advance in their study of SA. Data were collected from 105 participants, 41 of whom were L3 learners of SA (i.e., heritage speakers of CA/L1) and 47 of whom were English-L1 learners of SA. The remaining 17 participants were Arabic-L1 speakers used as controls. The participants were from four universities in the US, where the researchers collected their data at the end of the fall semester and the beginning of the spring (2016) semester to ensure that the participants met the eligibility criteria of this study. The participants were asked to complete three written tasks. In the first task, targeting the definite article, the researchers provided 18 sentences and asked the participants to fill the blanks before nouns with the definite article if necessary. In the second task, the participants had to fill the blanks in 18 sentences with the preposition (only when necessary). The third task involved turning 18 affirmative sentences into negative sentences. Specifically, the target sentences were of three forms: verbless sentences with nominal predicates, present-tense sentences, and past-tense sentences. The results suggest that CA plays a positive role in L3 learners' acquisition of SA in forms where SA and CA converge. However, English appears to play a negative role for both L3 and L2 learners. Consequently, structural proximity could play a positive role in transfer to the L3. Additionally, negative transfer, regardless of proximity/distance, declines as learners advance in their study of SA. Ultimately, the researchers noted two limitations to their study.

First, they could have tested L3 learners on their knowledge of CA, which could have provided additional robust evidence to further support the effect of CA on their performance in SA. Second, a comparison group of L1-English, L2-CA speakers would have allowed an investigation of whether transfer in L3 speakers is a consequence of the typological proximity of the languages involved rather than of the age of acquisition.

Alhawary (2019) examined spontaneous data from participants of different L1 backgrounds (Chinese and Russian) with respect to crosslinguistic influence, usage-based learning, L1 transfer, L2 transfer, role of input, and speech-processing prerequisite accounts. Data were collected from 105 participants who were divided into 4 groups that were also separated into intensive and nonintensive groups. The participants were also separated into 3 proficiency levels (first year, second year, and third year). Prior exposure was described as no heritage speakers and no significant travel to Arab world, and no prior exposure prior to joining the program of study. The tasks were based on recorded spontaneous production data that encompassed picture descriptions, picture differences, and picture sequencing, and narrative tasks. The data provided evidence for usage-based and crosslinguistic typological effect explanations. Specifically, the processing of a nominal gender agreement construction in Russian and the absence of a gender agreement feature is rooted in the Chinese participants and not their Russian counterparts. This was because Chinese participants' L1 has no gender feature (see also Alhawary, 2009). However, Russian displays verbal gender agreement in the past tense but Chinese does not. Alhawary (2019) argued that the closest of all L1 transfer interpretations, the FT/FA provided the closest adequate explanation.

Alhawary's (2019) data revealed three additional conclusions. First, Russian participants maintained an advantage on nominal (noun-adjective) gender agreement over the Chinese

participants because of the robust role of L1 transfer extended to the third-year level of Arabic instruction. Second, the role of L1 transfer appeared to be reduced by increasing input exposure or proficiency on nominal (noun-adjective) gender agreement. Alhawary (2019) specified that this is because of the double extra input exposure—i.e., the beginner Chinese L1-A (group 1) were competent enough to reduce the impact of their Chinese language that lacked a gender agreement feature. Third, the FT/FA certainly accounted for the full attainment of the feature in L2 adult acquisition, which was important evidence in some interlanguage systems of some of the Chinese L1 and Russian L1 participants and in temporary and non-impairment (i.e., contrary to the representation deficit/interpretability hypothesis). The evidence showed there were two participants in Alhawary's (2019) Chinese L1-A Group 1 who performed at a ceiling level (100% correct rule application) in both singular feminine and singular masculine and one participant in the Russian L1-A Group 2. The ceiling 100% results posited that the acquisition of the [*u*Gender] feature may be feasible and L1 transfer plays a role regarding the presence or absence of a feature in L1. L2 learners of L1s that do not exhibit a feature tend to encounter more problems than L2 learners whose L1 exhibits a feature in L1.

Alhawary (2019) asserted that the FT/FA did not appear to account fully for the verbal gender agreement data and the absence of asymmetry in the performance of the participants on par with that of the nominal gender agreement. Alhawary suggested that additional research must be conducted to confirm this finding using other typological pairings where an L1 does not exhibit feature verbal agreement and feature tense. Additionally, he suggested that perceptual salience was indispensable to account for the acquisition of word order with Arabic noun phrases. As for L2 transfer, the results displayed that there was no L2 transfer effect regarding the participants' production of nominal (noun-adjective) agreement and null-subject use (see

pages 172-174). The rationality that the data did not provide evidence of L2 transfer in terms of each of the L2 transfer hypotheses was that there were no significant results or robust transfer effects. The author specified that he inspected the individual performance of all participants in all groups but found no L2 transfer effects regrading participants' production of nominal noun–adjective gender agreement and null subjects. The author also examined other forms (e.g., verbal gender agreement and tense/aspect) and did not find adequate patterns. He also studied a few cases in which the awareness of participants of other L2s was contradictory and too little to have any significant effect on L2 transfer of languages other than English. He also advised that the L2 transfer may be feasible because of the data of tense/aspect; however, the L1 transfer effects from L1 Chinese and L1 Russian are robust. He argued that his findings on nominal (noun–adjective) gender agreement and null subjects show prove that the role of L1 transfer is significant and that L1 transfer is considerably stronger than all existing L2 transfer models. The FT/FA, with an additional refinement, appeared to explain these results most closely. In particular, the presence or absence of a feature in L1 plays a role in L2 acquisition subject to the notion of complexity of feature realization which is not applicable in the case of nominal gender agreement in Arabic (i.e., contrary to the feature assembly hypothesis). Alhawary (2019) considered other factors proposed in the SLA literature in relation to language transfer and other contributing factors, such as input frequency, proficiency, typological and structural proximity, and universal grammar access/transfer effects.

Alhawary (2019) claimed that the null-subject use data likely reflect an attentional or processing bias over time from the Russian and Chinese participants' L1 as well as L1 transfer. However, with respect to verbal agreement, the data do not lend support to L1 transfer and usage-based accounts. The findings contradicted the fact that Russian has a verbal gender

agreement in the past, but not Chinese. Alhawary suggested that the robust role of L1 can support the resulting patterns of null-subject use in the data. Specifically, the Chinese L1 participants appeared to converge on dropping subjects more than their Russian L1 counterparts because Russian seemed to converge on dropping subjects somewhat conservatively. To detect the L1 transfer in the data by Alhawary (2019), he selected two different typological languages: Chinese as a null subject and Russian as a mixed-null subject language according to the following conditions: (1) In their early and/or future stages of Arabic L2 acquisition, the author predicted the Chinese and Russian participants (especially Chinese) would perform above chance on dropping null subjects, and (2) an imbalance in the use of null subjects by both groups, with Russian L1 participants using null subjects more conservatively and Chinese L1 participants using null subjects more freely. The data supports both hypotheses.

As for the tense/aspect, the data by Alhawary (2019) did not exhibit robust patterns as well as significant differences between all three tasks: past tense, present tense, and present tense. Alhawary observed that there were instances where the production of tense (inflected for third person singular feminine) was inconsistent, with either a high or low accuracy rate. Instead, other factors seem to be at play: including instructional input such as the scheduling of the input and input saliency. The author suggested this issue needs to be investigated further with different language pairings including an L1 which exhibits features for neither verbal agreement nor tense.

Finally, the evidence is not completely conclusive with respect to verbal agreement, because the languages investigated either exhibit tense and verbal agreement or tense, but no language, like Indonesian, was investigated that lacks both agreement and tense. This is the vital reason for conducting this dissertation research on Arabic L3 participants with dissimilar language pairings by recruiting Indonesian L1 participants. Indonesian exhibits neither verbal

agreement nor tense features to isolate the processing of verbal agreement from tense and similar language pairings of Turkish participants with their language which is comparable to those in the literature that were summarized above (i.e., by Russian L1 and Chinese L1 speakers learning Arabic as an L2) as well as previous studies (e.g., Alhawary 2009a) with English L1, French L1, Spanish L1, and Japanese L1 speaking learners of Arabic at advanced or near-native levels.

2.6 Summary

This chapter provided an overview of the issues concerning language transfer and near-nativeness. The main aim of this dissertation is to fill the gap in the literature on the acquisition of verbal agreement and tense features by Indonesian and Turkish learners of Arabic as L3. In particular, the typological pairings of Indonesian and Turkish learners of Arabic acquiring the target structures have not been examined before. Moreover, the field of Arabic acquisition will benefit from an original study that analyzes Indonesian and Turkish SLA data that have not been examined and hopefully will offer its contribution to inform teachers and researchers of Arabic as well as L2 learners of Arabic whose L1 does not exhibit verbal agreement or tense features.

Chapter 3

Methodology

3.1 Overview

The aim of the dissertation was to examine the transfer effects between different L1s of Arabic L3 learners that do not exhibit either verbal agreement or similar tense features. To achieve this aim, spontaneous data were collected from Indonesian and Turkish L3 learners to tap into the interlanguage system and unconscious knowledge of L3 learners.

This chapter includes the following sections: Research Questions, Participants, Recruitment Procedure, Target Structures, Elicitation Tasks, Data Analysis, and Summary.

3.2 Research Questions

The Arabic second language field requires more research to help teachers of Arabic understand the processes of learning Arabic as a second language. Teachers must be aware that the backgrounds of their L3 students are diverse. Their L3 learners speak multiple languages, which can cause some confusion in language classes, so their main mission must be to address students' needs and focus on the findings of studies on second language learning to resolve any issues that arise during the learning process.

Understanding the factors that influence language acquisition can help clarify and correctly apply structures that do not exist in the L1. The demands of L3 learning create difficult tasks for L3 teachers, however—they may face challenges teaching certain subjects, such as

grammar. Teachers may struggle to clarify ideas when learners inquire about certain grammatical features if those grammatical features are absent in the learner's previously learned languages. The dissertation addressed the following research questions:

RQ1. *To what extent is the Arabic language output of Arabic L3 learners of different L1s influenced by the absence of verbal agreement and tense in their own L1s?*

RQ2. *Are there any similarities and differences in the third language output of Arabic L3 learners of different L1s at different proficiency levels of verbal agreement and tense?*

RQ3. *Do Arabic L3 learners of different proficiency levels and of different L1s acquire verbal agreement and tense as native speakers?*

3.3 Participants

Participants from Arabic L3 programs in both Indonesia and Turkey were recruited online instead of in person because of the current COVID-19 pandemic, which prevented travel to the research sites to conduct face-to-face interviews with the participants. Each L3 Arabic group included four Arabic language levels: elementary, intermediate, advanced, and near-native. Each group included at least nine participants. Moreover, participants completed a listening and a reading proficiency test to verify their language level before being placed in their L3 Arabic group. It was also important to know the details of their L3s'exposure to agreement and tense and what they had been learning through their L3 exposure. Having a detailed profile

for each learner was an important aspect of the research. These profiles encompassed the learners' age, L1s, L2s, and gender. The criteria for participant inclusion were as follows: participants' L3 level, their number, and their limited or complete lack of exposure to Arabic prior to joining their academic language programs. To participate in the study, they also had to be non-heritage learners. Before recruiting the participants, I obtained institutional review board (IRB) approval as well as participant consent forms and the approval of the institutions that served as study sites. Table 3.1 shows composition of the participants.

Table 3.1 Composition of Participants

Arabic L3 Groups	Length of Exposure	Credits Hours Enrolled in	Gender M/F	Average Age	Education Under/Grad
Indonesian L1					
Indo-Group-B (n=9)	6 Months	16	5/4	19.77	9/0
Indo-Group-I (n=14)	1.6 Years	16	14/0	21.57	14/0
Indo-Group-A (n=11)	2 Years	16	11/0	23.64	11/0
Indo-Group-T (n=11)	+10 Years	--	7/4	30.64	8/3
Turkish L1					
Tur-Group-B (n=9)	6 Months	16	2/7	19.66	9/0
Tur-Group-I (n=13)	1.6 Years	16	3/10	21.23	13/0
Tur-Group-A (n=10)	2 Years	16	6/4	23.3	10/0
Tur-Group-T (n=9)	+10 Years	--	9/0	32.67	5/4

M/F = Total Males/Total Females

3.3.1 Participants' Demographic Information

3.3.1.1 Number of Participants. Eighty-six Indonesian and Turkish participants were selected from the same programs to perform all the tasks required for this study. They were placed according to their placement within their own Arabic program of study, and their placement was verified through the proficiency testing conducted before the study in their proper

levels as follows: 18 in elementary, with nine participants per group (Indonesian and Turkish); 27 intermediates, of whom 14 were Indonesian and 13 were Turkish; 21 advanced, of whom 11 were Indonesian and 10 were Turkish; 20 near-native, of whom 11 were Indonesian and nine were Turkish. Four other participants were excluded from the study because certain screening criteria were not met. The inclusions and exclusions were based on detailed criteria that are discussed in detail discussed in the next section.

3.3.1.2 Gender. The Indonesian group comprised 45 participants divided into four Arabic L3 langue levels. Thirty-seven of the Indonesian group were males and eight were females. Male participants were the dominant population in this group, with five at the beginner level, 14 at the intermediate, 11 at the advanced, and seven at the near-native level. Four female participants were placed in the beginner level, and the other four were in the near-native group.

However, half of the Turkish group consisted of female participants. Twenty-one females were placed into their proper levels as follows: seven in the beginner group, 10 in the intermediate group, and four in the advanced group. The male participants made up the majority of the near native-group with nine participants, while there were six in the advanced group, three in the intermediate, and two in the beginner group.

3.3.1.3 Age. The beginner groups (henceforth Indo-Group-B and Tur-Group-B) encompassed nine participants each, with average ages of 19.77 and 19.66, respectively. The intermediate groups (henceforth Indo-Group-I and Tur-Group-I) contained 14 and 13 participants, respectively, with average ages of 21.57 and 21.23, respectively. The advanced groups (henceforth Indo-Group-A and Tur-Group-A) comprised 11 and 10 participants,

respectively, with average ages of 23.64 and 23.3, respectively. The near-native groups (henceforth Indo-Group-T and Tur-Group-T) included 11 Indonesian and nine Turkish participants, with average ages of 30.64 and 32.67, respectively.

3.3.1.4 Education. Seventy-nine of the participants were in the process of obtaining an undergraduate degree in both Indonesia and Turkey. Specifically, 34 of the undergraduate participants were from the same program in Indonesia, and 32 were from the same program in Turkey. There were eight bachelor's graduates and three master's graduates in the Indonesian near-native group. There were five bachelors' graduates, two Ph.D. graduates, and two master's graduates in the Turkish near-native group. The near-native participants were from different Arabic programs in Indonesia and Turkey.

3.3.2 Language Pairings of the Participants

There were several reasons for selecting the L1s of the participants. Indonesian language has no agreement and no tenses (unlike Arabic). In addition, no study of the acquisition of Arabic as a second language has examined the effects of the transfer of grammatical agreement and tense from the native language (in this case Indonesian) to the third language (Arabic).

The purpose of selecting the Turkish language was related to the fact that Turkish native speakers use various types of verbal agreement and tenses in their own language, similar to Arabic; this will be explained in detail later in this chapter. The dissertation presents a comprehensive analysis of Indonesian and Turkish L3 learners' production of Arabic to assess the influence of the presence and absence of agreement and tense in their native languages and possibly that of another L3 while learning Arabic as an L3.

It is worth noting that all participants self-reported and rated their English skills as weak, and they were only exposed to the language in their general education courses only; also, they reported that they cannot speak, write, or communicate using English daily in school. Consequently, no informational tables containing the usage of the English language were included in the chapter. Follow-up interviews were conducted with all participants, and they all were asked "have you been exposed to the English language?" All participants confirmed consistent answers on the questionnaire that their English language skills are weak and did not report any use of the English language with their families or members of communities. They were all taking English courses when they were studying general education in schools in Indonesia and Turkey. The participants did not report any language other than their native languages, English L2, and Arabic L3. It is also worth noting that all the participants refused to use English, except for two of the Turkish participants in the beginner group, who were able to communicate using English during the interviews, as shown in Table 3.2. Although inclusion of participants with less than an active knowledge in L2 for the purpose of investigating L2 transfer effects is a limitation, any knowledge of an L2 remains important to investigate nevertheless (for limitations of the study, see Chapter 5).

Table 3.2 Participants' L1s and L2s

Arabic L3 Group	Other L2	Self-Reported Proficiency Level
Indonesian L1		
Indo-Group-B (n=9)	English	Weak
Indo-Group-I (n=14)	English	Weak
Indo-Group-A (n=11)	English	Weak
Indo-Group-T (n=11)	English	Weak
Turkish L1		
Tur-Group-B (n=9)	English	Weak
Tur-Group-I (n=13)	English	Weak
Tur-Group-A (n=10)	English	Weak
Tur-Group-T (n=9)	English	Weak

3.3.3 Participants' Proficiency in Arabic and other L2s

Measuring the proficiency of all Arabic L3 groups was vital to this study. The study used various assessment methods to evaluate all Arabic L3 learners. The first was the proficiency test of the Arabic Linguistics Institute at King Saud University, Saudi Arabia. The proficiency test assessed the overall listening and reading performance of all Arabic L3 learners who participated in the study. The results of the proficiency test are presented in Tables 3.3–3.6.

Table 3.3 Proficiency Test Results: Indonesian and Turkish Beginners (Arabic L3)

Group	Mean	SD
Indo-Group-B (n=9)	46.56	5.36
Tur-Group-B (n=9)	42.55	5.39

Table 3.4 Proficiency Test Results: Indonesian and Turkish Intermediate (Arabic L3)

Group	Mean	SD
Indo-Group-I (n=14)	63.64	3.37
Tur-Group-I (n=13)	63.77	4.23

Table 3.5 Proficiency Test Results: Indonesian and Turkish Advance (Arabic L3)

Group	Mean	SD
Indo-Group-A (n=11)	75	3.16
Tur-Group-A (n=10)	72.9	3.78

Table 3.6 Proficiency Test Results: Indonesian and Turkish Near-Natives (Arabic L3)

Group	Mean	SD
Indo-Group-T (n = 11)	85.73	3.88
Tur-Group-T (n=9)	84.78	3.73

As a second measure for determining the correct level in both selected Arabic programs, the study considered students' current L3 Arabic placement level within their programs at the

time of data collection. Teachers were consulted about students' actual proficiency/placement levels. Online discussions with the Arabic teachers were vital to the formulation of an accurate judgment about whether to include or exclude participants in Arabic L3 groups. Teachers' opinions helped to assess whether their students were placed in the correct level upon their entrance into the Arabic program. The significance of teachers' input is examined later in the chapter.

Some Arabic learners may speak third or fourth languages, such as English or other languages. However, all the participants in this study were recruited with English as L2 as explained in Section 3.3.2.

3.3.4 Prior Input Exposure

The settings in which exposure to a target language occur were vital for controlling the transfer effects between Indonesians and their Turkish counterparts. The study involved spontaneous data from Arabic L3 learners living in foreign countries (namely Indonesia and Turkey) with two conditions: (a) Arabic participants were not exposed to the target language in Arabic-speaking countries for three months or more; and (b) the participants were not of Arabic heritage. These conditions were established because an L3 learner who lived with their Arabic-heritage family or studied in an Arabic-speaking country would have received more exposure than all the Arabic L3 learners in the study combined.

3.3.5 Arabic Programs as Study Recruitment Sites

Certain factors affected the selection process for Arabic programs in both Indonesia and Turkey. The first factor was that the data needed to be collected from academic language

programs that have well-defined curricula and objectives. One of the shared objectives among Arabic programs is to train non-native speakers of Arabic to become students in Arabic language, literature, and linguistics—or other majors that require Arabic as the language of instruction for their academic courses. The second objective common to Arabic programs is to equip Arabic L3 learners for the workforce with crucial language skills, such as listening, speaking, reading, and writing. These workforce skills will be applied in Indonesia, as well as in Turkey or elsewhere (Turkish and Indonesians can travel inland to reach Arabic-speaking countries). Likewise, learning Arabic provides an L3 limitless development opportunities. Many learners enroll in Arabic programs every year for a number of reasons: some need to learn a language to teach it to people in their home countries, some love to learn languages, some want to work as translators, and some want to work (in the governments of their countries) as diplomats or in different governmental areas.

The second factor is that each Arabic program had to include three language levels: elementary, intermediate, and advanced. However, the near-native group was drawn from teachers or previous students in the Arabic programs. There were additional criteria applied to select teachers in both near-native groups. (1) Near-native participants must have completed a bachelor's degree (four years) with Arabic as the primary language of instruction, (2) the length of exposure to Arabic must have been at least between 5 and 8 years and involved both studying and teaching Arabic, and (3) near-native participants had to hold an academic position in a university or school with Arabic as the primary language of instruction.

3.4 Target Structures

To answer the research questions, speakers of typologically distant languages that are linguistically similar and dissimilar were selected. In particular, Indonesian and Turkish were

chosen here because Indonesian does not mark verbal agreement and tense unlike Arabic. The aim of choosing Turkish was related to the fact that native speakers realize various types of verbal agreement and tenses in their own language similar to those in Arabic.

An Arabic verb has various clusters of inflectional features (e.g., tense, perfect (past) or imperfect (present), and person, number, and gender). Examples (1)-(2) display the verbal agreement inflection features in the present tense: third person singular masculine and third person singular feminine.

(1) ʔal-tˤālib-(u) **ya-**qraʔ-(u)

the-student.s.m-(NOM) 3.s.m-reads/-ing-(Indic)

"The male student reads /is reading."

(2) ʔal-tˤālib-a[t]-(u) **ta-**qraʔ-(u)

the-student.s.f-(Nom) 3.s.f-reads/-ing-(Indic)

"The female student reads /is reading."

Sentences (1)-(2) display the verbs inflected for third person singular masculine and feminine agreement features to agree with singular masculine and singular feminine subjects through the use of the prefixes {ya-} and {ta-}, respectively.

The present tense in its full forms is inflected for mood (e.g., indicative, subjunctive, and jussive), whereas the past tense forms are not inflected like those of the present tense. The past tense in Arabic is inflected for third person singular masculine using its zero morpheme and through the suffix {-t} for third singular feminine, as in (3)-(4).

(3) ʔal-tˤālib-(u) qaraʔa

the-student.s.m-(NOM) read.3.s.m

"The male student read."

(4) ʔal-tˤālib-a[t]-(u) qraʔa-t

the-student.s.f-(Nom) read-3.s.f

"The female student read."

Arabic verbal agreement encompasses asymmetrical agreement in VSO order, where the verb agrees with its postverbal subject in gender only. In contrast, the SVO order agrees with its previous preverbal subject in person, number, and gender. Sentence (5a) shows the SVO order while sentence (5b) shows the VSO order. It is not grammatically acceptable in Arabic verbal sentence agreement to initiate a sentence with a plural subject followed by a singular verb, as in (5c), or a masculine third person plural verb followed by a plural subject, as in (5d). The elements displayed in parentheses are optional and are not among the target structures.

(5) a. ʔal-tˤullāb-(u) qaraʔ-ū ʔal-wādʒib(a)

the-students-NOM read-3.pl.m the-homework-acc

"The male students read their homework."

b. qaraʔa ʔal-tˤullāb-(u) ʔal-wādʒib(a)

read 3.s.m the-students-NOM the-homework-acc

"The male student read his homework."

c. *ʔal-tˤullāb-(u) qaraʔa ʔal-wādʒib(a)

the-students-NOM read3.s.m. the-homework-acc

"The male students read their homework."

d. *qaraʔū ʔal-tˤullāb-(u) ʔal-wādʒib(a)

read3.pl.m the-students-NOM the-homework-acc

"The male students read their homework."

Finally, the type of asymmetrical agreement is not part of the focus of this study, since the focus of this dissertation is on third person singular agreement features.

Indonesian clauses incorporate a subject and a predicate. However, Indonesian clauses lack inflectional morphemes, which accompany predicates to mark tense/aspect, or subject-verb agreement. Consequently, verbal predicates, illustrated in (6)-(9), are contrary to the parallel clauses in the Arabic examples mentioned above (1)-(5), which need verbs with tense/aspect, and agreement features.

(6) Seorang Siswa Laki-laki itu telah membaca
one/a student male that already read
"The (male) student read."

(7) Seorang Siswa Perempuan itu telah membaca
one/a student female that already read
"The (female) student read."

(8) Seorang Siswa Laki-laki itu sedang membaca
one/a student male that in the middle of read
"The (male) student reads."

(9) Seorang Siswa Perempuan itu sedang membaca
one/a student female that in the middle of read
"The (female) student reads."

In addition, examples (10)-(11) illustrate the formation of the third person singular masculine/feminine in the past tense in the Indonesian language. The verb *membaca* exhibits no tense or subject-verb agreement.

(10)	Para	siswa	Laki-laki	telah	membaca
	plural	student	male	already	read

"The (male) students read."

(11)	Para	siswa	perempuan	telah	membaca
	plural	student	female	already	read

"The (female) students read."

Sentences (12)-(13), as well as (14)-(16), provide further examples of the verb *membaca* "to read" to show how verbs are used. The verb *membaca*, in all instances, demonstrates that it has no tense and no subject-verb agreement in Indonesian. The distinction between past and present is indicated through use of an adverb "already" for past tense and "in the middle of something" for present tense.

(12)	Para	siswa	Laki-laki	sedang	membaca
	plural	student	male	in the middle of	read

"The (male) students read."

(13)	Para	siswa	perempuan	sedang	membaca
	plural	student	female	in the middle of	read

"The (female) students read."

(14)	a.	seorang	Siswa	Laki-laki	telah	membaca	tugas

one/a student male already read homework

"The (male) student read his homework."

b. seorang Siswa Perempuan telah membaca tugas

one/a student female already read homework

"The (female) student read her homework."

(15) a. Para siswa Laki-laki telah membaca tugas

plural student male already read homework

"The (male/female) students read their homework."

b. Para siswa Perempuan telah membaca tugas

plural student female already read homework

"The (female) students read their homework."

(16) a. Para siswa Laki-laki sedang membaca tugas

plural student male in the middle of read homework

"The (male) students are reading read their homework."

b. Para siswa Perempuan sedang membaca tugas

plural student female in the middle of read homework

"The (female) students are reading their homework."

As for Turkish, the verb agrees with the subject only in number (17a) and person and there is no grammatical gender agreement, as in (17b).

(17) a. Öğrenciler ödevini okuyorlar

male/female students their homework read

"The students read their homework."

b. Öğrenci ödevini okur

male/female student his/her homework reads

"The student reads his/her homework."

The Turkish verb expresses person, number, and tense, as well as aspect, voice, mood, and modality, which are not among the target data. There are two past tense verbs. The first tense is the simple past. For past tense, among the suffixes{-dı}, {-di}, {-du}, and{-dü}one must be attached to the verb root to form the past tense, as in (18).

(18) O okudu

he/she read

"He/she read."

The reported past is the second type; it is formed by attaching one of several suffixes{-mış}, {-miş}, {-muş}, and{-müş} based on the last vowel of the verb root, as in (19).

(19) Görünen o ki öğrenci kitap okumuş

apparently male/female student book read

"Apparently, the student read the book."

The reported past is often used when Turkish speakers have not witnessed an action and thus are not certain of its occurrence.

There are two types of present tense in Turkish. The present continuous is formed by adding the suffix {-yor} to the verb root and the personal suffix. Example (20) illustrates this construction.

(20) O okuyor

he/she is reading

"He/she is reading."

The simple present specifies actions that are still happening or that are performed habitually. To form the simple present tense, the suffixes {-mak} or {-mek} must be neglected from the infinitive form. In (21), *okumak* "to read" becomes *okur.*

(21) O okur

he/she reads

"He/she reads."

3.5 Recruitment Procedure

Several steps were taken before collecting the data from the participants online. The elicitation tasks were examined under the consideration of the time allowed for each participant in the study to complete the assigned task. The pilot study was a unique chance to test the recording equipment and to evaluate the sound quality, the duration of each recording, and the categorization of each recording. Most importantly, the pilot study was used to test how the participants responded to the elicitation materials and to what extent the materials elicited the target structures. Finally, the pilot study confirmed that instructions of the tasks were clear and direct.

After the pilot study was conducted and the required documents processed, the interviews were conducted online with the teachers and Arabic L3 participants to learn about the programs' environments and to find out how Arabic was taught in both programs (e.g., classroom, equipment, types of students and teachers).

Two recruiting steps were implemented. First, sign-in sheets were provided for site program teachers. The sign-in sheet consisted of three columns: one for names, one for contact

information, and one for the time slot during which an interview took place (allowing 40 minutes per student.) Participation in the study was voluntary, and the participants' personal information was protected. Potential participants were informed that they needed to complete a questionnaire, a proficiency test, and elicitation tasks. The participation consent forms were filled out before commencing the tasks.

After the participants had been recruited, they filled out a questionnaire about their Arabic language background and other demographic information. Then, they took a proficiency test to assess their language level to validate their placement within their own language programs. Arabic L3 learners had an identification (ID) number to use in the questionnaire, proficiency test, and elicitation tasks. The ID helped ascertain and organize the materials efficiently. Arabic L3 learners were informed that the purpose of the elicitation tasks was to assess their language development and proficiency.

3.5.1 Study Instruments

The research instruments encompassed various items: a demographic survey, oral production tasks, online interviews with the teachers and L3 learners, and online field notes (described in detail below).

3.5.2 Demographic Survey

Li et al. (2020) specified that the language history questionnaire (LHQ; see Appendix 1) is a vital assessment tool that encompasses learners' linguistic backgrounds, the context and habits of language use, proficiency in various languages, and the power and cultural identity of the languages acquired. Additionally, the questionnaire was provided to the Arabic L3

participants through individualized URLs. The LHQ saved all the Arabic L3 results in a spreadsheet immediately after completing the questionnaire. Similarly, the data from the LHQ could be viewed, downloaded, and sorted. The LHQ results could be deleted on the web by using only student ID numbers for privacy protection; the information of the participants will never be shared on the web.

The demographic information of the LHQ, such as the number of participants, their ages, previously learned and studied languages, enrolled credit hours in their programs at the time of collecting the data, educational background, and length of exposure to the Arabic language, are included in Section 3.3. This section is based on their Arabic language usage outside the classroom, which will be elucidated in terms of four categories: language-learning ability, self-assessment of four language skills, Arabic usage in various activities outside the classroom, and Arabic usage with different groups within their own communities.

First, the LHQ included the question "Rate your language-learning skill. In other words, how good do you feel you are at learning new languages, relative to your friends or other people you know?" The lowest score is 0 and the highest is 7. The results represent a total of eight groups, four groups each of both Indonesian and Turkish participants. Overall, the results show comparable homogeneity between all groups of the study concerning their ability to learn new languages (see Tables 3.7–3.10).

Table 3.7 Mean and Standard Deviation Results of Ability to Learn New Languages: Indonesian and Turkish Beginners

Group	Mean	SD
Indo-Group-B (n=9)	5.00	1.00
Tur-Group-B (n=9)	5.56	1.01

Table 3.8 Mean and Standard Deviation Results of Ability to Learn New Languages: Indonesian and Turkish Intermediate

Group	Mean	SD
Indo-Group-I (n=14)	5.29	0.99
Tur-Group-I (n=13)	5.62	0.87

Table 3.9 Mean and Standard Deviation Results of Ability to Learn New Languages: Indonesian and Turkish Advance

Group	Mean	SD
Indo-Group-A (n=11)	6.18	0.75
Tur-Group-A (n=10)	5.90	0.74

Table 3.10 Mean and Standard Deviation Results of Ability to Learn New Languages: Indonesian and Turkish Near-Natives

Group	Mean	SD
Indo-Group-T (n = 11)	5.91	0.54
Tur-Group-T (n=9)	6.22	0.67

Second, to further assess the four language skills (listening, speaking, reading, and writing) of participants for homogeneity, they were asked to self-evaluate their language skills in Arabic. There were seven options in the LHQ: *very poor* (1 point), *poor* (2 points), *limited* (3 points), *average* (4 points), *good* (5 points), *very good* (6 points), and *excellent* (7 points). The results are listed in Tables 3.11 through 3.14.

Table 3.11 Mean and Standard Deviation Results of Self-Assessment of Participants' Four Language Skills: Indonesian and Turkish Beginners

Group	Reading	Listening	Writing	Speaking
Indo-Group-B (n=9)	1.33/0.50	1.67/0.50	1.56/0.53	1.22/0.44
Tur-Group-B (n=9)	1.22/0.44	1.33/0.50	1.11/0.33	1.44/0.53

Table 3.12 Mean and Standard Deviation Results of Self-Assessment of Participants' Four Language Skills: Indonesian and Turkish Intermediate

Group	Reading	Listening	Writing	Speaking
Indo-Group-I (n=14)	3.29/0.47	3.21/0.43	3.5/0.52	3.36/0.50
Tur-Group-I (n=13)	3.30/0.48	3.23/0.44	3.38/0.51	3.54/0.52

Table 3.13 Mean and Standard Deviation Results of Self-Assessment of Participants' Four Language Skills: Indonesian and Turkish Advance

Group	Reading	Listening	Writing	Speaking
Indo-Group-A (n=11)	5.18/0.75	5.45/0.52	5.0//0.77	5.64/0.50
Tur-Group-A (n=10)	5.20/0.63	5.40/0.51	5.10/0.74	5.40/0.52

Table 3.14 Mean and Standard Deviation Results of Self-assessment of Participants' Four Language Skills: Indonesian and Turkish Near-Natives

Group	Reading	Listening	Writing	Speaking
Indo-Group-T (n = 11)	6.54/0.52	6.36/0.50	6.55/0.52	6.72/0.46
Tur-Group-T (n=9)	6.67/0.50	6.44/0.53	6.67/0.50	6.77/0.44

Third, one of the vital measures to determine how participants use Arabic outside classrooms is based on a question in the LHQ which reads, "Estimate how many hours per day you spend engaged in the following activities in each of the languages you have studied or learned." The activities inquired about were watching TV, listening to radio, reading for fun, reading for school or work, using social media and the internet, and writing for school or work. The results were calculated based on the minutes spent on each activity (see Tables 3.15–3.18).

Table 3.15 Mean and Standard Deviation Results of Using Arabic in Various Activities Outside the Classroom: Indonesian and Turkish Beginners

Group	TV	Radio	Reading for fun	Reading for school/work	Using social media & internet	Writing for school/work
Indo-Group-B (n=9)	--	--	--	20.33/4.44	--	23.44/7.95
Tur-Group-B (n=9)	--	--	--	19.44/4.63	--	23.22/7.68

Table 3.16 Mean and Standard Deviation Results of Using Arabic in Various Activities Outside the Classroom: Indonesian and Turkish Intermediate

Group	TV	Radio	Reading for fun	Reading for school/work	Using social media & internet	Writing for school/work
Indo-Group-I (n=14)	--	--	16.07/5.61	29.36/15.31	29.57/19.04	72.35/35.78
Tur-Group-I (n=13)	--	--	15.53/6.09	31.77/15.99	33.46/18.55	75.62/35.01

Table 3.17 Mean and Standard Deviation Results of Using Arabic in Various Activities Outside the Classroom: Indonesian and Turkish Advance

Group	TV	Radio	Reading for fun	Reading for school/work	Using social media & internet	Writing for school/work
Indo-Group-A (n=11)	--	--	32.27/13.48	121.82/41.18	156.36/67.86	165.45/61.86
Tur-Group-I (n=13)	--	--	33/14.18	121/42.02	155/67.37	173/59.64

Table 3.18 Mean and Standard Deviation Results of Using Arabic in Various Activities Outside the Classroom: Indonesian and Turkish Near-Natives

Group	TV	Radio	Reading for fun	Reading for school/work	Using social media & internet	Writing for school/work
Indo-Group-T (n = 11)	49.09/13.56	--	81.82/35.09	250/53.85	94.09/45.54	266.82/70.65
Tur-Group-T (n=9)	46.66/13.91	--	81.67/34.46	254.44/53.64	97.78/46.84	280.56/71.17

Finally, the interaction regarding Arabic usage with other groups in the communities of the participants was among the measures to determine the homogeneity between Indonesian and Turkish groups across all levels and was examined by the following question in the LHQ: "Estimate how many hours per day you spend speaking with the following groups of people in each of the languages you have studied or learned." The communities were organized into four categories (family, friends, classmates, and others). These interactions mostly occurred outside participants' classrooms. The results were calculated based on the minutes of interaction (see Tables 3.19–3.22). The beginners did not select any option for this question in the LHQ, but their results are still displayed here for consistency. The intermediate and advanced participants specified their interactions with their classmates only; there were no results for other categories.

Finally, the near-natives mainly chose the category "other", encompassing their conversations with their students and colleagues in the Arabic programs.

Table 3.19 Mean and Standard Deviation Results of Participants Using Arabic with Different Groups: Indonesian and Turkish Beginners

Group	Family	Friends	Classmates	Others
Indo-Group-B (n=9)	--	--	--	--
Tur-Group-B (n=9)	--	--	--	--

Table 3.20 Mean and Standard Deviation Results of Participants Using Arabic with Different Groups: Indonesian and Turkish Intermediate

Group	Family	Friends	Classmates	Others
Indo-Group-I (n=14)	--	--	20.71/6.46	--
Tur-Group-I (n=13)	--	--	22.69/6.65	--

Table 3.21 Mean and Standard Deviation Results of Participants Using Arabic with Different Groups: Indonesian and Turkish Advance

Group	Family	Friends	Classmates	Others
Indo-Group-A (n=11)	--	--	48.63/12.67	--
Tur-Group-A (n=10)	--	--	48 /11.22	--

Table 3.22 Mean and Standard Deviation Results of Participants Using Arabic with Different Groups: Indonesian and Turkish Near-Natives

Group	Family	Friends	Classmates	Others
Indo-Group-T (n = 11)	--	--	--	242.73/41.49
Tur-Group-T (n=9)	--	--	--	237.27/41.00

3.5.3 Interviews with Teachers and Learners

Prior to collecting data for the study, online interviews were conducted with teachers and students outside the classroom to discuss the program. The online interviews were unstructured

in terms of content; rather, the interviews were intended to gather general ideas about teaching methods and about how the different content and syllabi helped students' progress in the Arabic program. The questions were centered around progress through the course syllabus, the teachers' academic focus, and the placement and/or performance of the participants in their classes respective to their current levels. Asking about language level, overall benefit, and whether students in the program were facing any obstacles was important. Some questions were asked about the usage of the Arabic language in the classroom. Ultimately, the purpose of these unstructured interviews was to get a sense of the program and the students' and teachers' motivation levels. The general observation of these interviews will be detailed in Section 3.5.7.

3.5.4 Oral Production Tasks

To elicit the target forms, two types of oral production tasks were used: a picture description task and four narrative tasks. The tasks elicited each of the targeted verbal agreement and tense forms. Similarly, the study focused on eliciting full subject–verb agreement in gender (masculine and feminine), number (singular), and person (third person).

3.5.5 Picture Description Task

The picture description task involved six distractor images following the theme of transportation (e.g., bicycle, bus, car, airplane, motorcycle, train, or ship). The task started with three pictures followed by the past-tense narrative tasks and three distractor pictures followed by the present-tense narrative tasks (each task contained a picture of male and female characters). Study participants were asked to describe each picture separately. An additional benefit of including distractor items was to control the pace of the interview and to help Arabic L3 learners

stay focused on the assigned tasks. The main direction was "describe the following picture by using as many words as you can; if you feel that any picture is difficult to describe, you can move to the next picture." The description task was presented through a MacBook Pro 13-inch screen via the video conferencing platform Zoom, along with a PowerPoint presentation. A high-powered recorder with superior microphone quality was used to record all interviews.

The pictures included in the task were relevant to all language levels, including the beginning level. In terms of the study's target objectives, the beginners had knowledge of the lexical items to deal with the target pictures because they were based on the theme of transportation, which is used for daily actions; this knowledge was expected of this level. They were not prompted with questions as long as they indicated that they understood the instructions. There were no verbal agreement forms expected for these distractor items.

3.5.6 Narrative Tasks

The study implemented four narrative tasks that examined how the L3 learners dealt with verbal agreement and tense. The dissertation adopted Alhawary's (2019) past-tense tasks. The past-tense tasks were based on a calendar of the last month, including days of the week and their dates. The calendar displayed a number of activities for a number of specific days. The content of the narrative involved a vacation that a man (see Appendix 3) or woman (see Appendix 4) enjoyed last month. The man or woman's vacation activities were presented to participants separately; some actions included in their vacations were similar and some were dissimilar. The man or woman was depicted sitting in a chair, and the calendar was presented under him or her. The participants were asked to "narrate day-by-day the vacation activities (on a calendar) carried

out by each character during his or her vacation (which each character took the previous month for a period of ten days)" (Alhawary, 2019, p. 25).

The past- and present-tense narrative tasks for this dissertation were primarily designed to allow the beginners to describe each picture using suitable verbs. The present-tense tasks involved routine activities at different times of a given day. Participants were asked to follow a sequence of 14 pictures of men (see Appendix 6) and 14 pictures of women (see Appendix 7) in the present-tense narrative tasks. Specifically, the study only implemented Alhawary's (2019) prompts to elicit participants' descriptions of all 28 novel designed pictures for the present-tense narrative tasks. The instruction was to "describe the daily activities of each of the characters at different times of the day" (Alhawary, 2019, p. 25–26).

The past-tense tasks were presented in the interview in the middle of the picture description task for both the male and female characters. Meanwhile, the present-tense tasks were introduced to the Arabic L3 learners towards the end of the interview. The past- and present-tense narrative tasks took approximately 30–40 minutes. The total number of pictures on the PowerPoint file was 10, six of which served as distractors from the past- and present-tense narrative tasks (see Appendix 2 and 5).

3.5.7 Field Notes

The field notes concerning all participants of both groups were implemented in the study for specific purposes. First, the field notes document vital actions and responses as well as notable recommendations that helped in the study's subsequent stages. One of these actions is how Arabic L3 learners handled the tasks during the online interview, along with problems and issues that arose during the tasks.

Before reporting the overall experience with participants in the study, I will first share thoughts on the interactions with the teachers of both programs. They were vital in assessing and recruiting the participants in the study. They provided insight into challenges they faced and how Arabic was taught in their programs, as well as the level of students' engagement in their Arabic classes. The overall picture is that students were eager to learn Arabic and needed to improve their learning skills. According to the teachers, the participants were at the top of their classes, disciplined, and performing well. I was allowed to observe several Arabic classes in both programs online to see how Arabic was taught. One area of special interest was the way students used Arabic and whether the instructor used Arabic in their classes; furthermore, I observed how teachers enforced the use of Arabic when students used their mother languages to interact with their classmates or teachers to participate or ask questions about the content of the language lessons. It was essential to observe the use of Arabic throughout the observation period in classes of both programs online. Using the target language—in this case Arabic—is vital to provide students with adequate input to evolve their Arabic level gradually throughout the levels of Arabic programs.

One of the vital questions that was raised during the interviews concerned the participants' exposure to agreement and tenses, so that the researcher could be certain that the learners had been exposed to the target structures. The Arabic teachers confirmed that the participants had adequate exposure to agreement and tenses by using different exercises, handouts, and electronic exams while learning Arabic online due to the COVID-19 pandemic.

It was also important to learn whether the students in both programs took sufficient homework and exercises to their homes to keep them connected with Arabic outside classes and provide them with the ability to practice what they learned every day during the semester. This is

one of the factors that increased the confidence that participants had the language resources to allow them to deal with various learning tasks.

The Arabic teachers' focus was on improving all language skills—reading, writing, listening, and speaking. They used various materials and methods to present language lessons to their students, either through video or audio, and sent forms for students to fill out via email.

Covid-19 changed the way teachers and students interact in their classes. For example, some students are not fortunate enough to buy a computer or a smartphone, and some may need access to the internet to view classes, complete homework, and interact with their classmates. One obstacle that teachers shared was that the structure and organization of in-person class content would have provided students more clarity and understanding than the online experience. Teachers also revealed that it is sometimes difficult to monitor the activity of students in remote classes—some students get distracted by other programs or chatting with their friends or classmates or by other activates. This is in contrast to teaching in-person classes, where the teacher can control the pace of teaching while monitoring how their students are doing in class when the language content is presented or when the students are assigned a task that needs to be completed in the class session. Teachers were also aware of the differences in learning styles among their students. They indicated that some of their students were visual and that some need to learn through hands-on experience and go to class to participate, interact, take notes, and practice in class. Overall, some of the learners could not learn through online resources. According to the teachers, this was not a clear learning factor that may have contributed to the outcome here. These were some of the most common worries among the teachers. However, the researcher's overall experience of meeting with the students was positive.

In general, the experiences with students were excellent for several reasons. Students were required to complete every task in their mother languages before collecting the data, as described previously. As explained in Section 3.3.2, English was included in the study. However, participants refused to use the language because their speaking skills were weak, and they could not communicate clearly using English, so they preferred to use Arabic instead. I translated all the instructions for the elicitation tasks into the participants' L1s to be certain that participants understood what they were required to do. Before each task, the instructions were written in the chat section in Zoom for each participant, and they were able to view them at any time during the interview. In other words, all selected participants were aware of what they were required to complete each task successfully. Despite that, some of the participants needed to be reminded during the interview about the directions to describe the pictures, which sometimes required simplifying the language of the directions for each task to keep the participants on track until the end of the interview. The Arabic directions served as a second reminder of the translated directions in both mother languages (Indonesian and Turkish). This made the process of moving from one picture or task to the next easy and without complications. The participants were told to inquire about anything related to the task. They were allowed to skip a task or stop at any time if they did not feel comfortable. Before each interview, the students were asked about the translated directions and whether they were clear; the participants confirmed that the directions were clear and easy to follow. After each interview, each participant was asked whether everything was good and clear, and all participants confirmed that the tasks gave them something to think about and that they were happy to participate.

Additionally, the level of excitement and motivation observed throughout the data collection phase was noticeable. The participants were willing to stay longer if necessary to

confirm that the required data had been gathered. Their dedication to their studies and passion to learn Arabic was exemplary. Participants wanted to describe each picture and did their best not to leave any picture without a description; although the answers were not always correct, the attempts showed an understanding that seriousness, discipline, and trying is the best way of learning anything, especially a language.

It was interesting that the greatest dream of some of the students was to travel in an airplane. Some of them revealed this dream in the interviews, while others shared it after the recording of the interviews. Some participants dreamed of buying a car or motorcycle and thought about it a lot. This observation is included because it confirms that the transportation distractor pictures were effective in eliciting spontaneous data from the participants without revealing the purpose of the tasks. This is also an additional means (beyond the LHQ questionnaire) of confirming that most participants have not been in Arabic-speaking countries before.

It is also essential to mention that participants differed in how they produced the descriptions of the pictures. Some of them preferred to use longer statements, while others preferred shorter ones. Some of them felt that they had made a mistake, but they did not know how to correct it; this was a reason for repeating some of the statements until reaching a description they assumed was correct. As such, only the last description was considered for analysis and, therefore, all previous and/or repetitions were not coded.

Finally, the whole experience taught me how to engage with different participants from diverse language groups, how to be certain that participants understand the directions of tasks, and how to handle the pace of interviews smoothly without any issues. It was critical to pay

attention to their needs and provide them with translated instructions so that they felt confident in their ability to complete all tasks.

3.6 Data Analysis

Both quantitative and qualitative data analyses were applied in order to find answers to the three proposed research questions. The goal of the mixed method design was to enhance confidence in the research findings and obtain credible results. The qualitative data analysis focused on documenting all instances of verbal agreement and tense and how the participants actually used the target forms in context. The quantitative analysis relied on analysis of variance in statistical tests.

3.7 Summary

This chapter outlined the research questions, participants, and recruitment procedures. It then compared analogous structures in Indonesian and Turkish and their similarities and dissimilarities to Arabic. The chapter described elicitation tasks in which participants completed two types of tasks in one online interview through the use of PowerPoint slides. The first task was a picture description task in which the participants described the target pictures using as many words as possible. The aim of the selected pictures was to test their knowledge of the targeted verbal agreement and present-tense forms. The participants were expected to use both past- and present-tense structures. A suitable approach to account for all target structures was to provide them with obligatory contexts to describe spontaneously through oral production tasks because target structures ought to be produced unconsciously if the aim is to tap the participants'

interlanguage system properly. The chapter also comprised a brief description of the mixed methods that were used in the results chapter.

Chapter 4

Results

4.1 Overview

This chapter deals with the analysis and findings of the study in order to address the following research questions:

RQ1. *To what extent is the Arabic language output of Arabic L3 learners of different L1s influenced by the absence of verbal agreement and tense in their own L1s?*

RQ2. *Are there any similarities and differences in the third language output of Arabic L3 learners of different L1s at different proficiency levels of verbal agreement and tense?*

RQ3. *Do Arabic L3 learners of different proficiency levels and of different L1s acquire verbal agreement and tense as native speakers?*

4.2 Data Analysis Notes and Methods

Quantitative data were examined mainly using R v4.1.0 (henceforth R) and SPSS v28 for partial analysis, such as for the graphs. Factorial repeated measures ANOVA was used to examine how participants varied in their recorded verbal agreement and tense scores under

different conditions (of verbal gender agreement and tense). I also needed to compare different groups of participants of different languages in terms of the variation just explained (between and within group comparisons), so a mixed-design ANOVA was thought be most ideal in this case. Two-way ANOVA was also used to analyze each target form (one of the repeated measures in a specific condition of gender and tense) and compare its average across groups (groups are defined by two variables: L1 and proficiency). All tests were conducted at the 0.05 level of significance. I likewise tried to use a more accurate outcome variable other than the percentage of correct scores. If one outcome variable was not normally distributed, a sum function was applied to transform its values so that it became closer toward being normally distributed. Many functions (e.g., logarithm, square root, square, reciprocal) were tried, and the one that results in the most normally distributed data were selected. I applied the same methods but with the implementation of bootstrapping techniques in calculating the p-values, which was robust against violation of assumptions (both normality and heteroscedasticity). The mixed-design ANOVA was divided into multiple separate mixed-design ANOVA models, as the available R bootstrapping function for mixed design does not allow for multiple repeated measurements of variables (tense, gender, and the type of score considered), such as verbal agreement or tense, and the interaction effects between them. Trimmed means were used rather than regular means to avoid the influence of outliers.

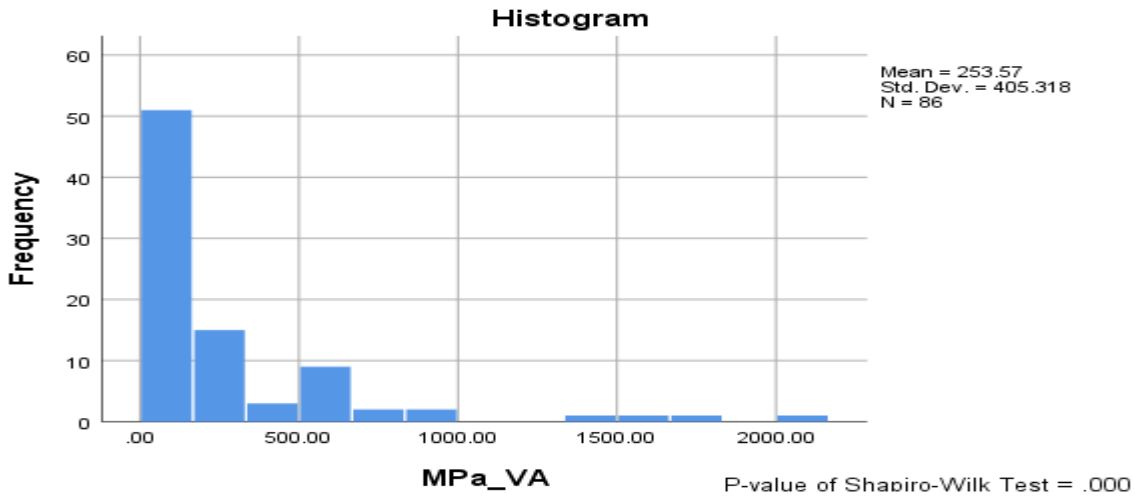
4.3 Data Transformation

Step 1: Using a more accurate outcome variable (than the percentage of correct scores): As the percentage does not provide any indication of the number of tokens produced, it could bias the results at various instances. For example, if a participant produced three tokens and all of

them were correct, they would get a score of 100%. This example shows low production but was highly rated by a researcher. For this reason, I generated a measure that involved both the total number of tokens and the number of correct tokens. I used a measure equal to the product of the total tokens and the number of correct tokens, which will be described in detail below.

Step 2: Verifying normality: Normality was checked for all the correct target forms. For simplicity, however, I will only show the results of singular masculine verbal agreement in the past, as all results were similar. Readers may see the results of the other target forms in Appendix 12. Figure 4.1 shows the distribution of singular masculine verbal agreement in the past.

Figure 4.1 Distribution of Masculine Verbal Agreement in the Past

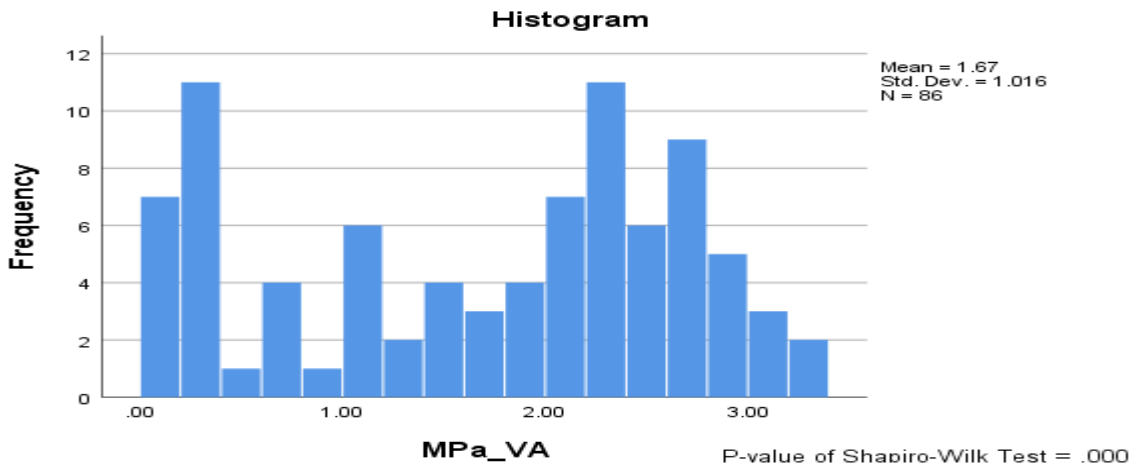


MPa_VA= masculine verbal agreement in the past

Figure 4.1 shows a very positively skewed distribution (a Shapiro–Wilk test p = 0.000, indicating non-normality), which was a clear violation of the assumptions for the regular mixed-design or two-way ANOVA. I tried numerous transformation functions, but the best was log10.

Before the log on the codes was added, +1 was added to all values to avoid the existence of any zeros (the log of 0 was undefined). After the log, the distribution approached normality (see Figure 4.2).

Figure 4.2 Distribution of the Modified Version of Masculine Verbal Agreement in the Past (Production × Correct Tokens) after Applying the Log



MPa_VA=masculine verbal agreement in the past

The shape in Figure 4.2 looks normal but has too many 0 values or very small values (a Shapiro–Wilk test's p = 0.000, which indicates non-normality). However, up to this point, a great achievement in terms of approaching normality for the distribution was made. Steps 3 and 4 would attempt to deal with this problem.

Step 3: Applying bootstrapping: Bootstrapping is the process of taking several samples (e.g., 500, 1,000, or 2,000) having a comparable distribution and then obtaining their statistics, which could be averaged to provide what is called bootstrap statistics. The main statistic I focused on with the bootstrapping technique was its p-value (or even its associated confidence interval). The p-value derived from this technique is considered robust against violations of

normality and homoscedasticity assumptions (Field, 2018). In my analysis, bootstrapping was applied to the mixed-ANOVA, two-way ANOVA, and post hoc tests.

Step 4: Calculating trimmed means: Figure 4.2 shows that, even after the application of log transformation on the modified version of singular masculine verbal agreement in the past (i.e., the correct tokens), low values still existed at a high frequency (see the two high bars on the left side). In this situation, the regular mean values presented with the descriptive statistics could be biased (tend to be smaller). The means calculated after trimming a specific percentage of data from the lower and higher ends of the distribution would be an appropriate choice to remove this bias (I used 20% trimming, 10% from each end).

4.4 Factors of Variation in the Participants' Scores (Total Score, Overall Verbal Agreement Score, and Overall Tense Score)

The verbal agreement and tense scores were measured under different conditions. The results of the mixed-design ANOVA are shown in Table 4.1. The average verbal agreement and tense scores revealed somewhat significant differences in participants' performances across the target forms that needed to be further studied using proper statistical methods (e.g., mixed-design and two-way ANOVA). Therefore, the reason for implementing the mixed ANOVA was to investigate the significance in the differences in participant scores (verbal agreement scores, tense scores, or the total/overall of both). If participants' performance on the target forms varied (different combinations of gender and tense based on a narrative task that were presented to the participants), then such differences were assessed for whether they were more pronounced in one L1 than the other, in certain level(s) than others, or in certain level(s) but within one L1 and not the other. However, the results of the two-way ANOVA were coded for every target form (verbal

agreement or tense scores at a specific condition) to determine if the two L1s differed significantly in their scores for a given target form, if the four levels differed significantly in their scores for a given target form, or if the four levels differ significantly in their scores for a given target form but in one L1 and not the other using the results presented in this section. Consequently, using both mixed and two-way ANOVA allowed for a better understanding of the relationship between variables (e.g., L1 and proficiency), as well as where each L1 group differed in terms of target forms. Table 4.1 presents the mixed-design ANOVA p-values for the 15 repeated measures variables, which will be covered in depth in the chapter under each suitable target form category.

Table 4.1 Factors Affecting Participant Scores (p-values) because of the Performance of the Participants on the Target Forms and Membership in a Certain Group (Mixed-Design ANOVA)

Model #	**Repeated Measures Variable**	**Effect of Study Groups in Terms of the Difference in This Variable**		
		L1	**Proficiency Level**	**L1 × Proficiency Level**
1	Gender	0.606	0.296	0.639
2	Tense (verbal agreement or tense)	0.778	0.760	0.003
3	Measure (verbal agreement or tense)	0.179	0.404	0.776
4	Gender (only in past tense cases)	0.796	0.603	0.619
5	Gender (only in present tense cases)	0.119	0.184	0.912
6	Gender (only when measuring verbal agreement)	0.644	0.716	0.649
7	Gender (only when measuring tense)	0.541	0.207	0.701
8	Tense (only within singular masculine)	0.271	0.646	0.037
9	Tense (only within singular feminine)	0.685	0.833	0.010
10	Tense (only when measuring verbal agreement)	0.631	0.750	0.002
11	Tense (only when measuring tense)	0.628	0.229	0.152
12	Measure (in singular masculine)	0.045	0.730	0.042
13	Measure (in singular feminine)	0.311	0.654	0.396
14	Measure (in past tense)	0.765	0.745	0.282
15	Measure (in present tense)	0.207	0.631	0.155

Table 4.2 also shows the average of the participants' aggregate scores calculated according to the performance of the participants on the target forms. This average is taken for different groups of L1 and proficiency.

Table 4.2 Average of Participant Scores under According to the Performance of the Participants on the Target Forms by L1 and Proficiency Level

L1	Proficiency Level	Total	Masculine	Feminine	Pa	Pr	VA	T
Indonesian	Beginner	1.92	1.95	1.89	1.28	2.59	1.92	1.95
	Intermediate	2.17	2.27	2.11	1.73	2.62	2.19	2.15
	Advanced	2.30	2.34	2.27	2.31	2.51	2.34	2.26
	Near native	2.18	2.24	2.17	1.81	2.60	2.20	2.21
	Total	**2.17**	**2.22**	**2.14**	**1.82**	**2.584**	**2.18**	**2.16**
Turkish	Beginner	1.69	1.66	1.75	1.78	1.79	1.67	1.71
	Intermediate	1.69	1.75	1.65	0.97	2.44	1.73	1.67
	Advanced	1.73	1.84	1.64	1.10	2.47	1.73	1.74
	Near native	2.43	2.45	2.40	2.34	2.49	2.44	2.41
	Total	**1.86**	**1.9**	**1.85**	**1.59**	**2.36**	**1.87**	**1.87**
Total	Beginner	1.80	1.79	1.83	1.57	2.30	1.78	1.82
	Intermediate	1.96	2.04	1.90	1.43	2.54	1.97	1.96
	Advanced	2.08	2.12	2.06	1.81	2.49	2.11	2.06
	Near native	2.32	2.33	2.33	2.15	2.55	2.35	2.31
	Total	**2.04**	**2.09**	**2.01**	**1.74**	**2.494**	**2.04**	**2.04**

Pa=past tense, Pr=present tense, VA=verbal agreement, T=tense

Definitions of the aggregate scores: (1) Total score is the participants' average of all verbal agreement and tense scores under the different conditions (of gender and tense); (2) verbal agreement is the participants' average of all verbal agreement scores under the different conditions of tense (3); tense is similar to verbal agreement (4); masculine is the participants' average of all verbal agreement and tense scores under the different conditions; (5) feminine is similar to masculine; (6) past tense is the participants' average of all verbal agreement and tense scores under the different conditions of gender; and (7) present tense is similar to past tense.

I now repeat the same process (calculations of Table 4.2) but with separation of the verbal agreement and tense scores, as shown in Table 4.3.

Table 4.3 Average of Participant Scores in More Specific According to the Performance of the Participants on the Target Forms by L1 and Proficiency Level

L1	Proficiency	MPa	FPa	MPr	FPr	M_VA	F_VA	M_T	F_T	Pa_VA	Pr_VA	Pa_T	Pr_T
Indonesian	Beginner	1.29	1.29	2.65	2.54	1.99	1.86	1.91	1.98	1.13	2.73	1.40	2.47
	Intermediate	1.77	1.76	2.76	2.49	2.29	2.16	2.24	2.07	1.72	2.66	1.74	2.58
	Advanced	2.31	2.27	2.64	2.33	2.41	2.28	2.28	2.25	2.45	2.50	2.17	2.51
	Near native	1.82	1.90	2.68	2.58	2.30	2.25	2.18	2.23	1.72	2.66	1.91	2.54
	Total	**1.85**	**1.86**	**2.69**	**2.49**	**2.256**	**2.16**	**2.20**	**2.13**	**1.785**	**2.642**	**1.85**	**2.53**
Turkish	Beginner	1.74	1.82	1.73	1.87	1.64	1.74	1.68	1.75	1.91	1.64	1.62	1.92
	Intermediate	1.02	0.92	2.48	2.39	1.78	1.67	1.72	1.63	0.91	2.53	1.03	2.34
	Advanced	1.23	0.96	2.46	2.45	1.85	1.63	1.84	1.67	1.01	2.48	1.15	2.42
	Near native	2.49	2.20	2.43	2.58	2.49	2.40	2.42	2.40	2.36	2.46	2.31	2.51
	Total	**1.66**	**1.55**	**2.36**	**2.36**	**1.916**	**1.85**	**1.91**	**1.86**	**1.593**	**2.396**	**1.58**	**2.32**
Total	Beginner	1.60	1.58	2.31	2.30	1.80	1.79	1.79	1.89	1.53	2.33	1.55	2.25
	Intermediate	1.47	1.45	2.62	2.45	2.06	1.92	2.04	1.89	1.38	2.61	1.50	2.44
	Advanced	1.84	1.82	2.56	2.39	2.15	2.06	2.12	2.05	1.81	2.49	1.77	2.47
	Near native	2.24	2.10	2.56	2.58	2.38	2.34	2.29	2.33	2.18	2.59	2.13	2.52
	Total	**1.77**	**1.77**	**2.54**	**2.43**	**2.11**	**2.02**	**2.08**	**2.03**	**1.703**	**2.541**	**1.75**	**2.43**

MPa=masculine past tense, FPa=feminine past tense, MPr=masculine present tense, FPr=feminine present tense, M_VA=masculine verbal agreement, F_VA=feminine verbal agreement, M_T=masculine tense, F_T=feminine tense, Pa_VA=past verbal agreement, Pr_VA=present verbal agreement, Pa_T=past tense, and Pr_T=present tense.
(1) Masculine past tense is the participants' average of the verbal agreement and tense scores under the condition of singular masculine in the past; (2) the aggregate scores of masculine present tense, feminine past tense, and present tense are similar to those of masculine past tense; and (3) any overall score with verbal agreement or tense indicates that it is confined to the measure of verbal agreement or tense.

Table 4.1 lists different repeated measures variables. Each variable contains two conditions (e.g., gender contains two conditions, namely, masculine and feminine tokens). The participants performed certain tasks and were given scores (either for verbal agreement or tense) as they completed them. The size of the difference could be significantly different across L1s, proficiency levels, or the interactions between L1 and proficiency (higher proficiency in some L1 groups than other L1 groups). These significant differences were found when considering the repeated measures variables in the sections below.

Table 4.4 P-values of L1 and Proficiency Level in Arabic as a Third Language on Each Coded Target Form (Two-Way ANOVA)

Codes	Effect		
	L1	**Proficiency Level**	**L1 x Proficiency Level**
Code1: Masculine verbal agreement in the past	0.439	0.079	0.007
Code2: Feminine verbal agreement in the past	0.074	0.057	0.007
Code3: Masculine verbal agreement in the present	0.005	0.457	0.554
Code4: Feminine verbal agreement in the present	0.129	0.286	0.229
Code5: Masculine past tense	0.185	0.277	0.157
Code6: Feminine past tense	0.306	0.017	0.189
Code7: Masculine present tense	0.000	0.030	0.301
Code8: Feminine present tense	0.342	0.514	0.361
Participant Average of All Codes	**0.052**	**0.020**	**0.075**

The average verbal agreement and tense scores according to the performance of the participants on the target forms (gender × tense 2 × 2) are given by L1 and participants proficiency levels, as shown in Table 4.5 below.

Table 4.5 Average Verbal Agreement/Tense Scores by L1 and Proficiency Level

L1	Proficiency Level	MPa_VA	FPa_VA	MPr_VA	FPr_VA	MPa_T	FPa_T	MPr_T	FPr_T
Indonesian	Beginner	1.21	1.05	2.79	2.68	1.29	1.51	2.50	2.46
	Intermediate	1.73	1.80	2.88	2.51	1.81	1.69	2.65	2.50
	Advanced	2.44	2.44	2.67	2.27	2.16	2.15	2.58	2.43
	Near native	1.78	1.79	2.75	2.64	1.90	1.99	2.60	2.52
	Total	**1.82**	**1.84**	**2.80**	**2.52**	**1.89**	**1.88**	**2.58**	**2.48**
Turkish	Beginner	1.84	1.94	1.59	1.72	1.62	1.67	1.85	2.00
	Intermediate	0.96	0.85	2.61	2.48	1.07	0.99	2.35	2.30
	Advanced	1.08	0.92	2.57	2.43	1.31	0.98	2.37	2.45
	Near native	2.61	2.16	2.41	2.59	2.37	2.24	2.46	2.56
	Total	**1.65**	**1.53**	**2.43**	**2.39**	**1.67**	**1.54**	**2.30**	**2.34**
Total	Beginner	1.55	1.53	2.36	2.33	1.59	1.59	2.25	2.26
	Intermediate	1.38	1.42	2.74	2.51	1.57	1.47	2.48	2.39
	Advanced	1.81	1.84	2.63	2.34	1.87	1.75	2.48	2.44
	Near native	2.30	2.07	2.58	2.62	2.20	2.11	2.52	2.53
	Total	**1.75**	**1.71**	**2.63**	**2.46**	**1.79**	**1.78**	**2.46**	**2.42**

MPa=masculine past tense, FPa=feminine past tense, MPr=masculine present tense, FPr=feminine present tense, M_VA=masculine verbal agreement, F_VA=feminine verbal agreement, M_T=masculine tense, F_T=feminine tense, Pa_VA=past verbal agreement, Pr_VA=present verbal agreement, Pa_T=past tense, and Pr_T=present tense

The results reported in each of the eight subsections below concern the following: (1) the main (statistical) effect of L1 groups on one of the eight target forms; (2) the interaction effect between L1 and proficiency on the same target form; (3) the between-group effects on the same target form (this will cover the L1 effects, comparing the performance of the L1 Indonesian groups versus the L1 Turkish groups); and (4) the within-group effects on the same target form (this will cover proficiency effects, comparing performance across the four proficiency levels within each of the two L1 groups).

4.4.1 Tense

4.4.1.1 Past Tense

4.4.1.1.1 Singular Feminine Past

No significant main effect was found for L1 or proficiency when analyzing the singular feminine in the past tense, according to mixed-design ANOVA tests. Additionally, mixed-design ANOVA tests show interaction between L1 and proficiency (higher proficiency in some L1 groups than other L1 groups) has a significant effect ($p = 0.010$) (see Table 4.1 and Appendix 11). Further analyses revealed that the proficiency of the two different L1 groups had a main effect in singular feminine past tense, with ($p = 0.017$), according to the two-way ANOVA where L1 Indonesian participants outperformed their Turkish counterparts (see Tables 4.4–4.5 and Appendix 11). Post-hoc comparisons using TukeyHSD tests showed significant differences in the singular feminine past tense between the four proficiency levels, particularly between beginners and near-native speakers ($p = 0.002$) and between intermediate learners and near-native speakers ($p = 0.000$; see Appendix 8). Additionally, the following results were found: significant differences between the L1 Turkish near-native group versus the L1 Turkish

advanced group (p = 0.034), and the L1 Turkish near-native group versus the L1 Turkish intermediate group (p = 0.008). After reviewing the post-hoc tests and finding additional significant results, I ran a two-way ANOVA test to examine all possible comparisons between L1 groups of the two L1s on the singular feminine in the past. The goal was to compare the performances of the L1 Indonesian and L1 Turkish groups. There was a considerable disparity in the proficiency ($F(3,78) = 3.49$, $p < 0.019$, partial $\eta^2 = 0.11$) on the singular feminine in the past, according to two-way ANOVA tests (see Appendix 11). There was an interaction effect between the L1 and the proficiency ($F(3,78) = 2.85$, $p < 0.042$, partial $\eta^2 = 0.10$). To explain this significance for the L1 Indonesian groups, the scores per proficiency are as follows: (1) beginner: 1.51; (2) intermediate: 1.69; (3) advanced: 2.15; and (4) near-native: 1.99. In the L1 Turkish group, the scores per proficiency are as follows: (1) beginner: 1.67; (2) intermediate: 0.99; (3) advanced: 0.98; and (4) near-native: 2.24 (see Table 4.5). In sum, there is some backsliding in some groups of both L1 across the four proficiency levels in singular feminine past tense (i.e., higher proficiency levels perform better). In the intermediate and advanced proficiency levels, the Indonesian L1 groups outperformed their Turkish counterparts, whereas at the beginner and near-native proficiency levels, the Turkish L1 participants outperformed their Indonesian counterparts in the singular feminine in the past tense.

4.4.1.1.2 Singular Masculine Past

Analyzing the singular masculine in the past tense did not reveal any significant main effect for either L1 or proficiency, according to the mixed-design ANOVA tests (see Table 4.1 and Appendix 11). A significant result concerning the singular masculine in the past tense was the interaction between L1 and proficiency (higher proficiency in some L1 groups than other L1

groups) which has a significant effect, according to the mixed-design ANOVA tests (p = 0.037). Post-hoc comparisons using TukeyHSD tests revealed significant differences in the singular masculine past tense between the four proficiency levels of the two L1 groups, particularly between beginners and near-native speakers (p = 0.000) and between intermediate learners versus near-native speakers (p = 0.007; see Appendix 8). Additionally, the following results were found: significant differences in the singular masculine past tense between the L1 Turkish near-native group versus the L1 Turkish advanced group (p = 0.039), and the L1 Turkish near-native group versus the L1 Turkish intermediate group (p = 0.002). After reviewing the post-hoc tests and finding more significant results, I ran a two-way ANOVA test. The goal was to compare the performance of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of both L1s on the singular masculine in the past. There was a considerable disparity in the proficiency ($F(3,78) = 3.65$, $p < 0.016$, partial $\eta^2 = 0.12$) on the singular masculine in the past tense. There was an interaction effect ($F(3,78) = 3.77$, $p < 0.013$, partial $\eta^2 = 0.13$) between the proficiency and the L1. However, the disparity in the Indonesian groups was only in the near native group which is backsliding. The disparity seems to be only in the Turkish groups which was a novel finding concerning the singular masculine in the past tense, according to two-way ANOVA tests (see Appendix 11). To explain this significance in the L1 Indonesian groups, the scores per proficiency are as follows: (1) beginner: 1.29; (2) intermediate: 1.81; (3) advanced: 2.16; and (4) near-native: 1.90. In the L1 Turkish group, the scores per proficiency are as follows: (1) beginner: 1.62; (2) intermediate: 1.07; (3) advanced: 1.31; and (4) near-native: 2.37 (see Table 4.5). In sum, there is some backsliding in some groups of both L1 across the four proficiency levels in the singular masculine past tense (i.e., higher proficiency levels perform better). At the intermediate and advanced proficiency levels, L1

Indonesian participants outperformed their Turkish counterparts, whereas in the beginner and near-native proficiency levels, Turkish L1 outperformed their Indonesian counterparts in the singular masculine in the past tense.

4.4.1.2 Present Tense

4.4.1.2.1 Singular Feminine Present

No significant main effect was found for L1 or proficiency when analyzing the singular feminine in the present tense. According to mixed-design ANOVA tests, the interaction between L1 and proficiency (higher proficiency in some L1 groups than other L1 groups) has a significant effect ($p = 0.010$) (see Table 4.1 and Appendix 11). Post-hoc comparisons using TukeyHSD tests demonstrated significant differences in the singular feminine present tense between the four proficiency levels of the two different L1 groups, particularly between beginners and near-native speakers ($p = 0.010$) and between intermediate learners and near-native speakers ($p = 0.027$; see Appendix 8). Additionally, there was a significant difference in the singular feminine present tense between the L1 Turkish near-native group and the L1 Turkish beginner group ($p = 0.029$). After reviewing the post-hoc tests and finding additional significant results, I ran a two-way ANOVA test. The goal was to compare the performance of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of both L1s. There was no statistical significance found here. Table 4.5 demonstrates that, if the singular feminine present tense is considered, the scores for the L1 Indonesian groups per proficiency were as follows: (1) beginner: 2.46; (2) intermediate: 2.50; (3) advanced: 2.43; and (4) near-native: 2.52. The L1 Indonesian beginners outperformed the L1 Indonesian advanced learners in the singular feminine present (see Table 4.5). In the L1 Turkish group, the scores per proficiency were as follows: (1)

beginner: 2.00; (2) intermediate: 2.30; (3) advanced: 2.45; and (4) near-native: 2.56. At the beginner and intermediate proficiency levels, L1 Indonesian outperformed their Turkish counterparts in the singular feminine present tense, whereas at the advanced and near-native proficiency levels, Turkish L1 participants outperformed their Indonesian counterparts.

4.4.1.2.2 Singular Masculine Present

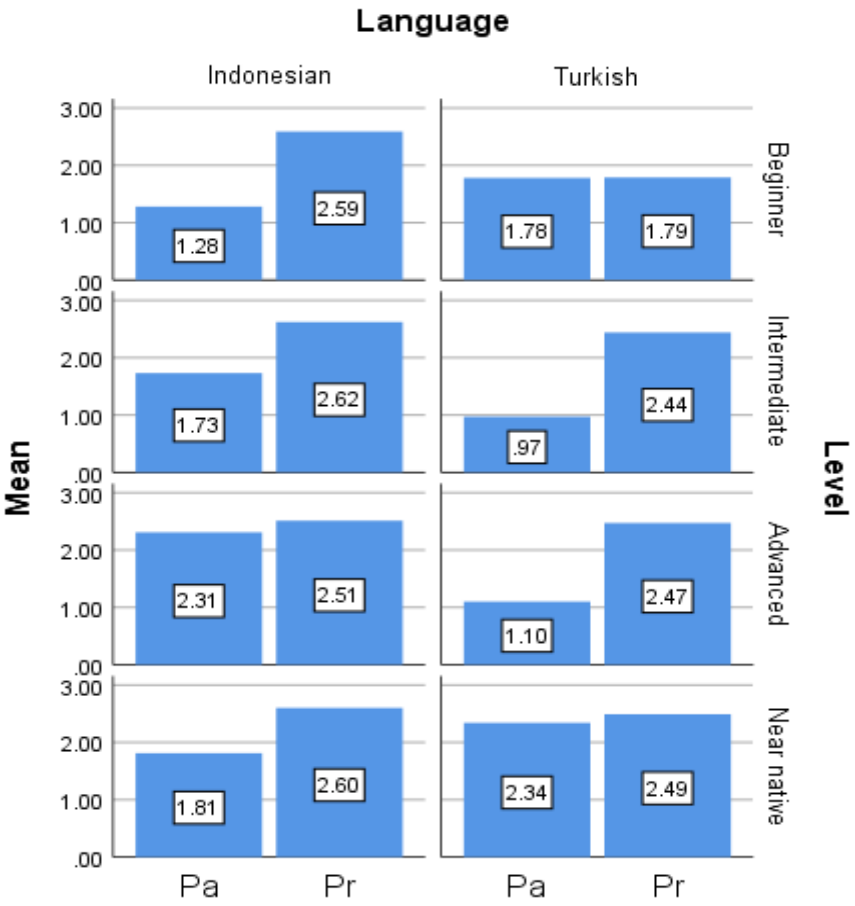
Analyzing the singular masculine in the present tense did not reveal any significant main effect for either L1 or proficiency, according to the mixed-design ANOVA tests (see Table 4.1 and Appendix 11). A significant result concerning the singular masculine in the present tense was the interaction between L1 and proficiency (higher proficiency in some L1 groups than other L1 groups) which has a significant effect, according to the mixed-design ANOVA tests ($p = 0.037$). The proficiency of the two different L1 groups had a main effect in singular masculine present tense, with ($p = 0.030$), according to the two-way ANOVA where the L1 Indonesian participants outperformed their Turkish counterparts (see Tables 4.4–4.5 and Appendix 11). Further analyses indicated that L1 had a significant effect on the singular masculine present tense ($p = 0.000$) according to two-way ANOVA tests (see Table 4.4 and Appendix 11). Post-hoc comparisons using TukeyHSD tests depicted significant differences in the singular masculine present tense between the four proficiency levels, particularly between beginners and intermediate learners ($p = 0.035$). There was also a near significant difference between beginners and near-native speakers ($p = 0.057$; see Appendix 8). Additionally, the following results were found: significant disparities between the L1 Turkish beginner group and the L1 Indonesian counterparts ($p = 0.009$), the L1 Turkish intermediate group versus the L1 Turkish beginner group ($p = 0.039$), and the L1 Turkish near-native group versus the L1 Turkish beginner group (p

= 0.020). After reviewing the post-hoc tests and finding more significant results, I conducted a two-way ANOVA test. The goal was to compare the performances of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of both L1s. There was another confirmation concerning the effect of L1 on the performance of the two L1 groups ($F(1,78) = 13.33$, $p < 0.000$, partial $\eta^2 = 0.14$) on the singular masculine in the present tense. Additionally, there was a considerable disparity in the proficiency ($F(3,78) = 3.56$, $p < 0.018$, partial $\eta^2 = 0.12$) on the singular masculine in the present tense. As Table 4.5 shows, the average score of singular masculine present tense is better in the L1 Indonesian groups (singular masculine present tense: 2.58 for the L1 Indonesian groups compared with 2.30 for the L1 Turkish groups). In sum, the L1 Indonesian groups overall were better at performing the singular masculine present tense. Specifically, in the L1 Indonesian group, the scores per proficiency were as follows: (1) beginner: 2.50; (2) intermediate: 2.65; (3) advanced: 2.58; and (4) near-native: 2.60. The L1 Indonesian intermediate learners outperformed the L1 Indonesian advanced and near-native learners in the singular masculine present tense. In the L1 Turkish group, the scores per proficiency were as follows: (1) beginner: 1.85; (2) intermediate: 2.35; (3) advanced: 2.37; and (4) near-native: 2.46 (see Table 4.5). L1 Indonesian participants outperformed their Turkish counterparts at all proficiency levels in the singular masculine present tense.

The results for the past and present tense mixed-design ANOVA tests irrespective of gender revealed that the scores for these tenses did not differ significantly between L1 Indonesian and L1 Turkish participants nor among the four proficiency levels (see Table 4.1 and Appendix 11). However, the scores were found to have a significant main effect within L1 groups ($p = 0.003$). To explain this significance, see Table 4.2. The table shows average differences between past tense cases and present tense cases were calculated for each level of

each L1. In the L1 Indonesian groups, the differences in Table 4.2 irrespective of gender per proficiency are as follows: (1) beginner: 2.59–1.28 = 1.31, (2) intermediate: 2.62–1.73 = 0.89, (3) advanced: 2.51–2.31 = 0.19, and (4) near-native: 2.60–1.81 = 0.79. The score is high (1.31) for beginners and low for the advanced (0.19) (see Figure 4.3). The differences between past tense cases and present tense cases were found in the L1 Turkish group: (1) beginner: 1.79–1.78 = 0.01, (2) intermediate: 2.44–0.97= 1.47, (3) advanced: 2.47–1.10 = 1.37, and (4) near-native: 2.49–2.34= 0.15 (see Table 4.2). The score is very low (0.01) at the beginner and near-native (0.15) proficiency levels. In both L1 participants, differences across proficiency levels are more severe in the L1 Turkish groups, and this explains why, according to the mixed-design ANOVA tests, the interaction between L1 and proficiency (higher proficiency in some L1 groups than other L1 groups) has a significant effect. The variations in scores suggest that in the L1 Indonesian groups, the performance (in terms of scores) of past and present tense improved for beginners, intermediates, and near-natives to a small extent, but not for the advanced group. In the L1 Turkish groups, performance from the past to the present improved moderately at the middle proficiency levels (intermediate and advanced).

Figure 4.3 Aggregate Mean Scores of Past Tense and Present Tense Cases by L1 and Proficiency Level



Pa=past tense, Pr=present tense

4.4.2 Verbal Agreement

4.4.2.1 Verbal Agreement in the Past

4.4.2.1.1 Singular Feminine Verbal Agreement in the Past

The scores of the L1 Indonesian and L1 Turkish participants on singular feminine verbal agreement in the past tense were not statistically significant, according to mixed-design ANOVA tests, nor were they statistically significant among the four proficiency levels. The interaction effect between L1 and proficiency has a significant effect ($p = 0.007$), according to the two-way ANOVA. There was no significant difference regarding the scores for the singular feminine

agreement in the past tense between the L1 Indonesian and L1 Turkish participants (see Table 4.1 and Appendix 11). The singular feminine verbal agreement in the past has a near-significant effect for proficiency (a p = 0.057, which is just slightly above 0.05), and the four proficiency levels vary in the same way as that found in singular feminine past tense (i.e., semi-logical order) (see Table 4.5). There was a nearly significant difference between the intermediate and near-native levels between the proficiency levels of the two L1 groups (p = 0.052), according to post-hoc analyses using TukeyHSD tests (see Appendix 8). Additionally, the following results were found: significant differences in singular feminine verbal agreement in the past tense between the L1 Turkish advanced group versus their L1 Indonesian counterparts (p = 0.046), and the L1 Turkish near-native group versus the L1 Turkish intermediate group (p = 0.041). After reviewing the post-hoc tests and finding additional significant results, I ran a two-way ANOVA test. The goal was to compare the performance of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of both L1s. The only significant result concerning the singular feminine verbal agreement in the past was the interaction between the L1 and proficiency ($F(3,78) = 5.70$, $p < 0.001$, partial $\eta^2 = 0.18$), according to two-way ANOVA tests. The results showed that overall, the L1 Indonesian participants outperformed their Turkish counterparts (see Table 4.4 and Appendix 11). The pattern of variation of the average scores for singular feminine verbal agreement in the past within groups (i.e., across proficiency levels) is similar to that found in the singular masculine agreement in the past (effect of L1 × proficiency on singular feminine verbal agreement in the past) (see Table 4.5). The results showed that overall, the L1 Indonesian participants outperformed their Turkish counterparts. An interesting finding here is that the L1 Indonesian advanced group performed much better than the near-native group (average score: 2.44 compared with 1.79, respectively) (see Table 4.5). For the L1

Turkish group, beginners and near-natives performed better than those in the middle proficiency levels (with near-natives being better than beginners, with an average score of 2.16 compared with 1.94, respectively). The range of variation in the L1 Indonesian group is 1.05 to 2.44, and in the L1 Turkish group, it is 0.85 to 2.16 (note that 0.85 is the average score of the intermediate group, and 0.92 is the average score of the advanced group); the range of variation is higher in the L1 Turkish group, which indicates that they vary in the average score of singular feminine verbal agreement in the past more than those in the L1 Indonesian groups do, and this explains the significant interaction (see Figure 4.3).

4.4.2.1.2 Singular Masculine Verbal Agreement in the Past

The scores of the L1 Indonesian and L1 Turkish participants on singular masculine verbal agreement in the past were not statistically significant, according to mixed-design ANOVA tests, nor were they statistically significant among the four proficiency levels. For singular masculine verbal agreement in the past, there was a significant effect related to the interaction effect ($p = 0.007$) according to the two-way ANOVA tests (see Tables 4.4–4.5 and Appendix 11). Post-hoc comparisons using TukeyHSD tests revealed significant differences in singular masculine verbal agreement in the past between the proficiency levels of the two different L1 groups, particularly for beginners versus near-native speakers ($p = 0.045$) and intermediate learners versus near-native speakers ($p = 0.010$; see Appendix 8). Additionally, the following results were found: significant differences in singular masculine verbal agreement in the past between the L1 Turkish near-native group versus the L1 Turkish advanced group ($p = 0.025$), and the L1 Turkish near-native group versus the L1 Turkish intermediate group ($p = 0.007$). After reviewing the post-hoc tests and finding more significant results, I ran a two-way ANOVA test. The goal was

to compare the performance of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of both L1s. There was a considerable disparity in the proficiency ($F(3,78) = 5.70$, $p < 0.001$, partial $\eta^2 = 0.18$) on singular masculine verbal agreement in the past. The findings showed the effect of the L1 on the performance of the two groups on the singular masculine verbal agreement in the past ($F(3,78) = 4.61$, $p < 0.005$, partial $\eta^2 = 0.15$). The results showed that overall, the L1 Indonesian participants outperformed their Turkish counterparts in singular masculine verbal agreement in the past. An interesting finding here is that the L1 Indonesian advanced group performed much better than the near-native group (average score: 2.44 compared with 1.78, respectively) (see Table 4.5). For the L1 Turkish group, beginners and near-natives performed better than those in the middle proficiency levels (with near-natives being better than beginners, with an average score of 2.61 compared with 1.84, respectively) (see Table 4.5). The range of variation in the L1 Indonesian group is 1.21 to 2.44, and in the L1 Turkish group, it is 0.96 to 2.61 (note that 0.96 is the average score of the intermediate group, and 1.08 is the average score of the advanced group); the range of variation is higher in the L1 Turkish groups, which indicates that they vary in the average score of singular masculine verbal agreement in the past more than those in the L1 Indonesian groups do, and this explains the significant interaction (see Table 4.5).

4.4.2.2 Verbal Agreement in the Present

4.4.2.2.1 Singular Feminine Verbal Agreement in the Present

The scores of the L1 Indonesian and L1 Turkish participants on singular feminine verbal agreement in the present were not statistically significant, according to mixed-design ANOVA tests, nor were they statistically significant among the four proficiency levels. A significant result

concerning the singular feminine in the present tense was the interaction between L1 and proficiency (higher proficiency in some L1 groups than other L1 groups) which has a significant effect, according to the mixed-design ANOVA tests (p = 0.002) (see Table 4.1 and Appendix 11). Post-hoc comparisons using TukeyHSD tests demonstrated no significant differences in the singular feminine verbal agreement in the present tense between the four proficiency levels of the two L1 groups. Additionally, the following results were found: the L1 Turkish beginners versus their Indonesian counterparts (p = 0.008), the L1 Turkish intermediate group versus the L1 Turkish beginner group (p = 0.046), and the L1 Turkish near-natives versus the L1 Turkish beginners (p = 0.029)—all displayed notable disparities in the singular feminine verbal in the present tense. After reviewing the post-hoc tests and finding extra significant results, I ran a two-way ANOVA test. The goal was to compare the performances of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of both L1s. The results of the interaction between the L1 and proficiency ($F(3,78) = 3.76$, $p < 0.014$, partial $\eta^2 = 0.12$) confirm the findings in Table 4.1 on singular feminine verbal agreement in the present. There is also a marginal result (p = 0.077) concerning the effect of the L1 on the performance of singular feminine verbal agreement in the present. The L1 Indonesian groups overall exhibited superior performance in terms of singular feminine verbal agreement in the present. Specifically, in the L1 Indonesian groups, the scores per proficiency were as follows: (1) beginner: 2.68; (2) intermediate: 2.51; (3) advanced: 2.27; and (4) near-native: 2.64 (see Table 4.5). The L1 Indonesian beginners and near-native speakers did better than those in intermediate or advanced. In the L1 Turkish group, the scores per proficiency were as follows: (1) beginner: 1.72; (2) intermediate: 2.48; (3) advanced: 2.43; and (4) near-native: 2.59 (see Table 4.5). Finally, the L1

Indonesian participants outperformed their Turkish counterparts at all proficiency levels except the intermediate, where Turkish L1 participants outperformed (see Table 4.5).

4.4.2.2.2 Singular Masculine Verbal Agreement in the Present

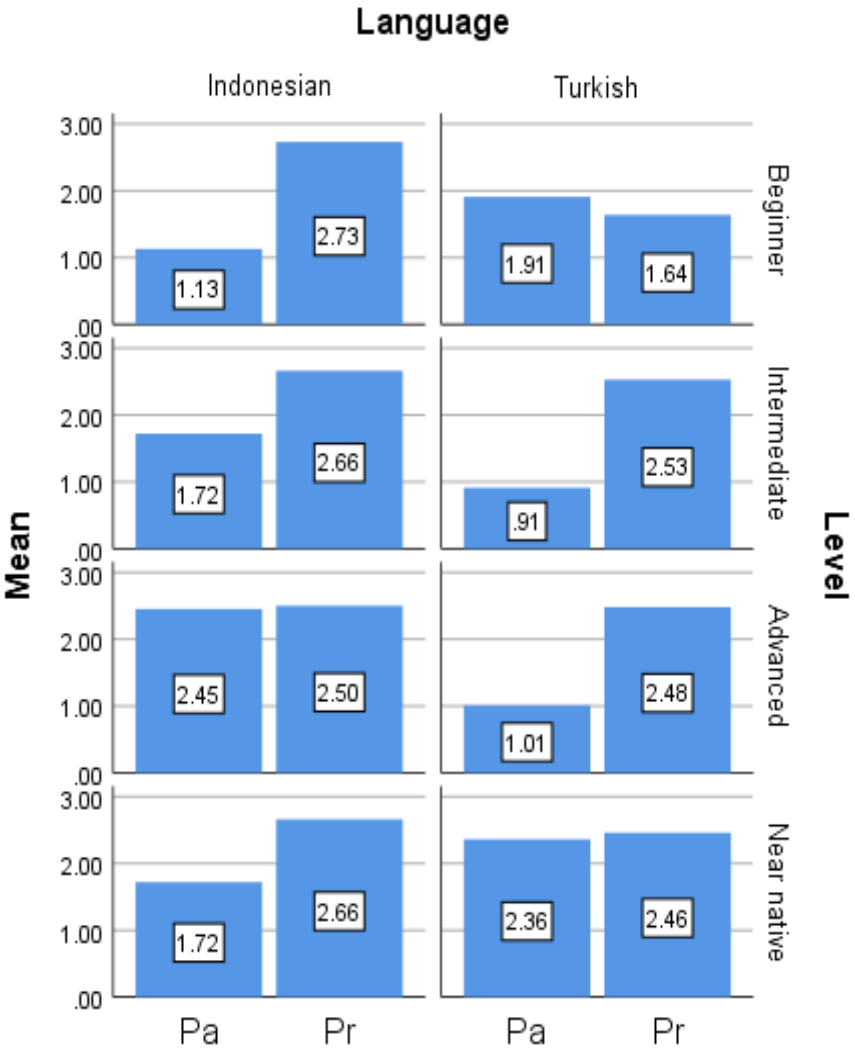
The scores of the L1 Indonesian and L1 Turkish participants on singular masculine verbal agreement in the present were not statistically significant, according to mixed-design ANOVA tests, nor were they statistically significant among the four proficiency levels. There were no significant results for singular masculine verbal agreement in the present tense in terms of the interaction between L1 and proficiency. However, the scores were found to have a significant effect within groups ($p = 0.002$) (see Table 4.1 and Appendix 11). Even though mixed-design ANOVA tests revealed no significant differences between the L1s, further analysis revealed that L1 has a significant effect on singular masculine verbal agreement in the present, with ($p = 0.005$), according to two-way ANOVA tests (see Table 4.4 and Appendix 11). Follow-up Post-hoc comparisons using TukeyHSD tests showed significant differences in singular masculine verbal agreement in the past between the four proficiency levels, particularly for beginners versus near-native speakers ($p = 0.045$) and intermediate learners versus near-native speakers ($p = 0.010$; see Appendix 8). Additionally, the following results were found: significant differences in singular masculine verbal agreement in the present tense between L1 Turkish beginners versus their Indonesian counterparts ($p = 0.000$), the L1 Turkish beginner group versus the L1 Turkish advanced group ($p = 0.0007$), and the L1 Turkish intermediate group versus the L1 Turkish beginner group ($p = 0.0004$). After reviewing the post-hoc tests and finding additional significant results, I ran a two-way ANOVA test. The goal was to compare the performances of the L1 Indonesian and L1 Turkish groups to examine all possible comparisons between the L1 groups of

both L1s. According to the test results, there was an interaction effect between the L1 and proficiency on singular masculine verbal agreement in the present ($F(3,78) = 3.97$, $p < 0.010$, partial $\eta^2 = 0.13$). In the present, there was a significant disparity in proficiency ($F(3,78) = 3.20$, $p < 0.027$, partial $\eta^2 = 0.11$) for singular masculine verbal agreement. The disparity in proficiency levels across L1 groups was a novel finding concerning the singular masculine verbal agreement in the present tense, according to two-way ANOVA (see Appendix 11). Finally, the effect of L1 on the performance of the two languages in the singular masculine present tense was significantly different ($F(3,78) = 11.00$, $p < 0.001$, partial $\eta^2 = 0.12$). As Table 4.5 shows, the average scores of singular masculine verbal agreement in the present are better in the L1 Indonesian groups (2.80 for the L1 Indonesian groups compared with 2.43 for the L1 Turkish groups). Specifically, in the L1 Indonesian groups, the scores per proficiency were as follows: (1) beginner: 2.79; (2) intermediate: 2.88; (3) advanced: 2.67; and (4) near-native: 2.75 (see Table 4.5). The L1 Indonesian intermediate group outperformed the L1 Indonesian advanced and near-native groups. In the L1 Turkish groups, the scores per proficiency were as follows: (1) beginner: 1.59; (2) intermediate: 2.61; (3) advanced: 2.57; and (4) near-native: 2.41(see table 4.5). The L1 Turkish intermediate group outperformed the L1 Indonesian advanced and near-native groups in terms of singular masculine verbal agreement in the present tense.

To explain this significance, see Table 4.3. The table shows average differences between verbal agreement past tense cases and verbal agreement present tense cases were calculated per level for each L1. For the L1 Indonesian groups, the scores of overall verbal agreement in the past and present per proficiency were as follows: (1) beginner: 2.73–1.13 = 1.60; (2) intermediate: 2.66–1.72 = 0.94; (3) advanced: 2.50–2.45 = 0.05; and (4) near-native: 2.66–1.72 =

0.94 (see Figure 4.4). The following differences were found for the L1 Turkish group: (1) beginner: 1.64–1.91 = 0.27; (2) intermediate: 2.53–0.91 = 1.62; (3) advanced: 2.48–1.01 = 1.47; and (4) near-native: 2.46–2.36 = 0.10 (see Figure 4.4). The within-group difference is greater in the L1 Turkish group, which explains the interaction between L1 and proficiency. Recall, the average verbal agreement and tense scores indicated clear variations in the participants' performances between the target forms, requiring further investigation with the help of appropriate statistical tests (e.g., mixed, and two-way ANOVA). The practical meaning of this finding is that in the L1 Indonesian groups the performance of verbal agreement in the past and present increases in the beginners and, to a lesser extent, in those in the intermediate and near-native groups but not those in the advanced group. In the L1 Turkish groups, the performance of verbal agreement in the past and present increases moderately in the middle proficiency levels (intermediate and advanced), but there are almost no considerable improvements in the near-native levels.

Figure 4.4 Aggregate Mean Scores of Verbal Agreement in the Past Tense and Present Tense Cases by L1 and Proficiency Level



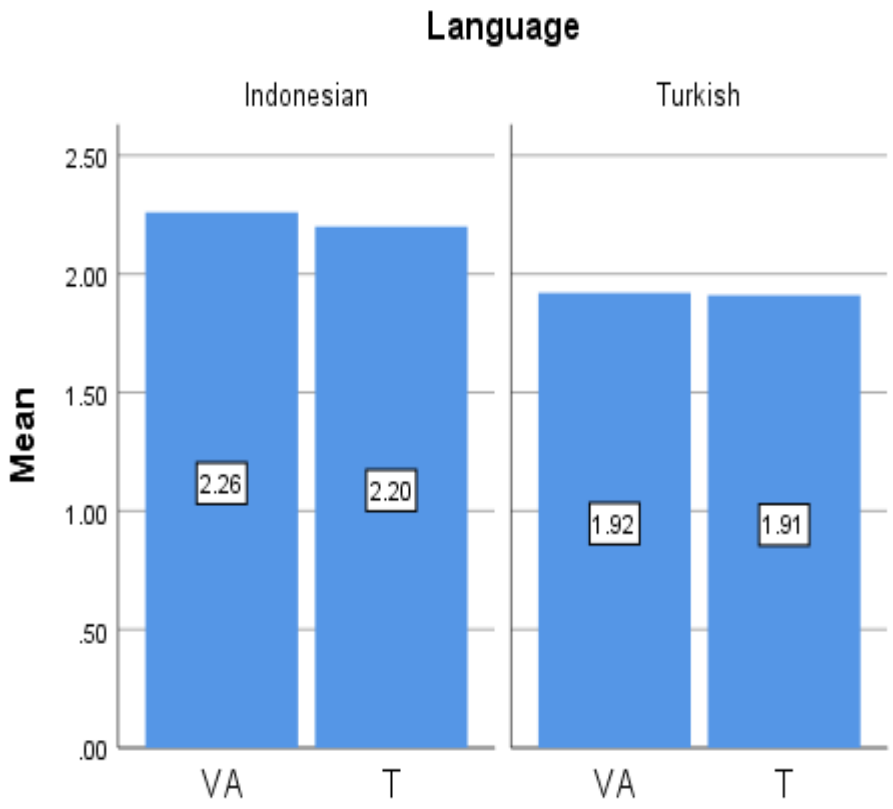
Pa=past tense, Pr=present tense

4.4.3 Performance of Verbal Agreement and Tense

The overall scores of verbal agreement and tense, including just singular masculine, differ considerably between the two L1 participants according to the mixed-design ANOVA tests ($p = 0.045$) (see Table 4.1 and Appendix 11). Table 4.3 shows that within the L1 Indonesian groups, the mean difference between the overall singular masculine tense and singular masculine verbal agreement scores was 2.256–2.20 = 0.056, whereas in the Turkish L1 groups, the mean difference was 1.916–1.91= 0.006. A relative difference between the two scores exists (see

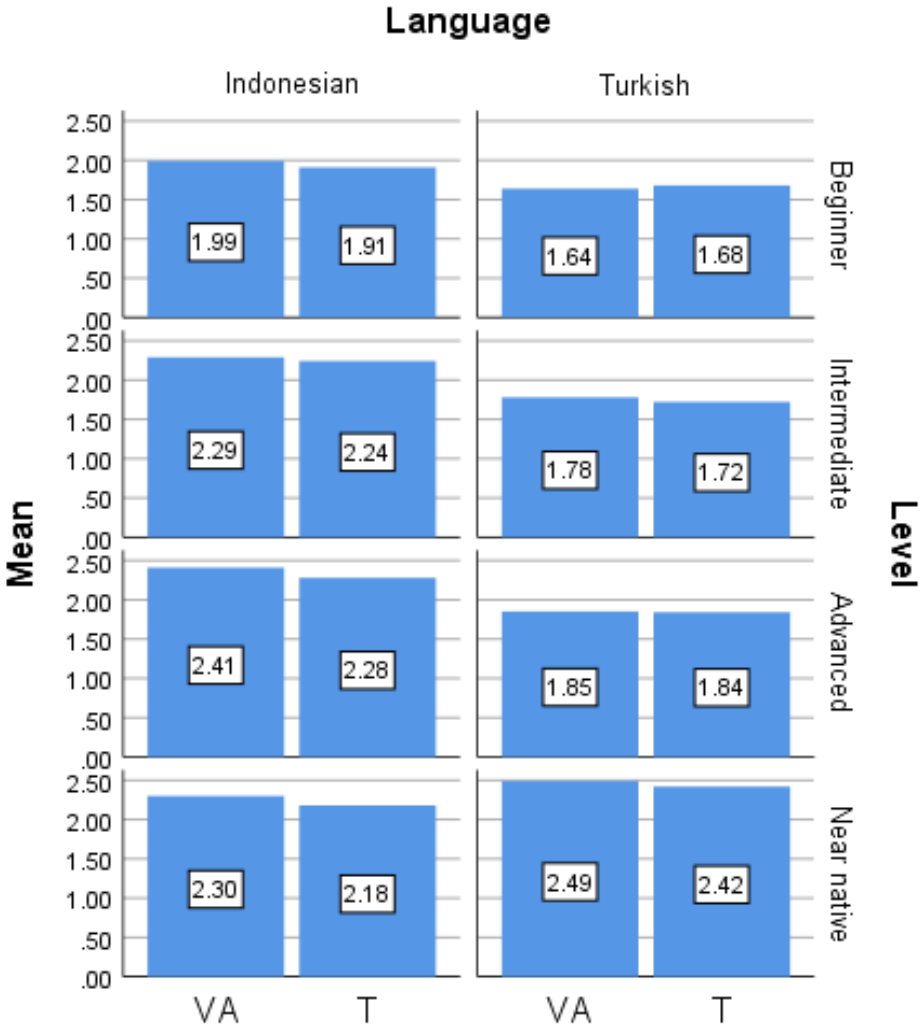
Figure 4.5). The practical meaning of this is that, considering singular masculine cases only, the L1 Indonesian groups have a relatively better overall verbal agreement score than tense score, whereas in the L1 Turkish group, this difference is almost absent. As far as singular masculine cases are concerned, the overall score difference between verbal agreement and tense is not significantly different between groups (i.e., the L1 Indonesian versus L1 Turkish groups), whereas the scores were found to have a significant within-group effect (i.e., proficiency levels within groups) in the L1 Indonesian groups ($p = 0.042$) according to the mixed-design ANOVA tests (see Table 4.1 and Appendix 11). As shown in Table 4.3, in the L1 Indonesian groups, the scores per proficiency were as follows: (1) beginner: 1.91–1.99 = −0.08; (2) intermediate: 2.24–2.29 = −0.05; (3) advanced: 2.28–2.41 = −0.13; and (4) near-native: 2.18–2.30 = −0.12. The mean difference was relatively higher in the advanced/near-native proficiency levels. The following differences were found for the L1 Turkish group: (1) beginner: 0.04; (2) intermediate: 0.06; (3) advanced: 0.01; and (4) near-native: 0.07 (see Figure 4.6). The differences are greater in the L1 Turkish group, which explains the significant effect interaction between the L1 and proficiency, according to the mixed-design ANOVA tests. The practical meaning of this finding is that, in the L1 Indonesian groups, the gap between the verbal agreement scores is generally smaller than that between the tense scores, and this is found more clearly in the advanced/near-native proficiency levels. In the L1 Turkish group, the opposite is found in the beginner group (relatively better tense scores than verbal agreement scores); there is no difference (between the two types of scores) in the advanced group, and there are relatively better verbal agreement scores (than tense scores) in the intermediate/near-native groups.

Figure 4.5 Mean Verbal Agreement and Tense Scores by L1



VA=verbal agreement, T=tense

Figure 4.6 Mean Verbal Agreement and Tense Scores by L1 and Proficiency Level

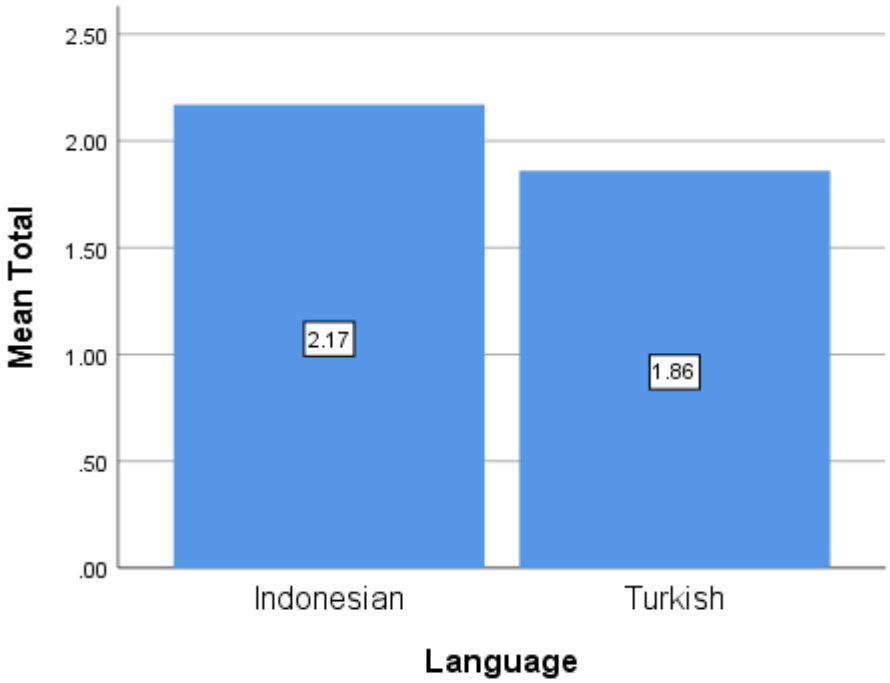


VA=verbal agreement, T=tense

The sum of each participant's target form scores was used to evaluate their overall performance. The performance of the two L1 groups are nearly significantly different in terms of overall performance ($p = 0.052$, which is just slightly higher than 0.05), according to the two-way ANOVA tests. The results showed that overall, the L1 Indonesian participants somewhat outperformed their Turkish counterparts (see Table 4.4 and Appendix 11). This can be addressed in by raising the number of participants while maintaining a higher number of tokens to see which one of the tokens will reach the significance level. In other words, if more participants had

been eager to participate in the study, the researcher would have been able to analyze more tokens of target forms and obtain significant main effect results on the participants' overall performance. With the current total number of participants and tokens, the outcome is little higher than 0.05 in terms of p-value. As Table 4.2 shows, the average of the overall participant scores is 2.17 in the Indonesian language compared with 1.86 in the Turkish language; the L1 Indonesian participants has relatively better overall performance than the Turkish language (see Figure 4.7).

Figure 4.7 Mean of the Overall Target Form Score per Participant by L1

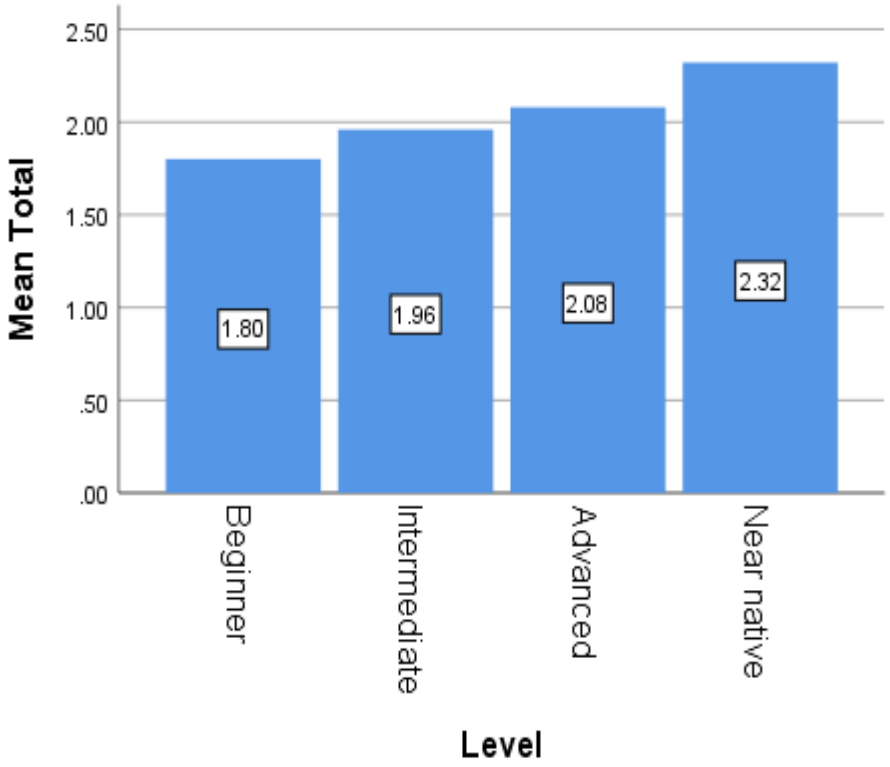


Language=L1

Finally, to present a holistic picture of the performance, the overall score is also significantly different across the four levels of participants (a p = 0.020), according to the two-

way ANOVA tests (see Table 4.4 and Appendix 11). As Table 4.2 shows, the average overall performance across the four proficiency levels gradually increases from a lower to a higher proficiency (1.80 for beginners, 1.96 for intermediate, 2.08 for advanced, and 2.32 for near-native) (see Figure 4.8).

Figure 4.8 Mean of the Overall Target Form Score per Participant by Proficiency Level



Level=proficiency level

4.5 Nature of Target Forms in Tense and Agreement

Based on the obtained data, this section covers both correct and incorrect examples of tense and agreement. The data were fully coded using codes related to the target forms. Each code has its own color to distinguish between correct and incorrect target forms. Each target

form was coded and verified multiple times to ensure that the coding assignments and code colors were correct. The amount of coded data is huge, exceeding ten thousand codes (see Appendix 9). I supplied samples here to demonstrate both accurate and incorrect tokens of the target forms.

Example (1) displays correct verbal agreement inflection features in the present tense: third person singular feminine. The indicative was not a target form; hence it is included here within parentheses.

(1) hiya tuʃāhid-(u) l-tilfāz

she 3.s.f watch-(indic) the-tv

"She watches / is watching TV."

(Indo-B8: Indo-Group-B)

Sentence (2) shows the present verb inflected for third-person singular feminine agreement with a singular masculine subject with the prefix {ta-}.

(2) IL: θumma **ya-**qraʔ-(u) l-madʒallah fi l-sˤabāħ

and/then 3.s.m-read-(Indic) the-magazine in the-morning

"And/then he reads / is reading the magazine in the morning."

TL: θumma **ta-**qraʔ-(u) l-madʒallah fi l-sˤabāħ

and/then 3.s.f-read-(Indic) the-magazine. in the-morning

"And/then she reads / is reading the magazine in the morning."

(Indo-I1: Indo-Group-I)

The usage of the third-person singular present tense is correct, but the agreement with the singular feminine subject is incorrect. The reason is that the verb was produced in the third-

person singular masculine and should have been formed in the third-person singular feminine, as shown in (2).

The verb shown in example (3) is incorrect because the verb was produced in the third-person singular present tense in a third-person singular past tense context. The verb should have been formed in the third-person singular masculine past tense. However, the agreement between the verb and the subject is correct in the present form. The accusative was not a target form; hence it is included here within parentheses.

(3)	IL:	ya-lʕab-(u)	kurat-(a)	l-qulf
		3.s.m-play-(Indic)	ball-(acc)	the-golf
		"She plays / is playing the golf."		
	TL:	laʕiba	kurat-(a)	l-qulf
		play-3.s.m	ball-(acc)	the-golf
		"She played the golf."		
		(Indo-A5: Indo-Group-A)		

Sentence (4) displays a third-person singular present verb that should have been produced in the past tense. However, the agreement between the verb and the subject is correct in the present form.

(4)	IL:	hiya	ta-lʕab-(u)	bi	l-kurah
		she	3.s.f-play-(Indic)	with	the-ball
		"She plays / is playing with the ball."			
	TL:	hiya	laʕibat	bi	l-kurah
		she	play-3.s.f	with	the-ball
		"She played with the ball."			

(Indo-T4: Indo-Group-T)

Sentence (5) shows the correct use of the past tense verb inflected for third-person singular masculine agreement with a singular masculine subject.

(5) huwa ðahaba ʔilā l-bank

he went-3.s.m to the-bank

"He went to the bank."

(Tur-I11: Tur-Group-I)

Sentence (6) shows a third-person singular present verb that should have been produced in the past tense. However, the agreement between the verb and the subject is correct in the present form.

(6) IL: yasħab-(u) nuquud-(a)-hu

3.s.m-witdraw-(Indic) money-(acc)-his

"He withdraws / is withdrawing his money."

TL: saħaba nuquud-(a)-hu

Witdrew-3.s.m money-(acc)-his

"He withdrew his money."

(Tur-T2: Tur-Group-T)

Example (7) illustrates that the usage of the third-person singular present tense is correct, but the agreement with the masculine subject is incorrect. The reason is that the verb was produced in a third-person singular feminine context and should have been formed in the third-person singular masculine.

(7) IL: huwa **ta**-suuq

he 3.s.f-drive

"He drives / is driving"

TL: huwa **ya**-suuq

he 3.s.m-drive

"He drives / is driving"

(Tur-B8: Tur-Group-B)

Sentence (8) displays correct third-person singular past tense verb usage, but the agreement between the verb and the subject is incorrect.

(8) IL: rakib-a ʔal-tˤāirah

board-3.s.m the-airplane

"He boarded the airplane."

TL: rakiba-t ʔal-tˤāirah

board-3.s.f the-airplane

"She boarded the airplane."

(Tur-B3: Tur-Group-B)

Sentence (9) shows that the usage of the third-person singular present tense is correct, but the agreement with the singular masculine subject is incorrect. The reason is that the verb was produced in the third-person singular feminine and should have been formed in the third-person singular masculine.

(9) IL: ʔal-radʒul sa-**ta**-ʕuud

the-man will-return-3.s.f

"The man will return."

TL: ʔal-radʒul sa-**ya**-ʕuud

the-man will-returen-3.s.m

“The man will return.”

(Tur-B7: Tur-Group-B)

4.6 Overall Summary

The overall performance of the two L1 Indonesian and L1 Turkish groups is reported above. The similarities and differences in the L3 output of Arabic L3 learners of different L1s at different proficiency levels of verbal agreement and tense were reported in this chapter through most of the between and within group effects analyzed in the mixed ANOVA design in addition to all the factors studied under two-way ANOVA tests. The L1 Indonesian participants had relatively better performance in singular masculine verbal agreement in the present tense than their Turkish counterparts. The tense performance is relatively lower in beginners (than in other levels) in the singular feminine present tense in the L1 Turkish group, whereas there is some backsliding in some groups of both L1s across the four levels in singular feminine in the past tense (i.e., higher levels perform better). A different pattern of variation among the four proficiency levels within each L1 participant groups exists in singular masculine verbal agreement in the past and singular feminine verbal agreement in the past. In the L1 Indonesian group, the advanced level performed considerably better than the near-native level on singular feminine verbal agreement in the past tense, whereas in the L1 Turkish group, beginners performed better than those in the middle levels (intermediate/advanced). The L1 Indonesian participants have relatively better overall performance than their Turkish counterparts. Mixed ANOVA specifically examined the significance of differences among the L1s, levels, or their interactions according to the performance of the participants on the target forms in relation to repeated measurement of dependent and independent variables. The chapter also covered two-

way ANOVA tests, which examined each target form (verbal agreement or tense score at a specific condition) and identified whether the performance of the two different L1 groups differed significantly in their scores on a given target form and whether the four levels differed significantly in their scores on a given target form between and within groups. In both designs (mixed ANOVA and two-way ANOVA), various effects were found insignificant. The dissertation findings will be discussed thoroughly in Chapter 5 in terms of the research questions and relevant language transfer hypotheses and models.

Chapter 5

Discussion and Conclusion

5.1 Overview

This chapter discusses the findings from Chapter 4. The findings of each study target form—from the narrative tasks concerning the singular past and present tense, and the singular verbal agreement—are discussed in consideration of the prior studies discussed in Chapter 2, as well as relevant hypotheses of L1 transfer hypotheses, L2 transfer models, near-nativeness, and other contributing factors. This chapter concludes with a general conclusion and a review of the study's limitations and pedagogical implications.

5.2 RQ1

To what extent is the Arabic language output of Arabic L3 learners of different L1s influenced by the absence of verbal agreement and tense in their own L1s?

In the first research question, the performances of all L1 Indonesian and L1 Turkish groups were examined overall, along with how the presence or absence of agreement and tense structures in their L1 affected those groups' performances. With respect to the role of L1 transfer (or the presence or absence of a feature in L1) the data provide somewhat mixed evidence for two reasons. First, the data hardly produced any statistically significant differences when considering the L1 variable alone. Second, statistically significant differences obtained only when considering proficiency alone or the interaction between L1 and proficiency where,

although the L1 Indonesian performed overall somewhat better than their L1 Turkish counterparts, some L1 Turkish groups performed better than their L1 Indonesian counterparts in some target forms. Further discussion of this finding is provided at the end of this section.

The findings pertain to the L1 transfer hypotheses, which will be reviewed in this chapter, particularly concerning *representational deficit/interpretability hypothesis*, the *full transfer/full access model* (FT/FA), and the *feature reassembly hypothesis* (FRH). The representational deficit/interpretability hypothesis (e.g., Franceschina, 2005; Hawkins, 2005, 2009; Hawkins & Hattory, 2006; Hawkins et al., 2008; Tsimpli, 2003; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2008) proposes that acquisition of uninterpretable features (e.g., agreement features of person, number, and gender) is restricted to the critical period. Once L2 learners pass their critical periods, there is no access to these features based on the universal grammar (UG) inventory for L2 acquisition. The interpretability hypothesis depends mostly on the presence or absence of uninterpretable features before the critical period, which plays a significant role for L2 learners throughout their L2 learning process. The *failed functional features hypothesis* was a predecessor to the *representational deficit/interpretability hypothesis*. It assumes that an L2 learner's functional system is inhibited by what is available in their L1; hence, they are always impaired depending on the nature of their L1 system (Hawkins & Chan, 1997; Hawkins, 1998, 2001). It rejects the possibility of UG restructuring during L2 development. Namely, according to Hawkins (1998, 2000), a subset of uninterpretable features will fail (i.e., be non-acquirable and thus absent) permanently during SLA.

The data presented in Chapter 4 displayed various significant differences in verbal agreement and tense performance between the L1 Indonesian and L1 Turkish participants. Because of the verbal agreement feature's absence from the UG inventory, the L1 Turkish

participants had instantiated the uninterpretable feature of verbal agreement in their L1, but the L1 Indonesian participants had not. The data did not appear to support the predictions of these hypotheses (the representational deficit/interpretability hypothesis, the failed functional features hypothesis, and the local impairment hypothesis) because L1 Turkish individuals experienced more difficulties acquiring verbal agreement and tense in Arabic as an L3 than their Indonesian counterparts. However, the L1 Indonesian participants were able to perform relatively better than their L1 Turkish counterparts. Some of the L1 Indonesian participants were able to reach the 100% ceiling level in some of the target structures of the study (see Appendix 2). This obviously refutes the notion that UG access to the feature of gender agreement from the UG inventory is permanently impaired and that adult SLAs cannot learn new unintelligible features. Previous Arabic findings show that participants in English L1, Spanish L1, and Japanese L1 attained superior accuracy rates in their use of verbal agreement (Alhawary 2009a, 2009b) and tense (Alhawary 2009a, 2009b).

The FT/FA model (e.g., Schwartz, 1998; Schwartz & Sprouse, 1994, 1996) that the first stage of L2 acquisition is considered to be the last stage of L1 acquisition (FT) (Schwartz and Sprouse, 1996, p. 40). The hypothesis posits that all L1 grammar that encompasses lexical and functional categories and feature values concomitant with functional categories, except the phonetics matrices of lexical, is accessible by L2 learners in the initial stages of L2 acquisition. L1 transfer will also reform the L2 system based on the input that L2 learners experience when exposed to the target language. However, obscured input leads to fossilization. The FT/FA model does account fully for the current data. The reason for this is that the findings show that the performance of the L1 Indonesian participants overall was relatively better than that of their Turkish counterparts. The overall performance of L1 Turkish and L1 Indonesian participants is

somewhat asymmetrical, with the L1 Indonesian groups performing overall somewhat better than the L1 Turkish.

Alhawary (2019) suggested that Russian L1 intermediate learners were more successful in acquiring Arabic verbal gender agreement than their Chinese L1 counterparts. (Alhawary, 2019, p. 154). Although the difference was not statistically significant, the French L1 individuals also did somewhat better learning Arabic than their English and Japanese counterparts (see Alhawary 2009). Conversely, the English L1 individuals' performance was somewhat superior to that of their Japanese counterparts. Even though all three L1s lack verbal gender agreement, English and French also include verbal agreement features—though with English having a much more impoverished paradigm than French. Japanese, however, exhibits zero verbal agreement morphology (Alhawary, 2009a, p. 157). Alhawary (2009a, 2009b) also suggested this might be the cause of the French L1 participants' minor edge over their English and Japanese counterparts and the English L1 participants' advantage over their Japanese counterparts, as determined by FT/FA. He attributed the advantage to a contributing positive transfer effect caused by the verbal agreement feature paradigm's presence in the participants' L1. From this fact, together with the lack of statistical significance, no conclusion can be drawn. In most of the tense and agreement structurers, Arabic L3 learners of L1 Indonesian who do not exhibit verbal gender agreement performed relatively better than the L1 Turkish participants. Although it is difficult to rule out the possibility that the FT/FA model may be the best explanation for the findings, it cannot be assumed that the FT/FA model alone will fully explain the findings of this study. Given that Turkish L1 includes agreement and tense, the Turkish participants should have performed better than their Indonesian counterparts in the majority of the study's target forms. The FT/FA model appears partially accounts for this study.

The FRH (e.g., Hwang & Lardiere, 2013; Lardiere, 2008, 2009) advances the FT/FA model (e.g., Schwartz, 1998; Schwartz & Sprouse, 1994, 1996). It posits that assembling various lexical items of an L2 requires learners to reconfigure features represented in their L1 into new types of lexical items in their L2. The learning tasks are based on the ability of learners to reconfigure assembly features that they use in their L1 into new assembly features in the target language.

The findings reported in this study showed that numerous participants were able to achieve a 100% ceiling of some of the target forms, although the overall performance of each of these participants differed across target forms (e.g., achieving a high score in verbal masculine agreement most likely because they are using the masculine as a default form (see Alhawary 2009, 2019), but showing a low performance in tense or vice versa). Overall, the L1 Indonesian participants performed relatively better than the L1 Turkish participants even though their L1 does not exhibit verbal agreement or tense. Conversely, even though the L1 Turkish participants' L1 encompasses tense and agreement, their overall performance was relatively poorer than that of their Indonesian counterparts. According to the feature reassembly hypothesis, it is conceivable to acquire uninterpretable features that are not available in the participants' L1 (Hwang & Lardiere, 2013). However, poor performance on such forms at the early stages of L2 development regarding the morphosyntactic aspects of tense and verbal agreement in Arabic imply a difficult learning problem of reassembling such components in L2. The difficulty of the reassembling or reconfiguring process would inevitably mirror the degree of learning struggles that the L2 learners were experiencing.

The results of this study partially support the prediction of the FRH that, at least for some learners, eventual attainment of native-like proficiency is achievable, regardless of whether the

feature is present in L1 or not. However, neither the L1 Indonesian nor the L1 Turkish participants' acquisition asymmetry of verbal gender agreement can be predicted. Although it is hardly complex in and of itself or in respect to L1 Indonesian or L1 Turkish, the learning process of reassembling the gender feature in Arabic seems to be more difficult for L1 Indonesian speakers than for L1 Turkish speakers (see also Alhawary 2019). The results, however, display a disparity between the acquisition of Arabic verbal gender agreement and tense by L1 Turkish and L1 Indonesian speakers, with the L1 Turkish participants finding the gender agreement and tense to be more difficult than the L1 Indonesian ones, who demonstrated relatively higher accuracy scores than the L1 Turkish participants. The main distinctions between the two L1s are the verbal agreement features and tense, which are available in the L1 of the Turkish participants but not in the L1 of the Indonesian participants. The findings reported in Chapter 4 thus partially confirm the FRH because even native-like performance is feasible, at least for some L1 Indonesian and L1 Turkish learners. This finding is consistent with previous Arabic researchers, who found some of the participants were able to score the 100% ceiling level (see Alhawary, 2009a, 2009b, 2019). The FRH hypothesis, however, is inadequate in regard to accounting for the asymmetry in the verbal gender agreement acquisition patterns. The purpose of the FRH was to promote a comparative feature-based approach to further develop the concept of the L1 effect and identify a possible source for obscurity in the input, which might lead to potential learning or fossilization problems (Hwang & Lardiere, 2013, p. 81). However, relying solely on this idea does not offer a satisfying explanation for the findings on verbal gender agreement and tense reported in this study.

It is also essential to consider the four L2 transfer models which speculate about L2 and L3 learning processes: the *cumulative enhancement model* (CEM); the *L2 status factor model*

(L2SFM); the *typological proximity model* (TPM); and the *linguistic proximity model* (LPM). The CEM (e.g., Berkes & Flynn, 2012; Flynn et al., 2004) specifies that the L1 is not the only source of transfer between the first, second, and third languages, but it typically depends on the positive and cumulative influence of preceding acquired languages on the learners' L3. The transfer process is selective. Therefore, the CEM may affect the learning process, where only positive transfer but no negative transfer occurs or where the transfer will remain neutral.

The L2SFM (e.g., Bardel & Falk, 2007, 2012; Falk & Bardel, 2011) proposes that the L1 has no role in influencing L3 learning processes but states explicitly that L2 influences L3 acquisition whether the transfer is negative or positive. The reason is that there are advanced parallels of sociolinguistic and neurocognitive resemblances between L2 and L3 that are different from L1 because of several factors (e.g., the learning settings, age of onset, learning outcome, and the practice of learning strategies) (Falk & Bardel, 2010, 2011).

The TPM (e.g., Rothman, 2010, 2011, 2013, 2015; Rothman & Cabrelli Amaro, 2010; Rothman et al., 2015) assumes that the L1 and L2 transfers occur in L3 acquisition but that there are some variances between the CEM and TPM. First, it is feasible that both negative and positive transfers will occur. Second, the TPM specifies the positive or negative transfer regulated by the typological similarity of the languages concerned. The parallels between the target languages are evaluated by linguistic cues in the input and the language acquisition device (LAD). Third, Rothman (2015) assumed that LAD can only foresee structurally comparable languages at a universal level, irrespective of the structure resemblances. Fourth, the LAD is directed by various associated linguistic cues (lexical, phonological, morphological, syntactic) to identify the former L1 and L2 systems, which are akin structurally to the target L3. Lastly, the

transfer is full, whether it is from L1 or L2, or emerges at an early level of acquisition, which is parallel to the findings of Schwartz and Sprouse (1996).

Westergaard et al. (2017) defined the LPM as an alternative approach to the CEM and the TPM. Westergaard et al. argued that some similarities among the three languages play a vital role instead of the order in which they are acquired. Westergaard et al. advised that the argument should not focus on the general typological proximity as a crucial factor; instead, only the similarity of abstract linguistic properties is the main cause of cross linguistics effects from previously learned languages. Westergaard et al. also indicated that the LPM accounts for both facilitative and nonfacilitative influence.

It is crucial to discuss the L1 Indonesian participants' performances, which demonstrate they were able to perform relatively better than their Turkish counterparts. L1 Indonesian and Turkish participants had to study English in their general education from the elementary to university level. The L1 Turkish participants should have outperformed the L1 Indonesian participants because the CEM model (e.g., Berkes & Flynn, 2012; Flynn et al., 2004), suggests where there should be a positive and cumulative influence of previously acquired languages on the learners' L3. The CEM somewhat supports the results because it appears the performance of L1 Indonesian does not entirely affect their L3 Arabic performance in terms of gender agreement and tense. The CEM model predicts there should be a positive and cumulative effect of earlier acquired languages on the learners' L3, with positive effect coming from their English L2. Consequently, the L1 Turkish participants should have outperformed the L1 Indonesian participants in this study because the L1 Turkish participants would have had positive effects from their L1 Turkish and L2 English. Thus, the results partially support the CEM because it

seems that the L1 Turkish and L2 English did not have as much an impact on their Arabic L3 proficiency in terms of gender agreement and tense.

The TPM is one of the crucial L2 transfer models that may help explain the performance of the study's participants because both negative and positive transfers are considered if the two languages in question share typological characteristics (e.g., Rothman, 2010, 2011, 2013, 2015; Rothman & Cabrelli Amaro, 2010; Rothman et al., 2015). Transfer (wholesale) takes place only if languages are typologically similar. None of the languages are typologically similar. Hence, in terms of positive transfer, no predictions can be made to confirm or disconfirm the predictions from the data findings. Alternatively, if negative transfer applies, it should apply to both L1 Indonesian and L1 Turkish participants equally.

Westergaard et al. (2017) argued that, rather than emphasizing general typological proximity as a crucial component, one should emphasize the similarity and dissimilarity of abstract linguistic features as the primary factor of linguistic effects from previously taught languages. According to the LPM, a positive effect would be expected from L2 English for both the L1 Indonesian and L1 Turkish participants (since English exhibits both agreement and tense) and a negative transfer from Indonesian for the L1 Indonesian participants, but a positive transfer from Turkish for the L1 Turkish participants. Hence, the model would predict that, overall, the L1 Turkish participants would outperform the L1 Indonesian participants; however, the findings revealed the contrary. Hence, the LPM seems to be partially disconfirmed.

Finally, to return to the finding of lack of main effect based on L1 factor alone, the findings show that most of the significant differences occurred only when only proficiency alone or both L1 and proficiency were taken together. The effect of proficiency alone had various significant results. All of the results are summarized in the second question below, addressing the

second research question. Proficiency may be indicative of other factors (other than L1), such as the quality and quantity of instruction and individual differences, such as how motivation relates to Islamic heritage and related linguistic functions. As explained in Chapter 3, the L1 Indonesian groups were found to be far more motivated to learn and to speak Arabic than their Turkish counterparts. L1 Indonesian participants showed a strong willingness to learn Arabic, memorize the Qur'an, and teach it to their family, friends, and neighbors. They also seemed gregarious and social. Similarly, given some of the L1 Turkish groups performed better than their Indonesian counterparts, this suggests that the role of L1 transfer is at play and that the L1 Indonesian groups performed better than the Turkish counterparts may be due to the role of motivation overriding L1 transfer. Hence, to account for the full range of the present data, there is a need to consider other contributing factors, such as motivation, not just language transfer.

5.3 RQ2

Are there any similarities and differences in the third language output of Arabic L3 learners of different L1s at different proficiency levels of verbal agreement and tense?

This question is answered through most of the between and within subjects effects analyzed in the mixed ANOVA design in addition to all the factors studied under two-way ANOVA and post-hoc tests. Mixed ANOVA specifically examined the significance of differences among the languages, levels, or their interactions in terms of the difference in performance between two conditions related to a repeated measures variable (e.g., when the variable is tense, the two conditions are past and present). The two-way ANOVA tests, on the other hand, examine the target forms (verbal agreement and tense score) and determine whether the performance of the two different L1 groups differs significantly in their scores on a given

target form; whether the four levels differ significantly in their scores on a given target form; or whether the four levels differ significantly in their scores on a given target form but only in one L1. The findings are summarized below:

The interaction between L1 and proficiency level in singular feminine past tense has a significant effect. There were significant differences in the singular feminine past tense between the four proficiency levels, particularly between beginners and near-native speakers and between intermediate learners and near-native speakers. There were significant differences between the L1 Turkish near-native group versus the L1 Turkish advanced group, and the L1 Turkish near-native group versus the L1 Turkish intermediate group. There was a considerable disparity in the proficiency level on the singular feminine in the past. There is some backsliding in some groups of both L1 across the four proficiency levels in singular feminine past tense (i.e., higher proficiency levels perform better). In the intermediate and advanced proficiency levels, the Indonesian L1 groups outperformed their Turkish counterparts, whereas at the beginner and near-native proficiency levels, the Turkish L1 participants outperformed their Indonesian counterparts in the singular feminine in the past tense.

A significant result concerning the singular masculine in the past tense was the interaction between L1 and proficiency level (higher proficiency in some L1 groups than other L1 groups) which has a significant effect. There were significant differences in the singular masculine past tense between the four proficiency levels of the two L1 groups, particularly between beginners and near-native speakers and between intermediate learners versus near-native speakers. There were significant differences in the singular masculine past tense between the L1 Turkish near-native group versus the L1 Turkish advanced group, and the L1 Turkish near-native group versus the L1 Turkish intermediate group. The near-native group, which is

backsliding, was the only one of the L1 Indonesian groups to show a discrepancy. In sum, there is some backsliding in some groups of both L1 across the four proficiency levels in the singular masculine past tense (i.e., higher proficiency levels perform better). At the intermediate and advanced proficiency levels, L1 Indonesian participants outperformed their Turkish counterparts, whereas in the beginner and near-native proficiency levels, Turkish L1 outperformed their Indonesian counterparts in the singular masculine in the past tense.

The interaction in the singular feminine present tense between L1 and proficiency level (higher proficiency in some L1 groups than other L1 groups) has a significant effect. There were significant differences in the singular feminine present tense between the four proficiency levels of the two different L1 groups, particularly between beginners and near-native speakers and between intermediate learners and near-native speakers. Additionally, there was a significant difference in the singular feminine present tense between the L1 Turkish near-native group and the L1 Turkish beginner group. At the beginner and intermediate proficiency levels, L1 Indonesian outperformed their Turkish counterparts in the singular feminine present tense, whereas at the advanced and near-native proficiency levels, Turkish L1 participants outperformed their Indonesian counterparts.

A significant result concerning the singular masculine in the present tense was the interaction between L1 and proficiency level (higher proficiency in some L1 groups than other L1 groups) which has a significant effect. The proficiency level of the two different L1 groups had a main effect in singular masculine present tense where the L1 Indonesian participants outperformed their Turkish counterparts. L1 had a significant effect on the singular masculine present tense. There were significant differences in the singular masculine present tense between the four proficiency levels, particularly between beginners and intermediate learners. There was

also a near significant difference between beginners and near-native speakers. Additionally, the following results were found: significant disparities between the L1 Turkish beginner group and the L1 Indonesian counterparts, the L1 Turkish intermediate group versus the L1 Turkish beginner group, and the L1 Turkish near-native group versus the L1 Turkish beginner group. In sum, the L1 Indonesian groups overall were better at performing on the singular masculine present tense.

The scores of the L1 Indonesian and L1 Turkish participants on singular feminine verbal agreement in the past tense interaction effect between L1 and proficiency level has a significant effect. The singular feminine verbal agreement in the past has a near-significant effect for proficiency, and the four proficiency levels vary in the same way as that found in singular feminine past tense (i.e., semi-logical order). There was a nearly significant difference between the intermediate and near-native levels between the proficiency levels of the two L1 groups. Additionally, the following results were found: significant differences in singular feminine verbal agreement in the past tense between the L1 Turkish advanced group versus their L1 Indonesian counterparts, and the L1 Turkish near-native group versus the L1 Turkish intermediate group. The results showed that overall, the L1 Indonesian participants outperformed their Turkish counterparts. The pattern of variation of the average scores for singular feminine verbal agreement in the past within groups (i.e., across proficiency levels) is similar to that found in the singular masculine agreement in the past (effect of L1 × proficiency level on singular feminine verbal agreement in the past). The results showed that overall, the L1 Indonesian participants outperformed their Turkish counterparts. An interesting finding here is that the L1 Indonesian advanced group performed much better than the near-native group. For the L1 Turkish group, beginners and near-natives performed better than those in the middle proficiency

levels with near-natives being better than beginners. The range of variation is higher in the L1 Turkish group, which indicates that they vary in the average score of singular feminine verbal agreement in the past more than those in the L1 Indonesian groups do, and this explains the significant interaction.

For singular masculine verbal agreement in the past, there was a significant effect related to the interaction effect. There were significant differences in singular masculine verbal agreement in the past between the proficiency levels of the two different L1 groups, particularly for beginners versus near-native speakers and intermediate learners versus near-native speakers Additionally, the following results were found: significant differences in singular masculine verbal agreement in the past between the L1 Turkish near-native group versus the L1 Turkish advanced group, and the L1 Turkish near-native group versus the L1 Turkish intermediate group. Thus, there is an effect of the L1 on the performance of the two groups on the singular masculine verbal agreement in the past. The results showed that overall, the L1 Indonesian participants outperformed their Turkish counterparts in singular masculine verbal agreement in the past. An interesting finding here is that the L1 Indonesian advanced group performed much better than the near-native group. For the L1 Turkish group, beginners and near-natives performed better than those in the middle proficiency levels with near-natives being better than beginners. The range of variation is higher in the L1 Turkish groups, which indicates that they vary in the average score of singular masculine verbal agreement in the past more than those in the L1 Indonesian groups do, and this explains the significant interaction.

A significant result concerning the singular feminine in the present tense was the interaction between L1 and proficiency level (higher proficiency in some L1 groups than other L1 groups) which has a significant effect. The L1 Turkish beginners versus their Indonesian

counterparts, the L1 Turkish intermediate group versus the L1 Turkish beginner group, and the L1 Turkish near-natives versus the L1 Turkish beginners—all displayed notable disparities in the singular feminine verbal in the present tense. There is also a marginal finding concerning the effect of the L1 on the performance of singular feminine verbal agreement in the present. The L1 Indonesian groups overall exhibited superior performance in terms of singular feminine verbal agreement in the present. Finally, the L1 Indonesian participants outperformed their Turkish counterparts at all proficiency levels except the intermediate, where the Turkish L1 participants outperformed their Indonesian counterparts.

The scores of the L1 Indonesian and L1 Turkish participants on singular masculine verbal agreement in the present were found to have a significant effect within groups. L1 has a significant effect on singular masculine verbal agreement in the present. There were significant differences in singular masculine verbal agreement in the past between the four proficiency levels, particularly for beginners versus near-native speakers and intermediate learners versus near-native speakers. There were significant differences in singular masculine verbal agreement in the present tense between the L1 Turkish beginners versus their Indonesian counterparts, the L1 Turkish beginner group versus the L1 Turkish advanced group, and the L1 Turkish intermediate group versus the L1 Turkish beginner group. There was an interaction effect between the L1 and proficiency on singular masculine verbal agreement in the present. In the present, there was a significant disparity in proficiency level for singular masculine verbal agreement. The L1 Turkish intermediate group outperformed the L1 Indonesian advanced and near-native groups in terms of singular masculine verbal agreement in the present tense. For this task, the L1 Indonesian participants outperformed their Turkish counterparts at all proficiency levels.

The within-group difference is greater in the L1 Turkish group, which explains the interaction between L1 and proficiency. The practical meaning of this finding is that in the L1 Indonesian groups the performance of verbal agreement in the past and present increases in the beginners and, to a lesser extent, in those in the intermediate and near-native groups but not those in the advanced group. In the L1 Turkish groups, the performance of verbal agreement in the past and present increases moderately in the middle proficiency levels (intermediate and advanced), but there are almost no considerable improvements in the near-native levels.

The overall scores of verbal agreement and tense, including just singular masculine, differ considerably between the two L1 participants. The practical meaning of this is that, considering singular masculine cases only, the L1 Indonesian groups have a relatively better overall verbal agreement score than tense score, whereas in the L1 Turkish group, this difference is almost absent. As far as singular masculine cases are concerned, the scores were found to have a significant within-group effect (i.e., proficiency levels within groups) in the L1 Indonesian groups. The differences are greater in the L1 Turkish group, which explains the significant effect interaction between the L1 and proficiency level. The practical meaning of this finding is that, in the L1 Indonesian groups, the gap between the verbal agreement scores is generally smaller than that between the tense scores, and this is found more clearly in the advanced/near-native proficiency levels. In the L1 Turkish group, the opposite is found in the beginner group (relatively better tense scores than verbal agreement scores); there is no difference (between the two types of scores) in the advanced group, and there are relatively better verbal agreement scores (than tense scores) in the intermediate/near-native groups.

The sum of each participant's target form scores was used to evaluate their overall performance. The performance of the two L1 groups are nearly significantly different in terms of

overall performance. The results showed that overall, the L1 Indonesian participants somewhat outperformed their Turkish counterparts. The L1 Indonesian participants has relatively better overall performance than the Turkish language. Finally, to present a holistic picture of the performance, the overall score is also significantly different across the four levels of participants.

In summary, various language and proficiency level effects were found between and within the groups, as fully reported in this section. Overall, the L1 Indonesian participants relatively outperformed their Turkish counterparts. However, some of the L1 Turkish groups outperformed their Indonesian counterparts in some of the target forms of the current study. Specifically, the Turkish L1 beginner and near-native proficiency level participants outperformed their Indonesian counterparts in the singular feminine in the past tense. The Turkish L1 beginner and near-native proficiency levels also outperformed their Indonesian counterparts in the singular masculine in the past tense. In the singular feminine present tense, the advanced and near-native proficiency Turkish L1 participants outperformed their Indonesian counterparts. In terms of singular feminine verbal agreement in the present tense, the L1 Turkish intermediate participants outperformed their Indonesian counterparts. The L1 Turkish intermediate group also outperformed the L1 Indonesian advanced and near-native groups in terms of singular masculine verbal agreement in the present tense. These findings show clear differences between all groups as a whole and within groups, and the variations in the performances of the participants provide insights into the abilities of the L1 Indonesian participants. As explained in the first question of the current study, negative or positive transfer did not prevent the participants from acquiring agreement features, and, in many instances, the L1 Indonesian participants were able to perform better than their Turkish counterparts. This indicates that acquiring grammatical features such as gender agreement and tense is possible.

The final observation here is that the data produced somewhat mixed evidence in the performance of the two groups and lack of statistical effects when considering L1 factor alone and statistical effects obtained when considering the proficiency variable alone or the interaction between L1 and proficiency.

5.4 RQ3

Do Arabic L3 learners of different proficiency levels and of different L1s acquire verbal agreement and tense as native speakers?

There has been a debate in the SLA literature regarding whether or not native-like competence can be attained by L2 learners. Several researchers (e.g., Abrahamsson & Hyltenstam, 2009; DeKeyser, 2000; Hyltenstam & Abrahamsson, 2000, 2001, 2003; Johnson & Newport, 1989; Long, 1990, 1993; Patkowski, 1980) believe that the attainment of native-like speech is not possible. However, another group (e.g., Birdsong, 1992, 2007; Birdsong & Molis, 2001; Bongaerts, 1999; Colantoni & Steele, 2006; Montrul & Slabakova, 2003; Moyer, 1999; van Boxtel, Bongaerts, & Coppen, 2005; White & Genesee, 1996) holds an opposing view. Numerous studies have provided findings that have revealed that a native-like level of proficiency is attainable. These include studies that showed a few L2 learners passing as native speakers by native speaker judges (Ioup, Boustagui, El Tigi, & Moselle, 1994; White & Genesee, 1996). At least, three vital hypotheses concerning the attainment of native-like proficiency have also been proposed in both the SLA and Arabic SLA literature: 1) the representational deficit/interpretability hypothesis; 2) the FT/FA; and 3) the FRH, which were all discussed earlier in the L1 transfer studies section.

The findings revealed that there were numerous participants in the current study groups who were able to reach the ceiling of 100%. Specifically, in singular masculine verbal agreement in the past, eight L1 Indonesian beginner participants scored 100% and six of their Turkish counterparts did the same. In singular feminine verbal agreement in the past, seven of the Indonesian beginner participants scored 100% and one Turkish participant scored the same. In singular masculine verbal agreement in the past, 13 Indonesian intermediate participants scored 100% and eight of their Turkish counterparts. Regarding singular feminine verbal agreement in the past, there were 10 intermediate L1 Indonesians who scored 100% and their Turkish counterparts had seven participants who scored the exact same result. Six of the L1 advanced Indonesians scored 100% in singular masculine verbal agreement in the past and five of their Turkish counterparts did the same. In the singular feminine verbal agreement in the past, both the advanced L1 Indonesian and Turkish had four participants who scored 100%. There were 10 L1 Indonesian and six L1 Turkish near-native Arabic participants who scored 100% in singular masculine verbal agreement in the past. For singular feminine verbal agreement, there were five L1 Indonesian near-native Arabic participants and four L1 Turkish participants who scored 100%.

As for the singular masculine verbal agreement in the present, four L1 beginner Indonesian participants scored 100% and three Turkish participants did the same. The singular feminine verbal agreement in the present results revealed that both L1 Indonesian and L1 Turkish beginner groups had two participants each who scored 100%. The L1 intermediate Indonesian group had 10 participants who scored the maximum score in singular masculine verbal agreement in the present and 12 of their Turkish counterparts did the same. In the singular feminine verbal agreement in the present, one participant scored 100% in the Indonesian

intermediate group and the L1 Turkish group had five participants who scored the same. In singular masculine verbal agreement in the present, nine of the L1 Indonesian advanced participants scored 100% and only five of their L1 Turkish counterparts had the same score. In singular feminine verbal agreement in the present, two advanced participants in the L1 Indonesian advanced group scored 100% and four of their L1 Turkish counterparts achieved the same mark. In singular masculine verbal agreement in the present, eight L1 Indonesian near-native Arabic participants scored 100% and seven of their L1 Turkish participants. Regarding singular feminine verbal agreement in the present, there were four L1 Indonesian and five L1 Turkish near-native Arabic participants who scored 100%.

There were no participants who achieved the maximum score in singular masculine or feminine past tense in the beginner L1 Indonesian group. However, four members of the L1 Turkish group scored 100% in the singular masculine in the past tense, and three L1 Turkish participants did so in the singular feminine in the past tense. One participant in the intermediate L1 Indonesian group scored 100% in singular masculine in the past tense and two of their L1 Turkish counterparts did the same. As for singular feminine in the past tense, the intermediate L1 Indonesian group in the past tense had one participant achieve the ceiling score and the Turkish counterpart group had three participants score 100%. None of the participants in the L1 Indonesian and L1 Turkish advanced groups scored 100% in singular masculine in the past tense, whereas in singular feminine in the past tense, the L1 Indonesian group had one participant who scored 100%, and their L1 Turkish counterpart group had two such participants. In singular masculine in the past tense, there were no participants in the L1 Indonesian near-native Arabic group who scored 100%; their Turkish counterpart group had three participants who did so. Regarding singular feminine in the past tense, one participant in the L1 Indonesian

near-native Arabic group scored 100% and three such participants in the L1 Turkish counterpart group.

In singular masculine in the present tense, two L1 Indonesian participants in the beginner group achieved scores of 100% and one L1 Turkish participant. In singular feminine in the present tense, three L1 Indonesian beginners scored 100% and to two Turkish beginners obtained the same score. Three intermediate L1 Indonesians scored 100% in singular masculine in the present tense and five of their Turkish counterparts did the same. Regarding singular feminine in the present tense, two of the L1 Indonesian intermediate participants scored 100% and seven of their Turkish counterparts. As for singular masculine in the present tense in the L1 Indonesian and L1 Turkish advanced groups, the former included two participants who scored 100%, and the latter had six such participants. In singular feminine in the present tense, no participant scored 100% in the L1 Indonesian advanced group and eight of their Turkish counterparts were able to score 100%. Finally, both the L1 Indonesian near-native Arabic group and the Turkish counterpart group had two participants each score 100% in singular masculine in the present tense; in singular feminine in the present tense, the L1 Indonesian near-native Arabic group had two such participants and their Turkish counterparts had three.

Moreover, some participants seem close to developing native-like competency in some target forms, as shown by the raw data in Appendix 9, and accomplished the 100% ceiling across the eight target forms. Similarly, based on the studies available within the SLA and Arabic SLA literature, there are many instances in which L2 learners were able to reach a native-like level of proficiency—this is reflected in many of the arguments we have explored throughout Chapter 2. The critical period hypothesis is not a robust constraint that might prevent L2 learners from reaching a level that is close to a native speaker. Since there are many confirmed instances of L2

learners being competent enough to master their L2, this findings helps convince L2 learners if they were to work diligently in order to attempt to achieve a near-native level of proficiency. If there were no confirmed cases of near-native-sounding speakers in an L2 learning environment, it would be arduous to motivate L2 learners to acquire such a level of proficiency in their L2.

5.5 Limitations

There are several limitations that must be acknowledged so they can be avoided in future studies. One was that gathering data in person is significantly simpler than doing so online. The rationale is that because the participants were absent from the language programs in the universities in either Indonesia or Turkey, a few factors could have an impact on identifying enough participants to take part in the study. Some of the participants could not take part in the study because they lacked internet access or computer access. The choice was not up to the researchers, language programs, teachers, or students—but rather because of the COVID-19 pandemic—which stopped all aspects of normal life for more than two years. It would have been easier to visit the research sites to meet personally with the teachers and the students of both programs to invite a large pool of participants from all proficiency levels, especially the higher proficiency levels. The current number of participants allowed the researcher to carry the research during the difficult times and run the appropriate statistical tests, which revealed various significant results that have been reported in the forgoing chapter. However, the Indonesian beginners seem to be higher than their level, as I indicated in chapter 3, which might have introduced a confound to the comparisons with the Turkish participants. However, if there had been enough participants who met the criteria for the current study, it would have been easier to

choose who would participate and who would not; however, if there were only a few options, it would have been difficult to determine the best adjustments to include or exclude participants.

A second limitation was that, despite their limited English proficiency, the L3 participants were exposed to English throughout their general education up to the university level. English was therefore included in the study to examine how the L1 and L2 affected the Arabic L3. To accurately assess participants' levels of English using standardized English tests such as the TOEFL or IELTS or other reliable measures rather than relying solely on their responses to the questionnaires or their refusal to speak or write in English, it would have been more robust to include participants who are fully proficient in English or with an active knowledge of English as an L2 and are able to speak and write it fluently. Therefore, the study conclusions concerning L2 transfer are not generalizable. Although it was difficult to do so in the current study, it is recommended that future studies that include English or another L2 should precisely determine the L2 proficiency level. The researchers would then have additional evaluation tools at their disposal to help them assess the effects of the investigated grammatical structures that were transferred from the L2 to the L3.

Furthermore, the standard measure for near-near participants was not used to identify them, such as using native-language judges. Judges who were native speakers were not used for several reasons. The first reason was that it was obvious from the near-native participants' accents that they were not native Arabic speakers; thus, native speakers would have known. The second reason was that, even though all the near-native participants in the study had degrees in Arabic and were required to teach Arabic in their classes every day as part of their teaching duties, some near-native participants still had trouble with tense and agreement, even though these were frequent structures that near-native participants were supposed to have mastered

before obtaining their Arabic degrees or teaching Arabic in schools or universities in Indonesia or Turkey.

Finally, due to the COVID-19 pandemic, which moved language learning in classrooms to online settings where teachers used various external learning resources to teach tense and agreement among other Arabic structures, the lack of knowledge about the learning schedules for present and past tense structures during these classes were another limitation of this study. This is because teachers during this time were less dependent on Arabic textbooks.

5.6 Conclusion and Pedagogical Implications

By utilizing the L1 hypotheses, L2 transfer models, and near-native attainment model, this dissertation aimed to advance Arabic SLA and provide empirical evidence from languages that have not yet been studied. The data were gathered from L3 Arabic learners who were natives of Turkish and Indonesian languages. Despite not being able to speak or write in English, the study participants were exposed to English during their general education up to the university level. Nevertheless, participants were not fully competent in English, though they were exposed to English when pursuing their general education in Turkey and Indonesia. Therefore, English was included in the study to examine the transfer effect of the L1 and L2 on the Arabic L3. Ultimately, L1 and L2 transfer studies in the subject of Arabic SLA are being studied. Based on the empirical data, applying the L1 hypotheses, L2 transfer models, and near-native hypotheses, a few previous empirical studies (such as Alhawary 2005, 2009a, 2009b, 2019) have examined agreement, among other crucial Arabic structures. To study the impact of transfer and how Arabic L3 learners interact with the target structures when learning

Arabic as an L3, this dissertation offered additional empirical data with novel typological pairings of individuals with Indonesian and Turkish as L1s.

In short, the results of the current study revealed statistically significant differences in proficiency, and the interaction between the L1 and proficiency levels between the study participants' L1 groups. The findings also show there were statistically significant differences in how well L1 participants performed within their respective L1 groups. Regarding near-nativeness, there were numerous instances of participants who achieved the highest 100% ceiling level and were able to perform on various target forms of the current study (see Appendix 2), suggesting that Arabic proficiency is achievable. The results of the study provide partial support for the majority of L1 transfer and near-nativeness hypotheses, including the FT/FA model and FRH. The predictions of the representational deficit/interpretability hypothesis did not, however, appear to be supported. Based on the current data, it is possible no language transfer model can sufficiently explain the results, based on how the research participants performed, without considering other contributing factors such as motivation. These L1 transfer hypotheses and L2 transfer models, however, provide some explanations for the L1 group performances of the two L1s. Indonesian students appeared sociable and socially engaged and showed a strong motivation to learn Arabic and memorize the Qur'an and teach it to their family and community. An important finding of this study is that when learning Arabic as an L3, strong motivation seems to override the L1 transfer effect.

Finally, the findings of the present study have implications for four important groups (students, teachers, authors, and Arabic SLA researchers) that are primarily concerned with the process of language acquisition and those who struggle with learning Arabic as a second or third language.

Regarding the implications for students of Arabic as an L3, the results of the current study indicate that it is possible for students to acquire grammatical structures such as gender agreement and tense, even if they do not have them available in their L1. It is also worth noting that, when students have peers from different languages in their classrooms, it would be helpful to know that nothing will prevent them from learning a second or third language, such as Arabic. If motivation and effort were directed toward learning a new language, it would be possible to acquire new structures that could even reach near-native levels of native speakers. However, even if such grammatical features are present in the L1, this does not guarantee the outcome or ease of acquiring gender agreement and tense structures because some learners may still struggle when learning a third language.

Regarding the implications for teachers of Arabic to better understand how Arabic is acquired as a third language, further research is needed in the fields of Arabic second and third languages and Arabic SLA. Teachers need to be aware that their L3 students have a variety of backgrounds. Their primary goal must be to attend to their needs and learn more about their native languages to address any problems that may arise during the learning process.

When composing their language books, Arabic language book authors should remember that students are diverse, with various linguistic backgrounds. The authors' focus should be to provide simple explanations for grammatical concepts that are supported by examples. Although some of the students' first languages may have Arabic's grammatical structures, others might not. This is a reminder to Arabic textbook writers that some students' low performance may be caused by the absence of these rules, and that for those students to be on par with their peers, they must strengthen the curriculum and provide those who need it with different learning activities. To ensure students who lack such grammatical structures fully prepare to learn the

target language, it is important to note that specialized books with some language grammar structures, such as agreement and tense—which are absent in Indonesian—should be written clearly. However, the emphasis is not only on providing detailed explanations of grammatical concepts, but also on being able to apply them in writing and speaking.

The results of the current study demonstrate that motivation research investigations linked to L1 and L2 transfer models and hypotheses are essential in the field of Arabic SLA, and this has important ramifications for researchers studying Arabic SLA. L1 Indonesian learners performed similarly to or better than their Turkish counterparts in this study, despite the lack of verbal agreement and tense in their L1. Without perseverance, suitable program planning, and committed teachers, their success in learning Arabic would not have been possible. Arabic teachers would benefit from having well-designed teacher preparation materials based on research-guided approaches, as well as more studies on various Arabic target forms from novel language pairings that have not yet been investigated, as these studies will enable teachers to deal with as many Arabic learners with different L1s as possible.

The Arabic SLA field also needs additional research on how to use technology more efficiently to develop language assessment tests—in general and particularly for advanced levels and near-native participants—that are easily accessible, based on clear guidance, and capable of being implemented anytime and anywhere. Before beginning their academic programs or pursuing professional employment where Arabic is the preferred language, learners would be able to take these Arabic proficiency tests to determine their degree of competency in the language and whether they still need to study more. In the same way as English language tests, such as the well-known TOEFL or IELTS exams, which are available anywhere in the world and have been used for many years, it is hoped that Arabic SLA researchers will create Arabic

electronic tests that might be utilized all over the world. Therefore, universal electronic Arabic proficiency tests will make it easier for Arabic SLA researchers to recruit Arabic participants and evaluate their Arabic level based on commonly accessible, reasonably priced, and internationally recognized tests.

Ultimately, the current study filled some gaps in the literature on the acquisition of verbal agreement and tense features by Indonesian and Turkish learners of Arabic as their L3. In particular, the typological pairings of Indonesian and Turkish learners of Arabic acquiring the target structures have not been examined before. Hopefully, the current study offers some contribution to inform teachers and researchers of Arabic, as well as L2 learners of Arabic whose L1 does not exhibit verbal agreement or tense features. However, similar or other grammatical features may be investigated to help both L1 Indonesian and L1 Turkish speakers because the field of Arabic SLA is in need of more studies to advance the acquisition of Arabic and promote its learning among L2 or L3 learners around the world.

Appendices

Appendix 1 L2 Language History Questionnaire

Contact Information:

Name: _____ Email: _____

Telephone: _____ Today's Date: _____

Please answer the following questions to the best of your knowledge.

PART A

1. Age (in years):

2. Sex (circle one): Male / Female

3. Education (degree obtained or school level attended):

4(a). Country of origin:

4(b). Country of Residence:

5. If 4(a) and 4(b) are the same, how long have you lived in a foreign country where your second language is spoken? If 4(a) and 4(b) are different, how long have you been in the country of your current residence? (in years)

6. What is your native language? (If you grew up with more than one language, please specify)

7. Do you speak a second language?

__YES my second language is _____.

__NO (If you answered NO, you need not to continue this form)

8. If you answered YES to question 7, please specify the age at which you started to learn your second language in the following situations (write age next to any situation that applies).

At home: _____

In school: _____

After arriving in the second language speaking country _____

9. How did you learn your second language up to this point? (check all that apply)

(Mainly Mostly Occasionally) through formal classroom instruction.

(Mainly Mostly Occasionally) through interacting with people.

A mixture of both, but (More classroom More interaction Equally both).

Other (**specify:** _____).

10. List all foreign languages you know in order of most proficient to least proficient. Rate your ability on the following aspects in each language. Please rate according to the following scale (write down the number in the table):

Very poor Poor Fair Functional Good Very good Native-like

1 _____ 2_____3_____4_____5_____6_____7_____

Language	**Reading proficiency**	**Writing proficiency**	**Speaking fluency**	**Listening ability**

11. Provide the age at which you were first exposed to each foreign language in terms of speaking, reading, and writing, and the number of years you have spent on learning each language.

Language	**Age first exposed to the language**			**Number of years learning**
	Speaking	**Reading**	**Writing**	

12. Do you have a foreign accent in the languages you speak? If so, please rate the strength of your accent according to the following scale (write down the number in the table):

No Accent Very Weak Weak Intermediate Strong Very Strong

1 _____ 2_____3_____ 4_____ 5_____ 6_____

Language	**Accent (circle one)**	**Strength**
	Y N	
	Y N	
	Y N	
	Y N	
	Y N	

PART B

13. Estimate, in terms of percentages, how often you use your native language and other languages per day (in all daily activities combined, circle one that applied):

Native language: <25% 25% 50% 75% 100%

Second language: <25% 25% 50% 75% 100%

Other languages: <25% 25% 50% 75% 100%

(specify the languages: _____)

14. Estimate, in terms of hours per day, how often you are engaged in the following activities with your native and second languages.

Activities	**First Language**	**Second Language**	**Other Languages (specify _____)**
Listen to Radio/ Watching TV:	_____(hrs)	_____(hrs)	_____(hrs)
Reading for fun:	_____(hrs)	_____(hrs)	_____(hrs)
Reading for work:	_____(hrs)	_____(hrs)	_____(hrs)
Reading on the Internet:	_____(hrs)	_____(hrs)	_____(hrs)
Writing emails to friends:	_____(hrs)	_____(hrs)	_____(hrs)
Writing articles/papers:	_____(hrs)	_____(hrs)	_____(hrs)

15. Estimate, in terms of hours per day, how often you speak (or used to speak) your native and second languages with the following people.

	Language	**Hours**
Father:	_____	_____(hrs)
Mother:	_____	_____(hrs)
Grandfather(s):	_____	_____(hrs)
Grandmother(s):	_____	_____(hrs)
Brother(s)/Sister(s):	_____	_____(hrs)
Other family members:	_____	_____(hrs)

16. Estimate, in terms of hours per day, how often you now speak your native and second languages with the following people.

	Language	**Hours**
Spouse/partner:	_____	_____(hrs)
Friends:	_____	_____(hrs)
Classmates:	_____	_____(hrs)
Co-workers:	_____	_____(hrs)

17. Write down the name of the language in which you received instruction in school, for each schooling level:

Primary/Elementary School: _____

Secondary/Middle School: _____

High School: _____

College/University: _____

18. In which languages do you usually:

Count, add, multiply, and do simple arithmetic? _____

Dream? _____

Express anger or affection? _____

19. When you are speaking, do you ever mix words or sentences from the two or more languages you know? (If no, skip to question 21).

20. List the languages that you mix and rate the frequency of mixing in normal conversation with the following people according to the following scale (write down the number in the table):

Rarely Occasionally Sometimes Frequently Very Frequently

1 _____ 2_____3_____ 4_____ 5_____

Relationship	**Languages mixed**	**Frequency of mixing**
Spouse/family members		
Friends		
Co-workers		
Classmates		

21. In which language (among your best two languages) do you feel you usually do better? Write the name of the language under each condition.

	At home	**At work**
Reading	_____	_____
Writing	_____	_____
Speaking	_____	_____
Understanding	_____	_____

22. Among the languages you know, which language is the one that you would prefer to use in these situations?

At home _____

At work _____

At a party _____

In general _____

23. If you have lived or travelled in other countries for more than three months, please indicate the name(s) of the country or countries, your length of stay, and the language(s) you learned or tried to learn.

24. If you have taken a standardized test of proficiency for languages other than your native language (e.g., TOEFL or Test of English as a Foreign Language), please indicate the scores you received for each.

Language	**Scores**	**Name of the Test**
_____	_____	_____
_____	_____	_____
_____	_____	_____

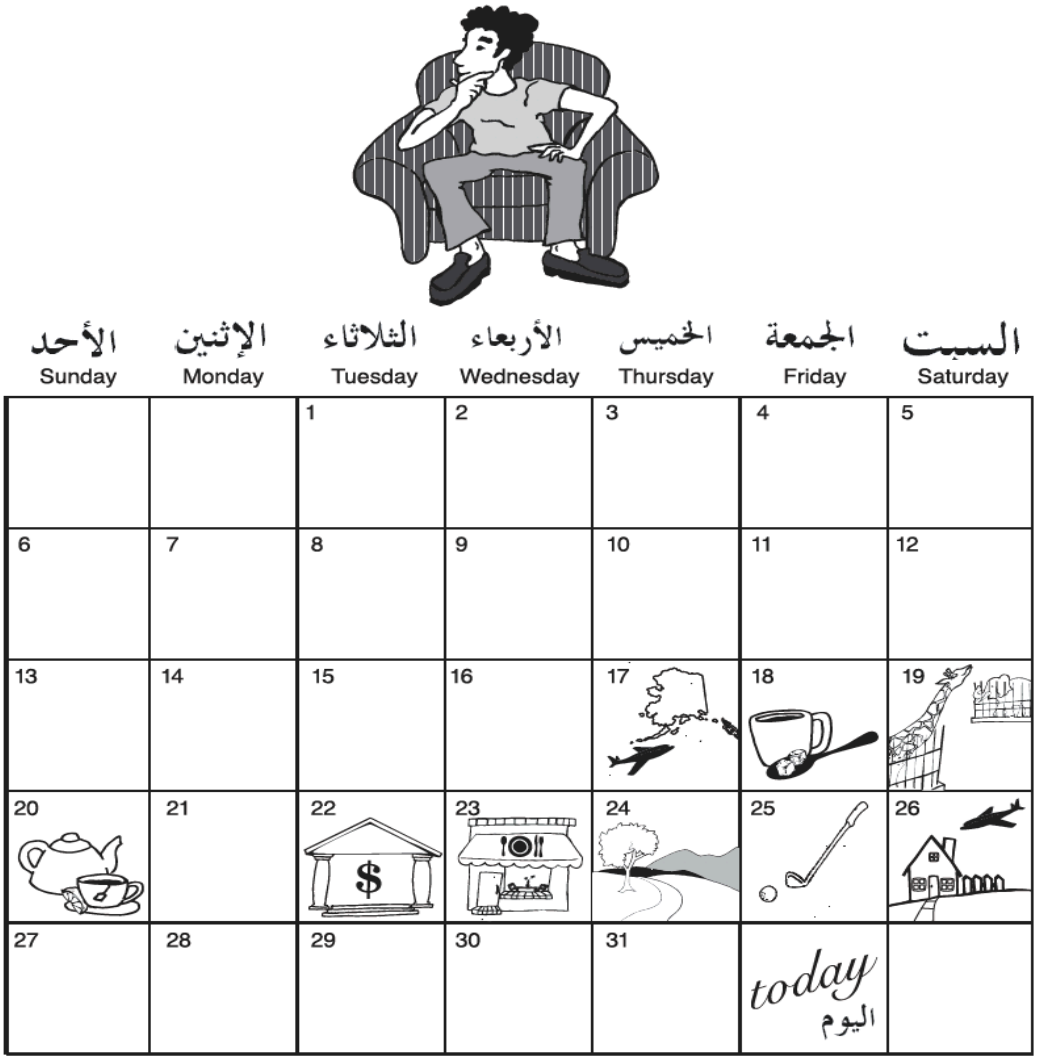
25. If there is anything else that you feel is interesting or important about your language background or language use, please comment below.

PART C

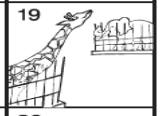
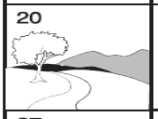
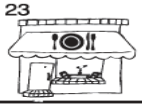
(Do you have additional questions that you feel are not included above? If yes, please write down your questions and answers on separate sheets.)

Appendix 2 Picture Description Task

Appendix 3 Past Tense Narrative Task—Male Character

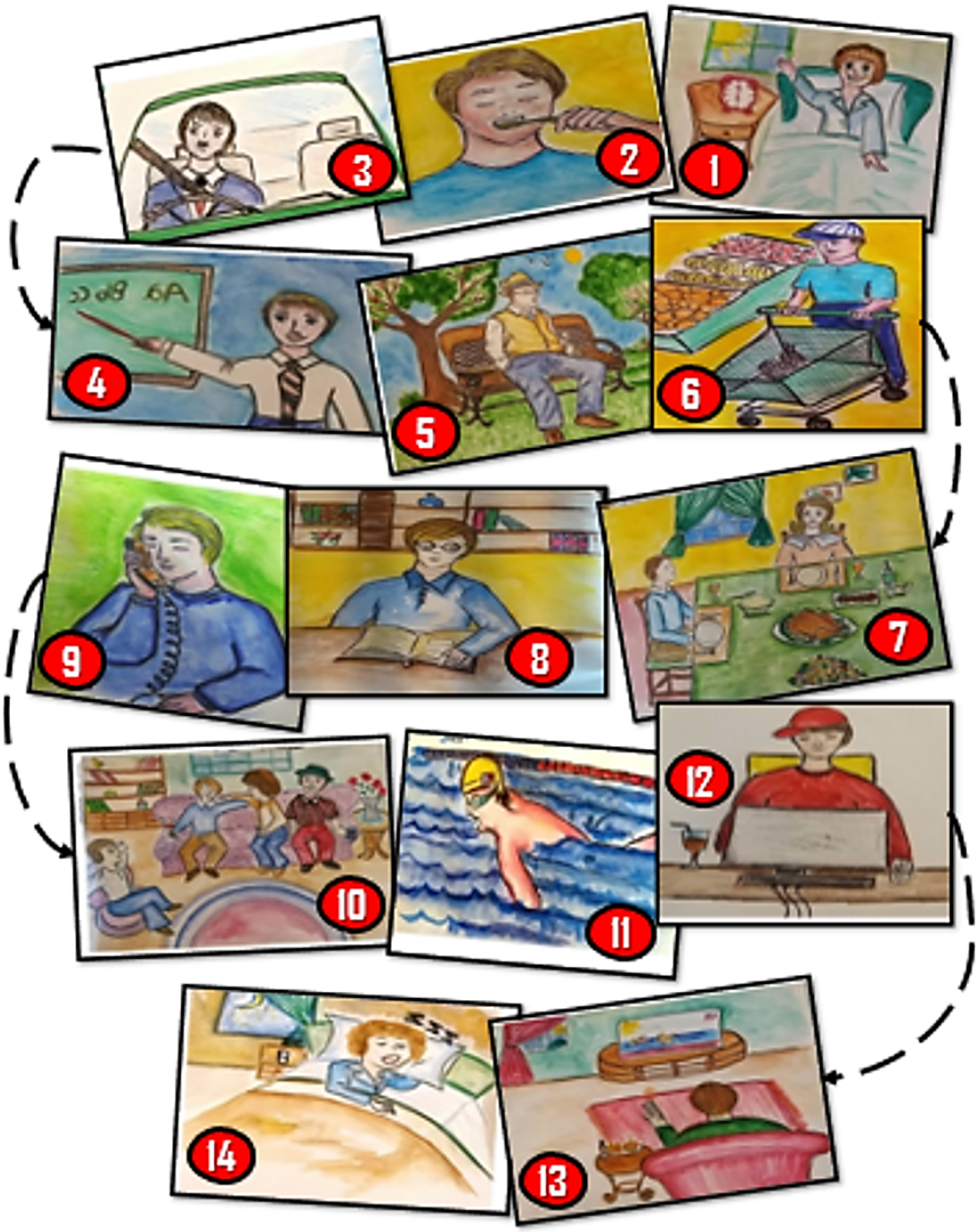


Appendix 4 Past Tense Narrative Task—Female Character

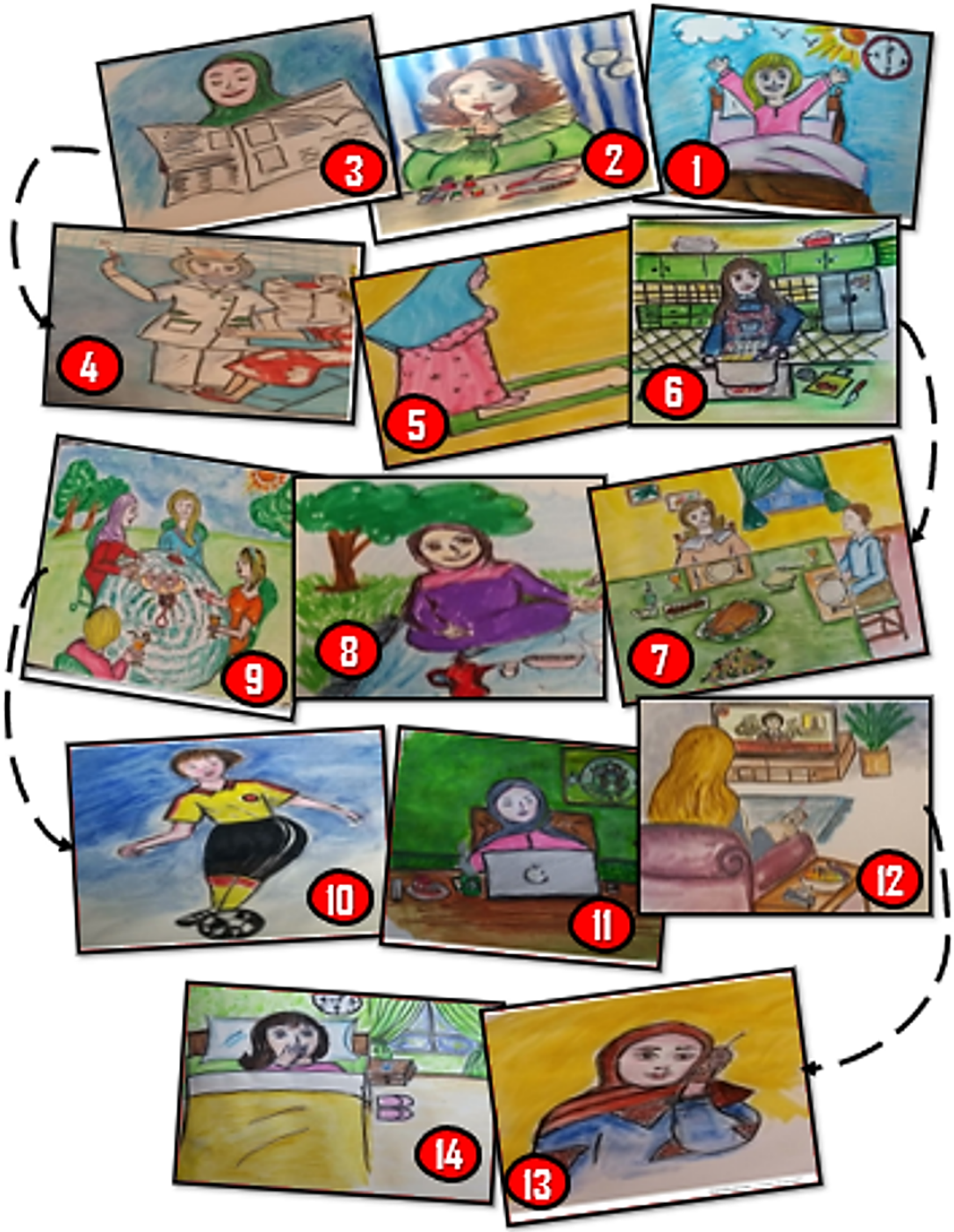
الأحد Sunday	الإثنين Monday	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19 
20 	21	22	23 	24	25	26
27	28	29	30	31	today اليوم	

Appendix 5 Picture Description Task

Appendix 6 Present Tense Narrative Task—Male Character



Appendix 7 Present Tense Narrative Task—Female Character



Appendix 8 Post-hoc tests using the TukeyHSD of the participant proficiency level of the two languages in terms of each target form

```
Call:
mcppb20(formula = mpa_va ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate     0.16882 -0.92691  1.06721 0.71500
Beginner vs. Advanced        -0.26385 -1.46244  0.94429 0.57000
Beginner vs. Near native     -0.74667 -1.74750  0.28333 0.04500
Intermediate vs. Advanced    -0.43267 -1.52240  0.65643 0.36625
Intermediate vs. Near native -0.91549 -1.65941  0.04137 0.01000
Advanced vs. Near native     -0.48282 -1.51077  0.58282 0.27000

Call:
mcppb20(formula = fpa_va ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate     0.10868 -0.75373  1.04206 0.83000
Beginner vs. Advanced        -0.31481 -1.32532  0.89167 0.47250
Beginner vs. Near native     -0.53750 -1.23583  0.16667 0.06375
Intermediate vs. Advanced    -0.42348 -1.45968  0.77240 0.39000
Intermediate vs. Near native -0.64618 -1.34613  0.13471 0.05250
Advanced vs. Near native     -0.22269 -1.27333  0.86372 0.54250

Call:
mcppb20(formula = mpr_va ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate    -0.38377 -1.21770  0.09461 0.04500
Beginner vs. Advanced        -0.26622 -1.06603  0.27635 0.25750
Beginner vs. Near native     -0.22000 -1.20000  0.39500 0.39625
Intermediate vs. Advanced     0.11756 -0.18973  0.53919 0.29250
Intermediate vs. Near native  0.16377 -0.39167  0.65314 0.46000
Advanced vs. Near native      0.04622 -0.58673  0.58795 0.94000
```

```
Call:
mcppb20(formula = fpr_va ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate    -0.17422 -0.87260  0.29539  0.3450
Beginner vs. Advanced        -0.01295 -0.81840  0.49205  0.8725
Beginner vs. Near native     -0.29167 -0.95583  0.28250  0.1575
Intermediate vs. Advanced     0.16127 -0.23982  0.60715  0.2925
Intermediate vs. Near native -0.11745 -0.53255  0.26064  0.4375
Advanced vs. Near native     -0.27872 -0.68891  0.21705  0.1175

Call:
mcppb20(formula = mpa_t ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate     0.01971 -0.79181  0.70299  0.9975
Beginner vs. Advanced        -0.28731 -1.13846  0.67737  0.3800
Beginner vs. Near native     -0.61000 -1.29250 -0.07583  0.0000
Intermediate vs. Advanced    -0.30701 -1.05774  0.67434  0.4000
Intermediate vs. Near native -0.62971 -1.32814 -0.02255  0.0075
Advanced vs. Near native     -0.32269 -1.34135  0.29981  0.1775

Call:
mcppb20(formula = fpa_t ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate     0.12387 -0.57127  0.83078  0.5775
Beginner vs. Advanced        -0.16083 -0.94923  0.80609  0.6950
Beginner vs. Near native     -0.52500 -1.20000 -0.07833  0.0025
Intermediate vs. Advanced    -0.28471 -1.13819  0.72950  0.4425
Intermediate vs. Near native -0.64887 -1.27377 -0.18358  0.0000
Advanced vs. Near native     -0.36417 -1.45744  0.25821  0.2050
```

```
Call:
mcppb20(formula = mpr_t ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate    -0.22809 -0.64990  0.04294  0.0350
Beginner vs. Advanced        -0.23135 -0.69731  0.13994  0.1000
Beginner vs. Near native     -0.27083 -0.71167  0.13167  0.0575
Intermediate vs. Advanced    -0.00326 -0.26032  0.30982  0.9500
Intermediate vs. Near native -0.04275 -0.33657  0.30534  0.7200
Advanced vs. Near native     -0.03949 -0.39064  0.31724  0.7400

Call:
mcppb20(formula = fpr_t ~ level, data = data, tr = 0.2, nboot = 800)

                              psihat ci.lower ci.upper p-value
Beginner vs. Intermediate    -0.13711 -0.47902  0.09103  0.1725
Beginner vs. Advanced        -0.18263 -0.53590  0.10782  0.1200
Beginner vs. Near native     -0.27833 -0.61417  0.01417  0.0100
Intermediate vs. Advanced    -0.04552 -0.22724  0.19950  0.5700
Intermediate vs. Near native -0.14123 -0.35980  0.05936  0.0275
Advanced vs. Near native     -0.09571 -0.36449  0.11231  0.2375
```

```
Fit: aov(formula = mpa_va ~ part, data = Data22)

$part
                     diff        lwr        upr     p adj
Indo-B-Indo-A -0.96646465 -2.2731243 0.34019498 0.3049017
Indo-I-Indo-A -0.51019481 -1.6815125 0.66112292 0.8736045
Indo-T-Indo-A -0.41363636 -1.6532425 0.82596980 0.9667808
Tur-A-Indo-A  -1.00890909 -2.2791274 0.26130924 0.2221331
Tur-B-Indo-A  -0.45090909 -1.7575687 0.85575054 0.9601769
Tur-I-Indo-A  -1.09783217 -2.2888072 0.09314291 0.0928115
Tur-T-Indo-A   0.43131313 -0.8753465 1.73797276 0.9686886
Indo-I-Indo-B  0.45626984 -0.7857934 1.69833311 0.9446975
Indo-T-Indo-B  0.55282828 -0.7538313 1.85948791 0.8893878
Tur-A-Indo-B  -0.04244444 -1.3781804 1.29329151 1.0000000
Tur-B-Indo-B   0.51555556 -0.8548806 1.88599173 0.9375372
Tur-I-Indo-B  -0.13136752 -1.3919855 1.12925041 0.9999799
Tur-T-Indo-B   1.39777778  0.0273416 2.76821396 0.0423105
Indo-T-Indo-I  0.09655844 -1.0747593 1.26787617 0.9999960
Tur-A-Indo-I  -0.49871429 -1.7023822 0.70495360 0.8997115
Tur-B-Indo-I   0.05928571 -1.1827776 1.30134898 0.9999999
Tur-I-Indo-I  -0.58763736 -1.7073621 0.53208734 0.7280416
Tur-T-Indo-I   0.94150794 -0.3005553 2.18357120 0.2752125
Tur-A-Indo-T  -0.59527273 -1.8654911 0.67494561 0.8259770
Tur-B-Indo-T  -0.03727273 -1.3439324 1.26938690 1.0000000
Tur-I-Indo-T  -0.68419580 -1.8751709 0.50677928 0.6290251
Tur-T-Indo-T   0.84494949 -0.4617101 2.15160912 0.4793156
Tur-B-Tur-A    0.55800000 -0.7777360 1.89373596 0.8957544
Tur-I-Tur-A   -0.08892308 -1.3117284 1.13388223 0.9999983
Tur-T-Tur-A    1.44022222  0.1044863 2.77595818 0.0254660
Tur-I-Tur-B   -0.64692308 -1.9075410 0.61369486 0.7498090
Tur-T-Tur-B    0.88222222 -0.4882140 2.25265840 0.4852284
Tur-T-Tur-I    1.52914530  0.2685274 2.78976323 0.0070946
```

```
Fit: aov(formula = fpa_va ~ part, data = Data22)

$part
                     diff         lwr         upr     p adj
Indo-B-Indo-A -1.14848485 -2.38942024  0.09245054 0.0902520
Indo-I-Indo-A -0.55967532 -1.67207643  0.55272578 0.7680651
Indo-T-Indo-A -0.61090909 -1.78816377  0.56634559 0.7391317
Tur-A-Indo-A  -1.21681818 -2.42314525 -0.01049111 0.0465103
Tur-B-Indo-A  -0.48070707 -1.72164246  0.76022832 0.9276380
Tur-I-Indo-A  -1.25258741 -2.38365712 -0.12151770 0.0195342
Tur-T-Indo-A  -0.02959596 -1.27053135  1.21133943 1.0000000
Indo-I-Indo-B  0.58880952 -0.59077866  1.76839771 0.7750944
Indo-T-Indo-B  0.53757576 -0.70335963  1.77851115 0.8766967
Tur-A-Indo-B  -0.06833333 -1.33688253  1.20021586 0.9999998
Tur-B-Indo-B   0.66777778 -0.63372624  1.96928179 0.7499891
Tur-I-Indo-B  -0.10410256 -1.30131213  1.09310700 0.9999942
Tur-T-Indo-B   1.11888889 -0.18261513  2.42039290 0.1451680
Indo-T-Indo-I -0.05123377 -1.16363488  1.06116734 0.9999999
Tur-A-Indo-I  -0.65714286 -1.80026693  0.48598122 0.6282374
Tur-B-Indo-I   0.07896825 -1.10061993  1.25855644 0.9999990
Tur-I-Indo-I  -0.69291209 -1.75631527  0.37049110 0.4692520
Tur-T-Indo-I   0.53007937 -0.64950882  1.70966755 0.8547313
Tur-A-Indo-T  -0.60590909 -1.81223616  0.60041798 0.7695782
Tur-B-Indo-T   0.13020202 -1.11073337  1.37113741 0.9999790
Tur-I-Indo-T  -0.64167832 -1.77274803  0.48939139 0.6437452
Tur-T-Indo-T   0.58131313 -0.65962226  1.82224852 0.8262748
Tur-B-Tur-A    0.73611111 -0.53243809  2.00466031 0.6170518
Tur-I-Tur-A   -0.03576923 -1.19706812  1.12552966 1.0000000
Tur-T-Tur-A    1.18722222 -0.08132698  2.45577142 0.0833857
Tur-I-Tur-B   -0.77188034 -1.96908991  0.42532923 0.4832253
Tur-T-Tur-B    0.45111111 -0.85039290  1.75261513 0.9592296
Tur-T-Tur-I    1.22299145  0.02578189  2.42020102 0.0417469
```

```
Fit: aov(formula = mpr_va ~ part, data = Data22)

$part
                     diff         lwr        upr     p adj
Indo-B-Indo-A  0.25333333 -0.55931139  1.0659781 0.9772062
Indo-I-Indo-A  0.36000000 -0.36847217  1.0884722 0.7838058
Indo-T-Indo-A  0.19818182 -0.57276066  0.9691243 0.9926140
Tur-A-Indo-A   0.06100000 -0.72898096  0.8509810 0.9999974
Tur-B-Indo-A  -0.93888889 -1.75153361 -0.1262442 0.0124625
Tur-I-Indo-A   0.04692308 -0.69377450  0.7876207 0.9999994
Tur-T-Indo-A  -0.12888889 -0.94153361  0.6837558 0.9996597
Indo-I-Indo-B  0.10666667 -0.66580394  0.8791373 0.9998649
Indo-T-Indo-B -0.05515152 -0.86779624  0.7574932 0.9999990
Tur-A-Indo-B  -0.19233333 -1.02306137  0.6383947 0.9961105
Tur-B-Indo-B  -1.19222222 -2.04453120 -0.3399132 0.0009973
Tur-I-Indo-B  -0.20641026 -0.99042049  0.5776000 0.9914730
Tur-T-Indo-B  -0.38222222 -1.23453120  0.4700868 0.8560374
Indo-T-Indo-I -0.16181818 -0.89029035  0.5666540 0.9969963
Tur-A-Indo-I  -0.29900000 -1.04759155  0.4495916 0.9158773
Tur-B-Indo-I  -1.29888889 -2.07135950 -0.5264183 0.0000359
Tur-I-Indo-I  -0.31307692 -1.00946208  0.3833082 0.8544503
Tur-T-Indo-I  -0.48888889 -1.26135950  0.2835817 0.5075583
Tur-A-Indo-T  -0.13718182 -0.92716278  0.6527991 0.9993818
Tur-B-Indo-T  -1.13707071 -1.94971543 -0.3244260 0.0009928
Tur-I-Indo-T  -0.15125874 -0.89195631  0.5894388 0.9982361
Tur-T-Indo-T  -0.32707071 -1.13971543  0.4855740 0.9127051
Tur-B-Tur-A   -0.99988889 -1.83061692 -0.1691609 0.0077882
Tur-I-Tur-A   -0.01407692 -0.77457052  0.7464167 1.0000000
Tur-T-Tur-A   -0.18988889 -1.02061692  0.6408391 0.9964080
Tur-I-Tur-B    0.98581197  0.20180174  1.7698222 0.0045270
Tur-T-Tur-B    0.81000000 -0.04230898  1.6623090 0.0745518
Tur-T-Tur-I   -0.17581197 -0.95982220  0.6081983 0.9968128
```

```
Fit: aov(formula = fpr_va ~ part, data = Data22)

$part
                     diff          lwr         upr     p adj
Indo-B-Indo-A  0.39232323 -0.412822699  1.19746916 0.7956469
Indo-I-Indo-A  0.17954545 -0.542204634  0.90129554 0.9939479
Indo-T-Indo-A  0.36272727 -0.401101225  1.12655577 0.8160801
Tur-A-Indo-A   0.10154545 -0.681145846  0.88423676 0.9999112
Tur-B-Indo-A  -0.61989899 -1.425044921  0.18524694 0.2569715
Tur-I-Indo-A   0.16300699 -0.570855690  0.89686968 0.9969973
Tur-T-Indo-A   0.27676768 -0.528378255  1.08191361 0.9609959
Indo-I-Indo-B -0.21277778 -0.978120308  0.55256475 0.9882133
Indo-T-Indo-B -0.02959596 -0.834741891  0.77554997 1.0000000
Tur-A-Indo-B  -0.29077778 -1.113840151  0.53228460 0.9548835
Tur-B-Indo-B  -1.01222222 -1.856666399 -0.16777805 0.0081787
Tur-I-Indo-B  -0.22931624 -1.006091905  0.54745943 0.9832818
Tur-T-Indo-B  -0.11555556 -0.959999733  0.72888862 0.9998728
Indo-T-Indo-I  0.18318182 -0.538568271  0.90493191 0.9931633
Tur-A-Indo-I  -0.07800000 -0.819683821  0.66368382 0.9999787
Tur-B-Indo-I  -0.79944444 -1.564786974 -0.03410191 0.0342679
Tur-I-Indo-I  -0.01653846 -0.706497630  0.67342071 1.0000000
Tur-T-Indo-I   0.09722222 -0.668120308  0.86256475 0.9999230
Tur-A-Indo-T  -0.26118182 -1.043873119  0.52150948 0.9667735
Tur-B-Indo-T  -0.98262626 -1.787772194 -0.17748033 0.0065873
Tur-I-Indo-T  -0.19972028 -0.933582963  0.53414240 0.9896091
Tur-T-Indo-T  -0.08595960 -0.891105527  0.71918634 0.9999763
Tur-B-Tur-A   -0.72144444 -1.544506817  0.10161793 0.1290996
Tur-I-Tur-A    0.06146154 -0.692014497  0.81493757 0.9999963
Tur-T-Tur-A    0.17522222 -0.647840151  0.99828460 0.9977020
Tur-I-Tur-B    0.78290598  0.006130317  1.55968165 0.0468241
Tur-T-Tur-B    0.89666667  0.052222490  1.74111084 0.0294586
Tur-T-Tur-I    0.11376068 -0.663014982  0.89053635 0.9997997
```

```
Fit: aov(formula = mpa_t ~ part, data = Data22)

$part
                     diff         lwr        upr     p adj
Indo-B-Indo-A -0.66343434 -1.72047279 0.39360410 0.5184308
Indo-I-Indo-A -0.20097403 -1.14852597 0.74657792 0.9977556
Indo-T-Indo-A -0.09727273 -1.10006745 0.90552199 0.9999877
Tur-A-Indo-A  -0.65054545 -1.67810427 0.37701336 0.5071287
Tur-B-Indo-A  -0.38454545 -1.44158390 0.67249299 0.9474076
Tur-I-Indo-A  -0.87685315 -1.84030715 0.08660086 0.1012678
Tur-T-Indo-A   0.45989899 -0.59713946 1.51693744 0.8742481
Indo-I-Indo-B  0.46246032 -0.54232211 1.46724274 0.8388229
Indo-T-Indo-B  0.56616162 -0.49087683 1.62320006 0.7072428
Tur-A-Indo-B   0.01288889 -1.06767122 1.09344899 1.0000000
Tur-B-Indo-B   0.27888889 -0.82974239 1.38752017 0.9935216
Tur-I-Indo-B  -0.21341880 -1.23321126 0.80637365 0.9979384
Tur-T-Indo-B   1.12333333  0.01470206 2.23196461 0.0447650
Indo-T-Indo-I  0.10370130 -0.84385065 1.05125324 0.9999720
Tur-A-Indo-I  -0.44957143 -1.42329344 0.52415058 0.8366442
Tur-B-Indo-I  -0.18357143 -1.18835385 0.82121099 0.9991390
Tur-I-Indo-I  -0.67587912 -1.58169425 0.22993601 0.2941734
Tur-T-Indo-I   0.66087302 -0.34390941 1.66565544 0.4568772
Tur-A-Indo-T  -0.55327273 -1.58083154 0.47428609 0.7017283
Tur-B-Indo-T  -0.28727273 -1.34431117 0.76976572 0.9896944
Tur-I-Indo-T  -0.77958042 -1.74303442 0.18387358 0.2025263
Tur-T-Indo-T   0.55717172 -0.49986673 1.61421016 0.7236557
Tur-B-Tur-A    0.26600000 -0.81456011 1.34656011 0.9943233
Tur-I-Tur-A   -0.22630769 -1.21551115 0.76289576 0.9963887
Tur-T-Tur-A    1.11044444  0.02988434 2.19100455 0.0396301
Tur-I-Tur-B   -0.49230769 -1.51210014 0.52748476 0.8032153
Tur-T-Tur-B    0.84444444 -0.26418683 1.95307572 0.2694871
Tur-T-Tur-I    1.33675214  0.31695969 2.35654459 0.0025925
```

```
Fit: aov(formula = fpa_t ~ part, data = Data22)

$part
                      diff         lwr        upr     p adj
Indo-B-Indo-A -0.47939394 -1.55246690 0.59367902 0.8584383
Indo-I-Indo-A -0.37701299 -1.33893861 0.58491264 0.9233185
Indo-T-Indo-A -0.09363636 -1.11164276 0.92437003 0.9999915
Tur-A-Indo-A  -0.86372727 -1.90687341 0.17941887 0.1794775
Tur-B-Indo-A  -0.42717172 -1.50024468 0.64590124 0.9172369
Tur-I-Indo-A  -0.95734266 -1.93541157 0.02072625 0.0594656
Tur-T-Indo-A   0.28282828 -0.79024468 1.35590124 0.9914159
Indo-I-Indo-B  0.10238095 -0.91764330 1.12240520 0.9999845
Indo-T-Indo-B  0.38575758 -0.68731539 1.45883054 0.9505679
Tur-A-Indo-B  -0.38433333 -1.48128476 0.71261809 0.9568232
Tur-B-Indo-B   0.05222222 -1.07322619 1.17767064 0.9999999
Tur-I-Indo-B  -0.47794872 -1.51321069 0.55731325 0.8366967
Tur-T-Indo-B   0.76222222 -0.36322619 1.88767064 0.4181789
Indo-T-Indo-I  0.28337662 -0.67854900 1.24530225 0.9834838
Tur-A-Indo-I  -0.48671429 -1.47520696 0.50177839 0.7869251
Tur-B-Indo-I  -0.05015873 -1.07018298 0.96986552 0.9999999
Tur-I-Indo-I  -0.58032967 -1.49988537 0.33922603 0.5112616
Tur-T-Indo-I   0.65984127 -0.36018298 1.67986552 0.4788278
Tur-A-Indo-T  -0.77009091 -1.81323705 0.27305523 0.3072491
Tur-B-Indo-T  -0.33353535 -1.40660832 0.73953761 0.9775810
Tur-I-Indo-T  -0.86370629 -1.84177520 0.11436262 0.1232542
Tur-T-Indo-T   0.37646465 -0.69660832 1.44953761 0.9565195
Tur-B-Tur-A    0.43655556 -0.66039587 1.53350698 0.9173494
Tur-I-Tur-A   -0.09361538 -1.09782435 0.91059358 0.9999907
Tur-T-Tur-A    1.14655556  0.04960413 2.24350698 0.0340715
Tur-I-Tur-B   -0.53017094 -1.56543291 0.50509103 0.7517714
Tur-T-Tur-B    0.71000000 -0.41544842 1.83544842 0.5117543
Tur-T-Tur-I    1.24017094  0.20490897 2.27543291 0.0082398
```

```
Fit: aov(formula = mpr_t ~ part, data = Data22)

$part
                      diff         lwr         upr     p adj
Indo-B-Indo-A  0.041616162 -0.48352006  0.56675239 0.9999969
Indo-I-Indo-A  0.203441558 -0.26730182  0.67418494 0.8780276
Indo-T-Indo-A  0.120909091 -0.37727888  0.61909706 0.9947963
Tur-A-Indo-A  -0.121272727 -0.63176348  0.38921803 0.9954383
Tur-B-Indo-A  -0.612828283 -1.13796451 -0.08769206 0.0111443
Tur-I-Indo-A  -0.091888112 -0.57053163  0.38675540 0.9988134
Tur-T-Indo-A  -0.006161616 -0.53129784  0.51897461 1.0000000
Indo-I-Indo-B  0.161825397 -0.33735006  0.66100085 0.9716466
Indo-T-Indo-B  0.079292929 -0.44584330  0.60442916 0.9997544
Tur-A-Indo-B  -0.162888889 -0.69971066  0.37393289 0.9804370
Tur-B-Indo-B  -0.654444444 -1.20521196 -0.10367692 0.0090636
Tur-I-Indo-B  -0.133504274 -0.64013671  0.37312816 0.9914267
Tur-T-Indo-B  -0.047777778 -0.59854530  0.50298974 0.9999943
Indo-T-Indo-I -0.082532468 -0.55327585  0.38821091 0.9993418
Tur-A-Indo-I  -0.324714286 -0.80845894  0.15903037 0.4299529
Tur-B-Indo-I  -0.816269841 -1.31544530 -0.31709439 0.0000633
Tur-I-Indo-I  -0.295329670 -0.74533822  0.15467888 0.4597995
Tur-T-Indo-I  -0.209603175 -0.70877863  0.28957228 0.8932156
Tur-A-Indo-T  -0.242181818 -0.75267257  0.26830894 0.8168359
Tur-B-Indo-T  -0.733737374 -1.25887360 -0.20860115 0.0010150
Tur-I-Indo-T  -0.212797203 -0.69144072  0.26584631 0.8614521
Tur-T-Indo-T  -0.127070707 -0.65220693  0.39806552 0.9948905
Tur-B-Tur-A   -0.491555556 -1.02837733  0.04526622 0.0971644
Tur-I-Tur-A    0.029384615 -0.46205122  0.52082045 0.9999996
Tur-T-Tur-A    0.115111111 -0.42171066  0.65193289 0.9975948
Tur-I-Tur-B    0.520940171  0.01430774  1.02757260 0.0394330
Tur-T-Tur-B    0.606666667  0.05589915  1.15743419 0.0206285
Tur-T-Tur-I    0.085726496 -0.42090594  0.59235893 0.9994785
```

```
Fit: aov(formula = fpr_t ~ part, data = Data22)

$part
                      diff         lwr         upr     p adj
Indo-B-Indo-A -0.017979798 -0.58916926 0.553209663 1.0000000
Indo-I-Indo-A  0.040194805 -0.47183168 0.552221294 0.9999971
Indo-T-Indo-A -0.044545455 -0.58642336 0.497332447 0.9999961
Tur-A-Indo-A  -0.047090909 -0.60235053 0.508168709 0.9999951
Tur-B-Indo-A  -0.493535354 -1.06472481 0.077654108 0.1408695
Tur-I-Indo-A  -0.149090909 -0.66971036 0.371528539 0.9859815
Tur-T-Indo-A   0.142020202 -0.42916926 0.713209663 0.9939664
Indo-I-Indo-B  0.058174603 -0.48477739 0.601126595 0.9999758
Indo-T-Indo-B -0.026565657 -0.59775512 0.544623805 0.9999999
Tur-A-Indo-B  -0.029111111 -0.61301092 0.554788695 0.9999999
Tur-B-Indo-B  -0.475555556 -1.07462412 0.123513005 0.2227530
Tur-I-Indo-B  -0.131111111 -0.68217404 0.419951816 0.9953951
Tur-T-Indo-B   0.160000000 -0.43906856 0.759068561 0.9907086
Indo-T-Indo-I -0.084740260 -0.59676675 0.427286229 0.9995492
Tur-A-Indo-I  -0.087285714 -0.61345366 0.438882233 0.9995422
Tur-B-Indo-I  -0.533730159 -1.07668215 0.009221833 0.0574730
Tur-I-Indo-I  -0.189285714 -0.67875898 0.300187548 0.9282511
Tur-T-Indo-I   0.101825397 -0.44112660 0.644777389 0.9989797
Tur-A-Indo-T  -0.002545455 -0.55780507 0.552714164 1.0000000
Tur-B-Indo-T  -0.448989899 -1.02017936 0.122199562 0.2335103
Tur-I-Indo-T  -0.104545455 -0.62516490 0.416073994 0.9984156
Tur-T-Indo-T   0.186565657 -0.38462380 0.757755118 0.9704492
Tur-B-Tur-A   -0.446444444 -1.03034425 0.137455362 0.2650432
Tur-I-Tur-A   -0.102000000 -0.63653362 0.432533622 0.9988587
Tur-T-Tur-A    0.189111111 -0.39478870 0.773010917 0.9717958
Tur-I-Tur-B    0.344444444 -0.20661848 0.895507372 0.5237832
Tur-T-Tur-B    0.635555556  0.03648699 1.234624117 0.0297028
Tur-T-Tur-I    0.291111111 -0.25995182 0.842174038 0.7214249
```

Appendix 9 Raw Data

Results of Past Tense Narrative Tasks of Indonesian and Turkish Groups

Verbal Agreement in Past Tense

Beginner Level of Indonesian and Turkish Groups

Table A.9.1 Verbal Agreement in Past Tense: Indo-Group-B

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Indo-B1	1	0	100	2	0	100
Indo-B2	20	0	100	23	4	85.18
Indo-B3	1	0	100	2	0	100
Indo-B4	11	0	100	3	0	100
Indo-B5	0	0	0	0	1	0
Indo-B6	17	0	100	15	0	100
Indo-B7	2	0	100	3	0	100
Indo-B8	7	0	100	4	0	100
Indo-B9	3	0	100	1	0	100

Table A.9.2 Verbal Agreement in Past Tense: Tur-Group-B

Past Tense Narrative Tasks	Past Verbal M. Agreement		Correct%	Past Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-B1	18	0	100	10	3	76.92
Tur-B2	14	5	73.68	15	2	88.23
Tur-B3	9	10	47.36	7	3	70
Tur-B4	14	0	100	10	2	83.33
Tur-B5	4	11	26.66	9	8	53.94
Tur-B6	8	0	100	12	0	100
Tur-B7	1	0	100	0	0	0
Tur-B8	2	0	100	3	1	75
Tur-B9	11	0	100	10	1	90.90

Intermediate Level of Indonesian and Turkish Groups

Table A.9.3 Verbal Agreement in Past Tense: Indo-Group-I

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Indo-I1	1	0	100	4	0	100
Indo-I2	3	0	100	7	0	100
Indo-I3	0	0	0	5	0	100
Indo-I4	9	0	100	7	0	100
Indo-I5	16	0	100	15	0	100
Indo-I6	39	0	100	20	9	68.96
Indo-I7	10	0	100	15	0	100
Indo-I8	15	0	100	11	0	100
Indo-I9	7	0	100	8	1	88.88
Indo-I10	3	0	100	0	1	0
Indo-I11	13	0	100	11	0	100
Indo-I12	2	0	100	2	0	100
Indo-I13	23	0	100	18	2	90
Indo-I14	3	0	100	10	0	100

Table A.9.4 Verbal Agreement in Past Tense: Tur-Group-I

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-I1	1	0	100	1	0	100
Tur-I2	0	1	0	1	0	100
Tur-I3	9	0	100	7	2	77.77
Tur-I4	0	0	0	1	0	100
Tur-I5	21	0	100	28	1	96.55
Tur-I6	4	0	100	1	1	50
Tur-I7	0	0	0	0	0	0
Tur-I8	0	0	0	0	0	0
Tur-I9	30	0	100	24	0	100
Tur-I10	9	1	90	10	0	100
Tur-I11	14	0	100	11	0	100
Tur-I12	2	0	100	1	0	100
Tur-I13	1	0	100	0	0	0

Advanced Level of Indonesian and Turkish Groups

Table A.9.5 Verbal Agreement in Past Tense: Indo-Group-A

Past Tense Narrative Tasks	Past Verbal M. Agreement		Correct%	Past Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-A1	39	0	100	3	32	8.57
Indo-A2	22	2	91.66	21	1	95.45
Indo-A3	32	0	100	30	0	100
Indo-A4	17	0	100	6	8	42.85
Indo-A5	3	0	100	13	0	100
Indo-A6	23	1	95.83	21	3	87.5
Indo-A7	28	1	96.55	21	1	95.45
Indo-A8	26	0	100	25	1	96.15
Indo-A9	0	0	0	16	0	100
Indo-A10	32	0	100	25	1	96.15
Indo-A11	2	1	66.66	2	0	100

Table A.9.6 Verbal Agreement in Past Tense: Tur-Group-A

Past Tense Narrative Tasks	Past Verbal M. Agreement		Correct%	Past Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-A1	0	0	0	0	0	0
Tur-A2	4	1	80	0	0	0
Tur-A3	1	1	50	1	0	100
Tur-A4	15	0	100	10	2	83.33
Tur-A5	5	4	55.55	10	8	55.55
Tur-A6	2	0	100	1	0	100
Tur-A7	1	0	100	1	0	100
Tur-A8	23	0	100	28	0	100
Tur-A9	11	1	91.66	12	1	92.30
Tur-A10	1	0	100	0	0	0

Near Native Level of Indonesian and Turkish Groups

Table A.9.7 Verbal Agreement in Past Tense: Indo-Group-T

Past Tense Narrative Tasks	Past Verbal M. Agreement		Correct%	Past Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-T1	3	0	100	0	4	0
Indo-T2	48	1	97.95	40	3	93.02
Indo-T3	1	0	100	5	1	83.33
Indo-T4	4	0	100	0	0	0
Indo-T5	11	0	100	11	0	100
Indo-T6	17	0	100	11	1	91.66
Indo-T7	7	0	100	10	1	90.90
Indo-T8	10	0	100	11	0	100
Indo-T9	26	0	100	20	0	100
Indo-T10	13	0	100	9	0	100
Indo-T11	3	0	100	1	0	100

Table A.9.8 Verbal Agreement in Past Tense: Tur-Group-T

Past Tense Narrative Tasks	Past Verbal M. Agreement		Correct%	Past Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-T1	30	0	100	19	2	90.47
Tur-T2	12	0	100	12	0	100
Tur-T3	27	3	90	9	10	47.36
Tur-T4	48	3	94.11	45	13	77.58
Tur-T5	23	2	92	12	4	75
Tur-T6	27	0	100	4	7	36.36
Tur-T7	12	0	100	11	0	100
Tur-T8	16	0	100	15	0	100
Tur-T9	15	0	100	9	0	100

Results of Present Tense Narrative Tasks of Indonesian and Turkish Groups

Verbal Agreement in Present Tense

Beginner Level of Indonesian and Turkish Groups

Table A.9.9 Verbal Agreement in Present Tense: Indo-Group-B

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-B1	23	0	100	24	1	96
Indo-B2	12	1	92.30	11	1	91.66
Indo-B3	32	1	96.96	4	19	17.39
Indo-B4	21	0	100	25	1	96.15
Indo-B5	29	0	100	25	0	100
Indo-B6	18	1	94.73	23	0	100
Indo-B7	27	1	96.42	25	2	92.59
Indo-B8	32	1	96.96	27	1	96.42
Indo-B9	27	0	100	19	4	82.60

Table A.9.10 Verbal Agreement in Present Tense: Tur-Group-B

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-B1	0	1	0	0	1	0
Tur-B2	5	0	100	0	4	0
Tur-B3	4	0	100	8	2	80
Tur-B4	1	1	50	2	8	20
Tur-B5	0	2	0	1	2	33.33
Tur-B6	16	1	94.11	13	0	100
Tur-B7	18	1	94.73	18	4	81.81
Tur-B8	12	2	85.71	15	3	83.33
Tur-B9	16	0	100	14	0	100

Intermediate Level of Indonesian and Turkish Groups

Table A.9.11 Verbal Agreement in Present Tense: Indo-Group-I

Present Tense Narrative Tasks	**Present Verbal M. Agreement**		**Correct%**	**Present Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Indo-I1	51	1	98.07	23	4	85.18
Indo-I2	45	0	100	30	1	96.77
Indo-I3	16	2	88.88	18	1	94.73
Indo-I4	47	1	97.91	38	0	100
Indo-I5	32	0	100	17	5	77.27
Indo-I6	23	0	100	10	13	43.47
Indo-I7	26	0	100	17	5	77.27
Indo-I8	22	0	100	13	3	81.25
Indo-I9	20	0	100	14	1	93.33
Indo-I10	27	1	96.42	21	2	91.30
Indo-I11	17	0	100	17	2	89.47
Indo-I12	50	0	100	2	30	6.25
Indo-I13	9	0	100	4	1	80
Indo-I14	29	0	100	13	9	59.09

Table A.9.12 Verbal Agreement in Present Tense: Tur-Group-I

Present Tense Narrative Tasks	**Present Verbal M. Agreement**		**Correct%**	**Present Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-I1	28	0	100	28	0	100
Tur-I2	24	0	100	22	1	95.65
Tur-I3	15	0	100	14	0	100
Tur-I4	23	4	85.18	23	5	82.14
Tur-I5	21	0	100	7	0	100
Tur-I6	19	0	100	25	1	96.15
Tur-I7	26	0	100	23	2	92
Tur-I8	30	0	100	25	1	96.15
Tur-I9	8	0	100	4	0	100
Tur-I10	14	0	100	7	4	63.63
Tur-I11	9	0	100	10	0	100
Tur-I12	10	0	100	13	4	76.47
Tur-I13	28	0	100	24	2	92.30

Advanced Level of Indonesian and Turkish Groups

Table A.9.13 Verbal Agreement in Present Tense: Indo-Group-A

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-A1	19	1	95	7	10	41.17
Indo-A2	26	4	86.66	22	5	81.48
Indo-A3	6	0	100	2	2	50
Indo-A4	24	0	100	20	6	76.92
Indo-A5	36	0	100	17	3	85
Indo-A6	27	0	100	13	2	86.66
Indo-A7	5	0	100	10	0	100
Indo-A8	22	0	100	7	2	77.77
Indo-A9	29	0	100	4	0	100
Indo-A10	14	0	100	11	1	91.66
Indo-A11	30	0	100	37	5	88.09

Table A.9.14 Verbal Agreement in Present Tense: Tur-Group-A

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-A1	27	0	100	4	17	19.04
Tur-A2	16	3	84.21	19	0	100
Tur-A3	21	2	91.30	20	7	74.07
Tur-A4	29	0	100	20	0	100
Tur-A5	51	1	98.07	42	11	79.24
Tur-A6	27	0	100	28	2	93.33
Tur-A7	11	0	100	11	2	84.61
Tur-A8	5	1	83.33	2	0	100
Tur-A9	18	1	94.73	19	0	100
Tur-A10	27	0	100	22	1	95.65

Near Native Level of Indonesian and Turkish Groups

Table A.9.15 Verbal Agreement in Present Tense: Indo-Group-T

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-T1	43	0	100	2	30	6.25
Indo-T2	10	0	100	18	2	90
Indo-T3	3	27	10	25	2	92.59
Indo-T4	34	3	91.89	29	4	87.87
Indo-T5	29	0	100	29	0	100
Indo-T6	8	1	88.88	5	0	100
Indo-T7	60	0	100	54	1	98.18
Indo-T8	66	0	100	55	0	100
Indo-T9	7	0	100	14	0	100
Indo-T10	32	0	100	20	2	90.90
Indo-T11	30	0	100	14	14	50

Table A.9.16 Verbal Agreement in Present Tense: Tur-Group-T

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-T1	30	0	100	31	0	100
Tur-T2	33	1	97.05	31	0	100
Tur-T3	34	5	87.17	30	2	93.75
Tur-T4	8	0	100	4	0	100
Tur-T5	13	0	100	16	1	94.11
Tur-T6	4	0	100	12	4	75
Tur-T7	23	0	100	24	0	100
Tur-T8	16	0	100	20	0	100
Tur-T9	11	0	100	14	8	63.63

Results of Past Tense Narrative Tasks of Indonesian Groups

Past Tense

Beginner Level of Indonesian and Turkish Groups

Table A.9.17 Past Tense Narrative Tasks: Indo-Group-B

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-B1	0	9	0	0	10	0
Indo-B2	7	4	63.63	10	2	83.33
Indo-B3	0	9	0	1	8	11.11
Indo-B4	8	4	66.66	3	9	25
Indo-B5	0	12	0	1	9	10
Indo-B6	9	2	81.81	10	1	90.90
Indo-B7	2	12	14.28	3	12	20
Indo-B8	4	12	25	1	13	7.14
Indo-B9	1	10	9.09	0	10	0

Table A.9.18 Past Tense Narrative Tasks: Tur-Group-B

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-B1	7	0	100	3	1	75
Tur-B2	8	1	88.88	7	2	77.77
Tur-B3	9	0	100	8	1	88.88
Tur-B4	7	0	100	8	0	100
Tur-B5	4	2	66.66	8	1	88.88
Tur-B6	4	6	40	10	0	100
Tur-B7	1	9	10	0	9	0
Tur-B8	1	3	25	1	7	12.5
Tur-B9	10	0	100	11	0	100

Intermediate Level of Indonesian and Turkish Groups

Table A.9.19 Past Tense Narrative Tasks: Indo-Group-I

Past Tense Narrative Tasks	**Past Tense S.M.**		**Correct%**	**Past Tense S.F.**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Indo-I 1	1	18	5.26	4	7	36.36
Indo-I2	2	14	12.5	7	7	50
Indo-I3	0	2	0	4	5	44.44
Indo-I4	6	15	28.57	6	14	30
Indo-I5	7	14	33.33	9	5	64.28
Indo-I6	21	4	84	20	2	90.90
Indo-I7	4	7	36.36	7	3	70
Indo-I8	8	6	57.14	8	3	72.72
Indo-I9	6	5	54.54	8	1	88.88
Indo-I10	2	9	18.18	0	7	0
Indo-I11	11	0	100	1	18	5.26
Indo-I12	2	9	18.18	0	10	0
Indo-I13	13	2	86.66	10	0	100
Indo-I14	1	16	5.88	5	10	33.33

Table A.9.20 Past Tense Narrative Tasks: Tur-Group-I

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-I1	0	13	0	0	9	0
Tur-I2	0	12	0	0	9	0
Tur-I3	9	0	100	9	0	100
Tur-I4	0	8	0	1	6	14.28
Tur-I5	9	8	52.94	11	2	84.61
Tur-I6	3	6	33.33	2	9	18.18
Tur-I7	0	10	0	0	10	0
Tur-I8	0	10	0	0	10	0
Tur-I9	10	1	90.90	10	0	100
Tur-I10	8	1	88.88	9	0	100
Tur-I 11	9	0	100	8	1	88.88
Tur-I 12	0	0	0	1	3	25
Tur-I 13	1	10	9.09	0	11	0

Advanced Level of Indonesian and Turkish Groups

Table A.9.21 Past Tense Narrative Tasks: Indo-Group-A

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-A1	11	3	78.57	12	2	85.71
Indo-A2	13	3	81.25	10	5	66.66
Indo-A3	13	2	86.66	15	3	83.33
Indo-A4	12	5	70.58	11	6	64.70
Indo-A5	1	14	6.66	12	1	92.30
Indo-A6	13	7	65	10	6	62.5
Indo-A7	12	1	92.30	9	0	100
Indo-A8	14	6	70	11	3	78.57
Indo-A9	0	14	0	7	3	70
Indo-A10	15	4	78.94	11	3	78.57
Indo-A11	3	7	30	0	12	0

Table A.9.22 Past Tense Narrative Tasks: Tur-Group-A

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-A1	0	11	0	0	8	0
Tur-A2	3	5	37.5	0	7	0
Tur-A3	1	7	12.5	1	7	12.5
Tur-A4	15	2	88.23	12	1	92.30
Tur-A5	9	26	25.71	18	27	40
Tur-A6	0	10	0	0	9	0
Tur-A7	0	0	0	1	0	100
Tur-A8	9	2	81.81	11	0	100
Tur-A9	12	2	85.71	13	5	72.22
Tur-A10	1	9	10	0	8	0

Near Native Level of Indonesian and Turkish Groups

Table A.9.23 Past Tense Narrative Tasks: Indo-Group-T

Past Tense Narrative Tasks	**Past Tense S.M.**		**Correct%**	**Past Tense S.F.**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Indo-T1	3	19	13.63	3	14	17.64
Indo-T2	21	4	84	21	11	65.62
Indo-T3	1	12	7.69	4	12	25
Indo-T4	2	17	10.52	0	18	0
Indo-T5	9	10	47.36	10	7	58.82
Indo-T6	12	3	80	10	5	66.66
Indo-T7	3	5	37.5	6	19	24
Indo-T8	7	20	25.92	8	20	28.57
Indo-T9	14	2	87.5	11	0	100
Indo-T10	6	15	28.57	3	9	25
Indo-T11	1	10	9.09	1	10	9.09

Table A.9.24 Past Tense Narrative Tasks: Tur-Group-T

Past Tense Narrative Tasks	**Past Tense S.M.**		**Correct%**	**Past Tense S.F.**		**Correct%**
	Correct	Incorrect		Correct	Incorrect	
Tur-T1	29	8	78.37	20	6	76.92
Tur-T2	12	3	80	12	2	85.71
Tur-T3	17	9	65.38	8	7	53.33
Tur-T4	24	1	96	20	0	100
Tur-T5	18	3	85.71	13	2	86.66
Tur-T6	13	0	100	10	0	100
Tur-T7	12	0	100	11	2	84.61
Tur-T8	11	1	91.66	13	0	100
Tur-T9	9	0	100	9	1	90

Results of Present Tense Narrative Tasks of Indonesian Groups

Present Tense

Beginner Level of Indonesian and Turkish Groups

Table A.9.25 Present Tense Narrative Tasks: Indo-Group-B

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-B1	14	1	93.33	15	2	88.23
Indo-B2	9	13	40.90	10	17	37.03
Indo-B3	24	1	96	15	1	93.75
Indo-B4	17	3	85	17	0	100
Indo-B5	17	0	100	16	0	100
Indo-B6	17	8	68	22	5	81.48
Indo-B7	16	0	100	15	0	100
Indo-B8	21	3	87.5	15	3	83.33
Indo-B9	17	2	89.47	13	1	92.85

Table A.9.26 Present Tense Narrative Tasks: Tur-Group-B

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-B1	1	11	8.33	0	10	0
Tur-B2	4	11	26.66	2	10	16.66
Tur-B3	4	10	28.57	9	2	81.81
Tur-B4	2	7	22.22	10	4	71.42
Tur-B5	0	11	0	2	9	18.18
Tur-B6	11	4	73.33	13	2	86.66
Tur-B7	10	0	100	13	0	100
Tur-B8	11	1	91.66	11	3	78.57
Tur-B9	16	1	94.11	14	0	100

Intermediate Level of Indonesian and Turkish Groups

Table A.9.27 Present Tense Narrative Tasks: Indo-Group-I

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-I1	34	0	100	20	0	100
Indo-I2	31	1	96.87	24	0	100
Indo-I3	16	0	100	14	1	93.33
Indo-I4	33	3	91.66	24	1	96
Indo-I5	18	9	66.66	17	6	73.91
Indo-I6	19	18	51.35	21	9	70
Indo-I7	19	6	76	19	8	70.37
Indo-I8	16	7	69.56	13	3	81.25
Indo-I9	15	1	93.75	14	1	93.33
Indo-I10	19	1	95	16	1	94.11
Indo-I11	17	2	89.47	18	1	94.73
Indo-I12	41	0	100	22	2	91.66
Indo-I13	7	10	41.17	5	10	33.33
Indo-I14	13	2	86.66	12	5	70.58

Table A.9.28 Present Tense Narrative Tasks: Tur-Group-I

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-I1	15	1	93.75	19	1	95
Tur-I2	12	1	92.30	14	1	93.33
Tur-I3	15	0	100	14	0	100
Tur-I4	19	0	100	22	0	100
Tur-I5	13	12	52	5	18	21.73
Tur-I6	13	1	92.85	17	0	100
Tur-I7	16	0	100	15	0	100
Tur-I8	20	0	100	16	0	100
Tur-I9	7	20	25.92	4	14	22.22
Tur-I10	13	2	86.66	11	1	91.66
Tur-I11	9	5	64.28	9	3	75
Tur-I12	10	2	83.33	14	0	100
Tur-I13	18	0	100	15	0	100

Advanced Level of Indonesian and Turkish Groups

Table A.9.29 Present Tense Narrative Tasks: Indo-Group-A

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-A1	17	28	37.77	15	23	39.47
Indo-A2	27	11	71.05	22	12	64.70
Indo-A3	4	19	17.39	1	15	6.25
Indo-A4	19	5	79.16	20	3	86.95
Indo-A5	22	2	91.66	19	1	95
Indo-A6	20	11	64.51	9	14	39.13
Indo-A7	4	17	19.04	10	13	43.47
Indo-A8	16	12	57.14	6	15	28.57
Indo-A9	15	0	100	1	9	10
Indo-A10	10	17	37.03	9	15	37.5
Indo-A11	23	0	100	30	2	93.75

Table A.9.30 Present Tense Narrative Tasks: Tur-Group-A

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-A1	16	0	100	13	0	100
Tur-A2	14	2	87.5	12	0	100
Tur-A3	17	0	100	20	0	100
Tur-A4	27	0	100	19	0	100
Tur-A5	26	0	100	26	0	100
Tur-A6	17	2	89.47	21	1	95.45
Tur-A7	11	1	91.66	13	0	100
Tur-A8	4	14	22.22	2	17	10.52
Tur-A9	17	0	100	14	0	100
Tur-A10	18	0	100	15	0	100

Near Native Level of Indonesian and Turkish Groups

Table A.9.31 Present Tense Narrative Tasks: Indo-Group-T

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Indo-T1	24	0	100	18	1	94.73
Indo-T2	6	28	17.64	9	22	29.03
Indo-T3	18	0	100	15	2	88.23
Indo-T4	20	2	90.90	15	0	100
Indo-T5	19	2	90.47	22	1	95.65
Indo-T6	6	5	54.54	0	2	0
Indo-T7	55	4	93.22	36	5	87.80
Indo-T8	46	3	93.87	35	3	92.10
Indo-T9	5	12	29.41	14	9	60.86
Indo-T10	17	7	70.83	13	6	68.42
Indo-T11	20	2	90.90	18	0	100

Table A.9.32 Present Tense Narrative Tasks: Tur-Group-T

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-T1	22	1	95.65	25	1	96.15
Tur-T2	31	0	100	29	0	100
Tur-T3	30	13	69.76	25	11	69.44
Tur-T4	7	27	20.58	4	38	9.52
Tur-T5	10	7	58.82	15	3	83.33
Tur-T6	4	14	22.22	16	1	94.11
Tur-T7	23	0	100	22	0	100
Tur-T8	15	5	75	20	2	90.90
Tur-T9	11	6	64.70	21	0	100

Results of Past Tense Narrative Tasks of Turkish and Indonesian Groups

Verbal Agreement in Past Tense

Beginner Level of Turkish and Indonesian Groups

Table A.9.33 Verbal Agreement in Past Tense: Tur-Group-B and Indo-Group-B Comparison

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-B	81	26	75.70	76	20	79.16
Indo-Group-B	62	0	100	53	5	91.37

Intermediate Level of Turkish and Indonesian Groups

Table A.9.34 Verbal Agreement in Past Tense: Tur-Group-I and Indo-Group-I Comparison

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-I	91	2	97.84	85	4	95.50
Indo-Group-I	144	0	100	133	13	91.09

Advanced Level of Turkish and Indonesian Groups

Table A.9.35 Verbal Agreement in Past Tense: Tur-Group-A and Indo-Group-A

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-A	63	7	90	63	11	85.13
Indo-Group-A	224	5	97.78	183	47	79.56

Near Native Level of Turkish and Indonesian Groups

Table A.9.36 Verbal Agreement in Past Tense: Tur-Group-T and Indo-Group-T Comparison

Past Tense Narrative Tasks	**Past Verbal M. Agreement**		**Correct%**	**Past Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-T	210	8	96.33	136	36	79.06
Indo-Group-T	143	1	99.30	118	10	92.18

Results of Present Tense Narrative Tasks

Verbal Agreement in Present Tense

Beginner Level of Turkish and Indonesian Groups

Table A.9.37 Verbal Agreement in Present Tense: Tur-Group-B and Indo-Group-B Comparison

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-Group-B	72	8	90	71	24	74.73
Indo-Group-B	221	5	97.78	183	29	86.32

Intermediate Level of Turkish and Indonesian Groups

Table A.9.38 Verbal Agreement in Present Tense: Tur-Group-I and Indo-Group-I Comparison

Present Tense Narrative Tasks	Present Verbal M. Agreement		Correct%	Present Verbal F. Agreement		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-Group-I	255	4	98.45	225	20	91.83
Indo-Group-I	414	5	98.80	237	77	75.47

Advanced Level of Turkish and Indonesian Groups

Table A.9.39 Verbal Agreement in Present Tense: Tur-Group-A and Indo-Group-A Comparison

Present Tense Narrative Tasks	**Present Verbal M. Agreement**		**Correct%**	**Present Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-A	232	8	96.66	187	40	82.37
Indo-Group-A	238	5	97.94	150	36	80.64

Near Native Level of Turkish and Indonesian Groups

Table A.9.40 Verbal Agreement in Present Tense: Tur-Group-T and Indo-Group-T Comparison

Present Tense Narrative Tasks	**Present Verbal M. Agreement**		**Correct%**	**Present Verbal F. Agreement**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-T	172	6	96.62	182	15	92.38
Indo-Group-T	322	31	91.21	265	55	82.81

Results of Past Tense Narrative Tasks

Past Tense

Beginner Level of Turkish and Indonesian Groups

Table A.9.41 Past Tense Narrative Tasks: Tur-Group-B and Indo-Group-B Comparison

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-Group-B	51	21	70.83	56	21	72.72
Indo-Group-B	31	74	29.52	29	74	28.15

Intermediate Level of Turkish and Indonesian Groups

Table A.9.42 Past Tense Narrative Tasks: Tur-Group-I and Indo-Group-I Comparison

Past Tense Narrative Tasks	Past Tense S.M.		Correct%	Past Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-Group-I	49	79	38.28	51	70	42.14
Indo-Group-I	84	121	40.97	98	75	56.64

Advanced Level of Turkish and Indonesian Groups

Table A.9.43 Past Tense Narrative Tasks: Tur-Group-A and Indo-Group-A Comparison

Past Tense Narrative Tasks	**Past Tense S.M.**		**Correct%**	**Past Tense S.F.**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-A	50	74	40.32	56	72	43.75
Indo-Group-A	107	66	61.84	108	44	71.05

Near Native Level of Turkish and Indonesian Groups

Table A.9.44 Past Tense Narrative Tasks: Tur-Group-T and Indo-Group-T Comparison

Past Tense Narrative Tasks	**Past Tense S.M.**		**Correct%**	**Past Tense S.F.**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-T	145	25	85.29	116	20	85.29
Indo-Group-T	79	117	40.30	77	125	38.11

Results of Present Tense Narrative Tasks

Present Tense

Beginner Level of Turkish and Indonesian Groups

Table A.9.45 Present Tense Narrative Tasks: Tur-Group-B and Indo-Group-B Comparison

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-Group-B	59	56	51.30	74	40	64.91
Indo-Group-B	152	31	83.06	138	29	82.63

Intermediate Level of Turkish and Indonesian Groups

Table A.9.46 Present Tense Narrative Tur-Group-I and Indo-Group-I Comparison

Present Tense Narrative Tasks	Present Tense S.M.		Correct%	Present Tense S.F.		Correct%
	Correct	Incorrect		Correct	Incorrect	
Tur-Group-I	180	44	80.35	175	38	82.15
Indo-Group-I	298	60	83.24	239	48	83.27

Table A.9.47 Advanced Level of Turkish and Indonesian Groups

Present Tense Narrative Tasks: Tur-Group-A and Indo-Group-A Comparison

Present Tense Narrative Tasks	**Present Tense S.M.**		**Correct%**	**Present Tense S.F.**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-A	167	19	89.78	155	18	89.59
Indo-Group-A	177	122	59.19	142	122	53.78

Near Native Level of Turkish and Indonesian Groups

Table A.9.48 Present Tense Narrative Tasks: Tur-Group-T and Indo-Group-T Comparison

Present Tense Narrative Tasks	**Present Tense S.M.**		**Correct%**	**Present Tense S.F.**		**Correct%**
	Correct	**Incorrect**		**Correct**	**Incorrect**	
Tur-Group-T	153	73	67.69	177	56	75.96
Indo-Group-T	236	65	78.40	195	51	79.26

Appendix 10 Standard Deviation of Variables

Table A.10.1 SD of Participant Scores According to the Performance of the Participants on the Target Forms by L1 and Proficiency Level

L1	Proficiency Level	Total	Masculine	Feminine	Pa	Pr	VA	T
Indonesian	Beginner	0.38	0.43	0.36	0.79	0.15	0.39	0.42
	Intermediate	0.31	0.39	0.32	0.60	0.32	0.34	0.29
	Advanced	0.33	0.46	0.25	0.68	0.46	0.34	0.32
	Near native	0.41	0.37	0.55	0.73	0.61	0.47	0.40
	Total	**0.36**	**0.42**	**0.39**	**0.72**	**0.41**	**0.39**	**0.36**
Turkish	Beginner	0.32	0.32	0.39	0.63	0.63	0.34	0.30
	Intermediate	0.39	0.42	0.37	0.95	0.27	0.38	0.42
	Advanced	0.56	0.56	0.60	1.02	0.44	0.55	0.60
	Near native	0.26	0.30	0.23	0.36	0.40	0.28	0.25
	Total	**0.49**	**0.50**	**0.50**	**0.94**	**0.51**	**0.49**	**0.50**
Total	Beginner	0.36	0.39	0.38	0.72	0.62	0.38	0.37
	Intermediate	0.40	0.46	0.39	0.84	0.31	0.41	0.41
	Advanced	0.50	0.54	0.51	0.96	0.43	0.51	0.51
	Near native	0.37	0.35	0.44	0.66	0.51	0.41	0.35
	Total	**0.44**	**0.47**	**0.45**	**0.84**	**0.48**	**0.46**	**0.44**

Pa=past tense, Pr=present tense, VA=verbal agreement, T=tense

Table A.10.2 SD of Participant Scores According to the Performance of the Participants on the Target Forms by L1 and Proficiency Level

L1	Proficiency Level	MPA	FPA	MPR	FPR	M_VA	F_VA	M_T	F_T	PA_VA	PR_VA	PA_T	PR_T
Indonesian	Beginner	0.93	0.70	0.21	0.21	0.39	0.43	0.50	0.38	0.91	0.25	0.86	0.16
	Intermediate	0.76	0.59	0.37	0.32	0.42	0.37	0.38	0.31	0.74	0.41	0.49	0.27
	Advanced	0.89	0.68	0.53	0.44	0.49	0.27	0.44	0.28	0.80	0.56	0.59	0.37
	Near native	0.75	0.83	0.62	0.68	0.46	0.63	0.32	0.55	0.93	0.62	0.59	0.64
	Total	**0.84**	**0.73**	**0.46**	**0.44**	**0.45**	**0.45**	**0.41**	**0.39**	**0.88**	**0.48**	**0.64**	**0.39**
Turkish	Beginner	0.62	0.71	0.67	0.66	0.38	0.40	0.26	0.40	0.76	0.87	0.52	0.40
	Intermediate	0.95	0.99	0.28	0.30	0.42	0.37	0.46	0.40	1.08	0.41	0.89	0.15
	Advanced	0.96	1.12	0.39	0.51	0.52	0.59	0.63	0.62	1.03	0.57	1.06	0.36
	Near native	0.36	0.40	0.47	0.35	0.30	0.27	0.30	0.20	0.42	0.50	0.33	0.30
	Total	**0.94**	**0.98**	**0.54**	**0.52**	**0.51**	**0.50**	**0.52**	**0.51**	**1.02**	**0.68**	**0.90**	**0.37**
Total	Beginner	0.79	0.71	0.68	0.61	0.41	0.41	0.40	0.39	0.87	0.84	0.69	0.42
	Intermediate	0.90	0.85	0.36	0.31	0.47	0.40	0.48	0.40	0.96	0.41	0.76	0.25
	Advanced	1.00	1.04	0.46	0.46	0.55	0.52	0.56	0.51	1.06	0.55	0.91	0.36
	Near native	0.69	0.70	0.56	0.54	0.41	0.51	0.32	0.44	0.82	0.56	0.54	0.51
	Total	**0.89**	**0.86**	**0.53**	**0.49**	**0.49**	**0.48**	**0.48**	**0.46**	**0.95**	**0.60**	**0.78**	**0.39**

MPa=masculine past tense, FPa=feminine past tense, MPr=masculine present tense, FPr=feminine present tense, M_VA=masculine verbal agreement, F_VA=feminine verbal agreement, M_T=masculine tense, F_T=feminine tense, Pa_VA=past verbal agreement, Pr_VA=present verbal agreement, Pa_T=past tense, and Pr_T=present tense

Table A.10.3 SD of the Specific Target Form by L1 and Proficiency Level

L1	Proficiency Level	MPa_VA	FPa_VA	MPr_VA	FPr_VA	MPa_T	FPa_T	MPr_T	FPr_T
Indonesian	Beginner	0.98	0.90	0.29	0.31	0.99	0.81	0.16	0.29
	Intermediate	0.91	0.68	0.43	0.49	0.64	0.56	0.33	0.23
	Advanced	1.06	0.74	0.62	0.56	0.74	0.67	0.46	0.34
	Near native	0.92	1.04	0.75	0.62	0.63	0.71	0.52	0.83
	Total	**0.99**	**0.89**	**0.55**	**0.52**	**0.76**	**0.69**	**0.39**	**0.47**
Turkish	Beginner	0.84	0.75	0.93	0.89	0.41	0.68	0.43	0.45
	Intermediate	1.09	1.10	0.42	0.44	0.91	0.92	0.18	0.17
	Advanced	0.97	1.12	0.46	0.70	1.03	1.16	0.41	0.35
	Near native	0.41	0.52	0.59	0.46	0.37	0.30	0.37	0.25
	Total	**1.05**	**1.04**	**0.71**	**0.70**	**0.90**	**0.95**	**0.40**	**0.37**
Total	Beginner	0.93	0.88	0.91	0.83	0.75	0.73	0.46	0.44
	Intermediate	1.03	0.96	0.45	0.46	0.84	0.80	0.30	0.22
	Advanced	1.12	1.11	0.54	0.62	0.93	1.01	0.43	0.34
	Near native	0.84	0.88	0.68	0.54	0.59	0.59	0.45	0.63
	Total	**1.02**	**0.97**	**0.66**	**0.62**	**0.83**	**0.83**	**0.42**	**0.42**

MPa=masculine past tense, FPa=feminine past tense, MPr=masculine present tense, FPr=feminine present tense, M_VA=masculine verbal agreement, F_VA=feminine verbal agreement, M_T=masculine tense, F_T=feminine tense, Pa_VA=past verbal agreement, Pr_VA=present verbal agreement, Pa_T=past tense, and Pr_T=present tense

Appendix 11 R Program Output

- **Mixed-Design ANOVA:**

```
Call:
pbad2way(formula = gender ~ lang + level, data = data)

           p.value
lang        0.6060
level       0.2955
lang:level  0.6394

Call:
pbad2way(formula = pictense ~ lang + level, data = data)

           p.value
lang        0.7780
level       0.7596
lang:level  0.0033

Call:
pbad2way(formula = measure ~ lang + level, data = data)

           p.value
lang        0.1786
level       0.4040
lang:level  0.7763

Call:
pbad2way(formula = genderinpa ~ lang + level, data = data)

           p.value
lang        0.7963
level       0.6027
lang:level  0.6194
```

```
Call:
pbad2way(formula = gender ~ lang + level, data = data)

           p.value
lang        0.6060
level       0.2955
lang:level  0.6394

Call:
pbad2way(formula = pictense ~ lang + level, data = data)

           p.value
lang        0.7780
level       0.7596
lang:level  0.0033

Call:
pbad2way(formula = measure ~ lang + level, data = data)

           p.value
lang        0.1786
level       0.4040
lang:level  0.7763

Call:
pbad2way(formula = genderinpa ~ lang + level, data = data)

           p.value
lang        0.7963
level       0.6027
lang:level  0.6194
```

```
Call:
pbad2way(formula = genderinpr ~ lang + level, data = data)

           p.value
lang        0.1185
level       0.1836
lang:level  0.9115

Call:
pbad2way(formula = genderinva ~ lang + level, data = data)

           p.value
lang        0.6444
level       0.7162
lang:level  0.6494

Call:
pbad2way(formula = genderint ~ lang + level, data = data)

           p.value
lang        0.5409
level       0.2070
lang:level  0.7012

Call:
pbad2way(formula = pictenseinm ~ lang + level, data = data)

           p.value
lang        0.2705
level       0.6461
lang:level  0.0367
```

```
Call:
pbad2way(formula = pictenseinf ~ lang + level, data = data)

           p.value
lang        0.6845
level       0.8331
lang:level  0.0100

Call:
pbad2way(formula = pictenseinva ~ lang + level, data = data)

           p.value
lang        0.6311
level       0.7496
lang:level  0.0017

Call:
pbad2way(formula = pictenseint ~ lang + level, data = data)

           p.value
lang        0.6277
level       0.2287
lang:level  0.1519

Call:
pbad2way(formula = tenseinm ~ lang + level, data = data)

           p.value
lang        0.0451
level       0.7295
lang:level  0.0417
```

```
Call:
pbad2way(formula = tenseinf ~ lang + level, data = data)

           p.value
lang        0.3105
level       0.6544
lang:level  0.3957

Call:
pbad2way(formula = tenseinpa ~ lang + level, data = data)

           p.value
lang        0.7646
level       0.7446
lang:level  0.2821

Call:
pbad2way(formula = tenseinpr ~ lang + level, data = data)

           p.value
lang        0.2070
level       0.6311
lang:level  0.1553
```

- **The Two-Way ANOVA Design**

```
Call:
pbad2way(formula = mpa_va ~ lang + level, data = data)

           p.value
lang        0.4391
level       0.0785
lang:level  0.0067

Call:
pbad2way(formula = fpa_va ~ lang + level, data = data)

           p.value
lang        0.0735
level       0.0568
lang:level  0.0067

Call:
pbad2way(formula = mpr_va ~ lang + level, data = data)

           p.value
lang        0.0050
level       0.4574
lang:level  0.5543

Call:
pbad2way(formula = fpr_va ~ lang + level, data = data)

           p.value
lang        0.1285
level       0.2855
lang:level  0.2287
```

```
Call:
pbad2way(formula = mpa_t ~ lang + level, data = data)

           p.value
lang        0.1853
level       0.2771
lang:level  0.1569

Call:
pbad2way(formula = fpa_t ~ lang + level, data = data)

           p.value
lang        0.3055
level       0.0167
lang:level  0.1886

Call:
pbad2way(formula = mpr_t ~ lang + level, data = data)

           p.value
lang        0.0000
level       0.0301
lang:level  0.3005

Call:
pbad2way(formula = fpr_t ~ lang + level, data = data)

           p.value
lang        0.3422
level       0.5142
lang:level  0.3606
```

Appendix 12 Normality Check (SPSS)

- **Applied to the Product of Production by Number of Correct Tokens:**

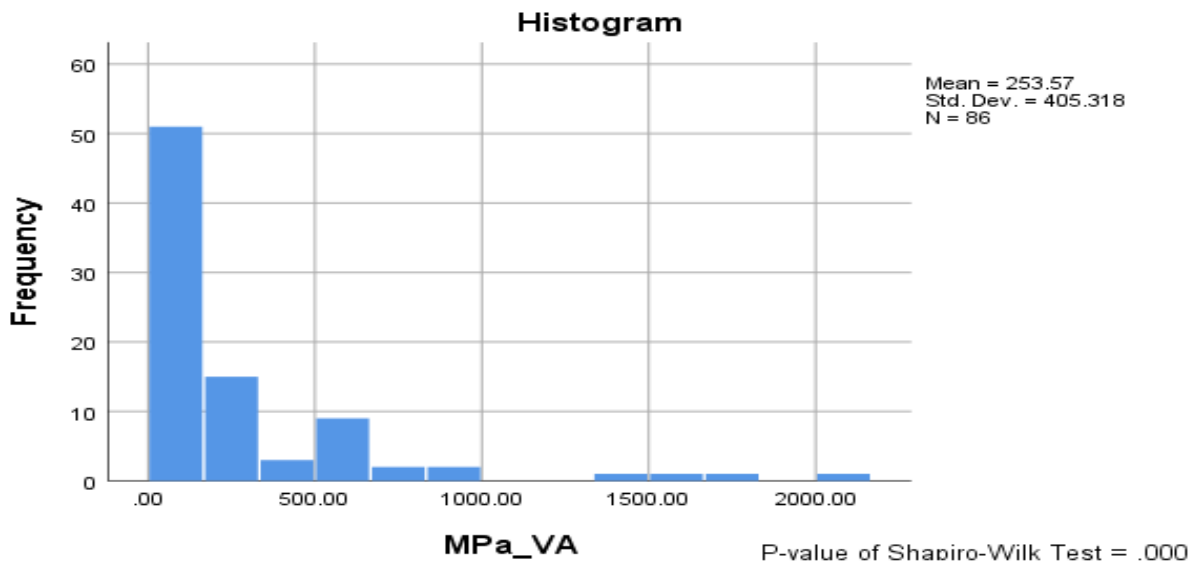


Figure A.12.1 MPa_VA=masculine verbal agreement in the past

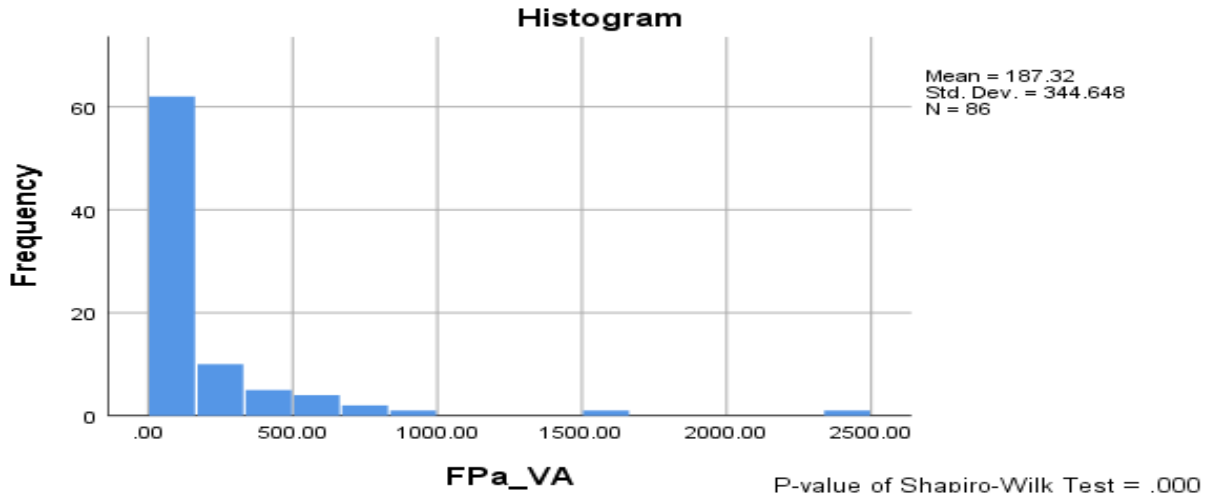


Figure A.12.2 FPa_VA=feminine verbal agreement in the past

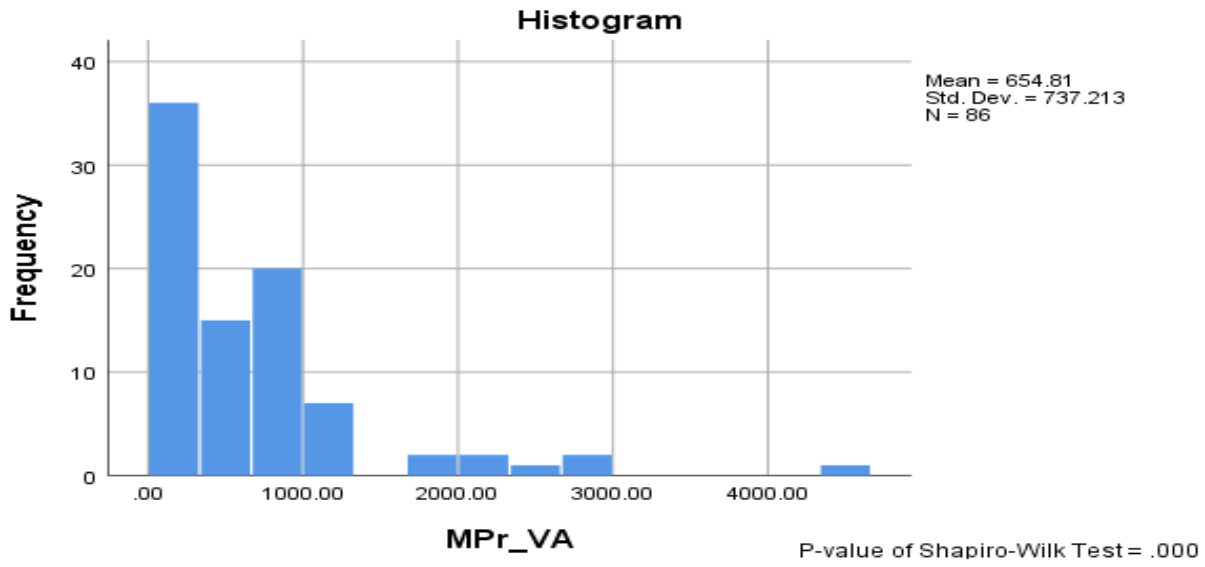


Figure A.12.3 MPr_VA=masculine verbal agreement in the present

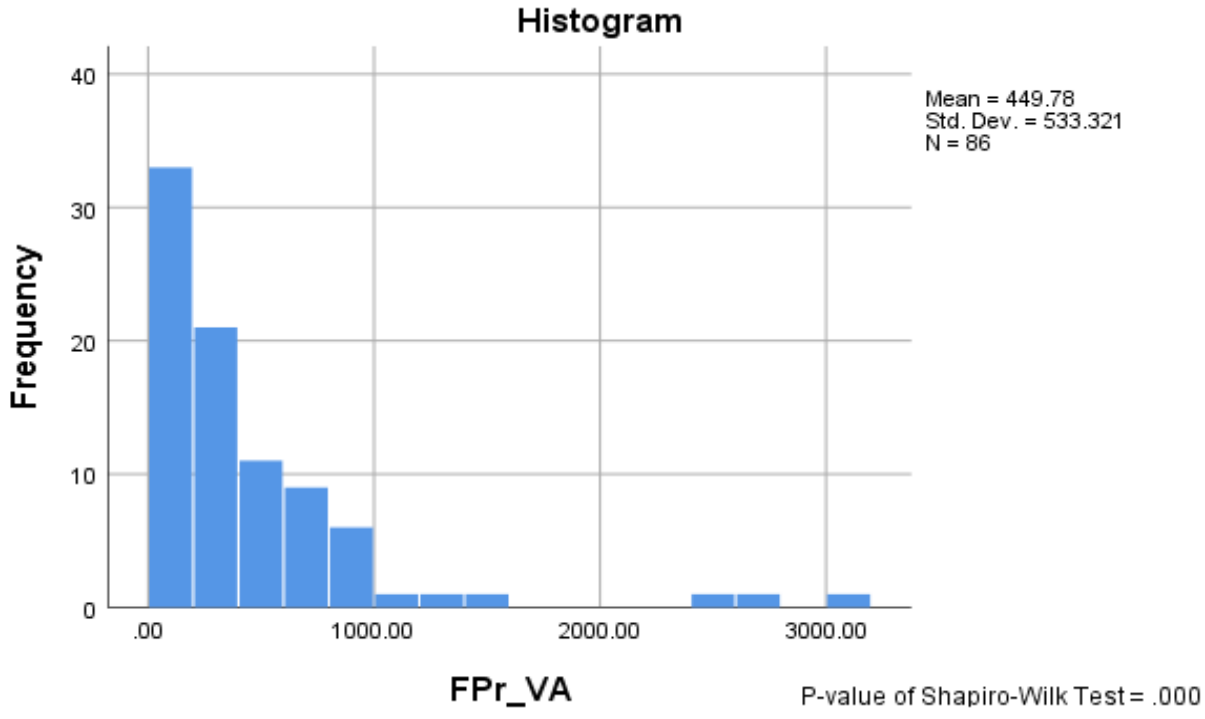


Figure A.12.4 FPr_VA=feminine verbal agreement in the present

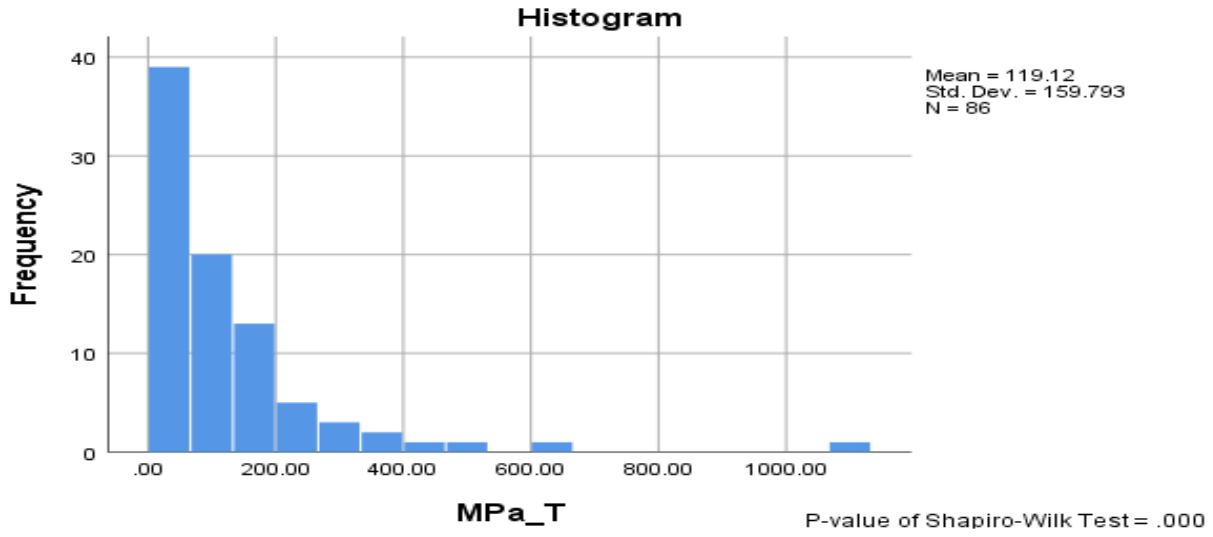


Figure A.12.5 MPa_T=masculine past tense

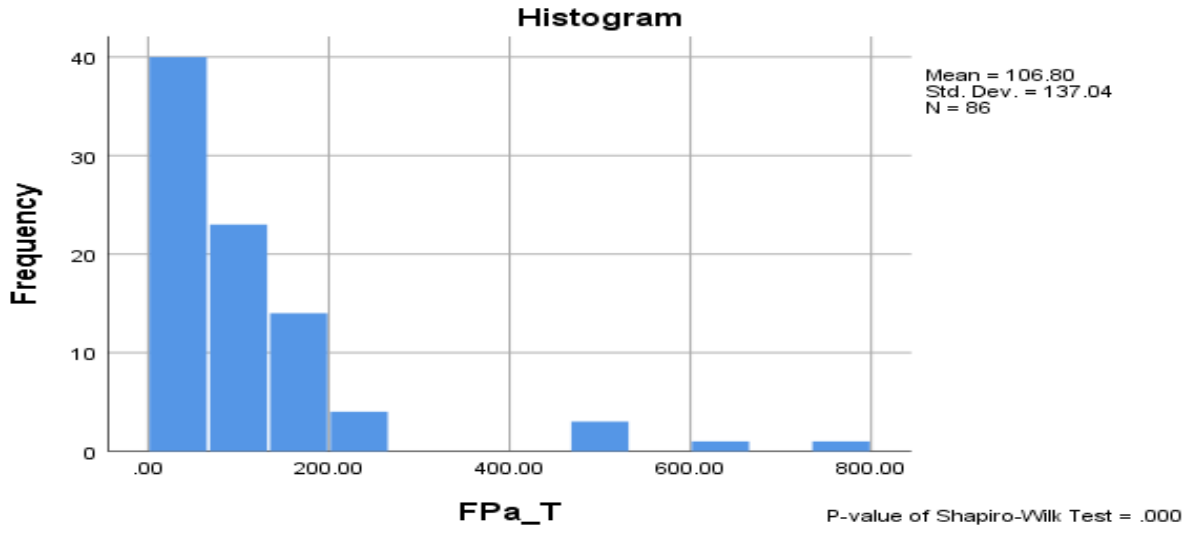


Figure A.12.6 FPa_T=feminine past tense

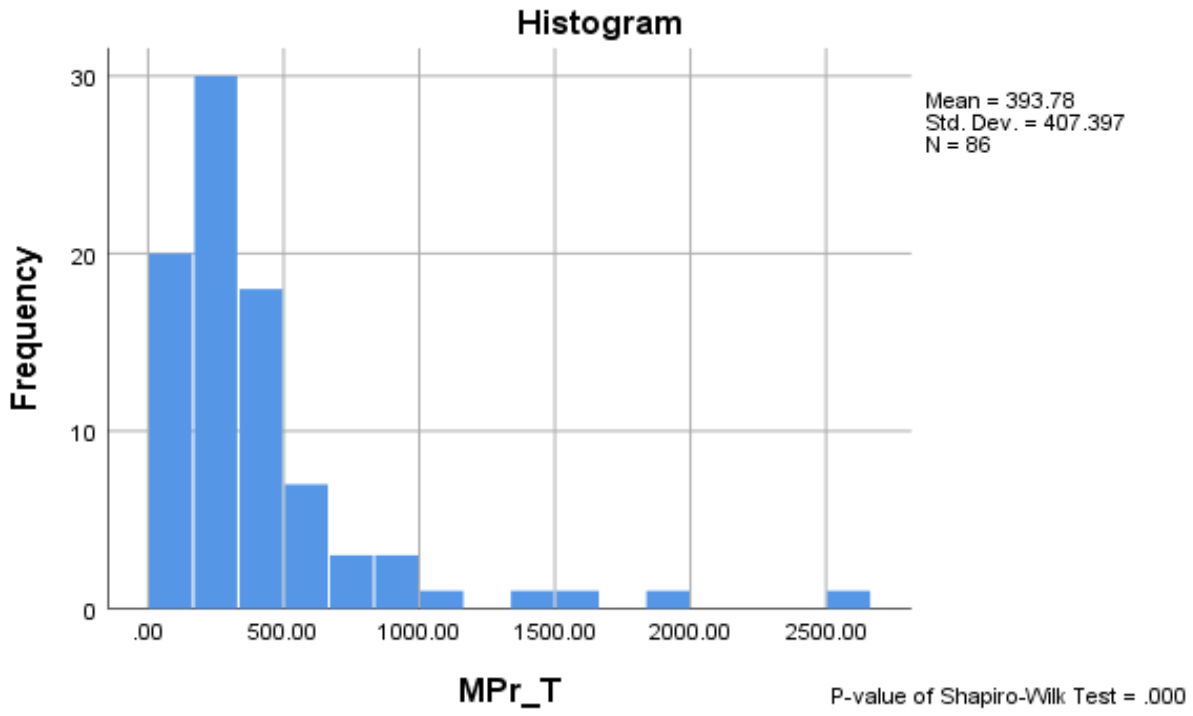


Figure A.12.7 MPr_T=masculine present tense

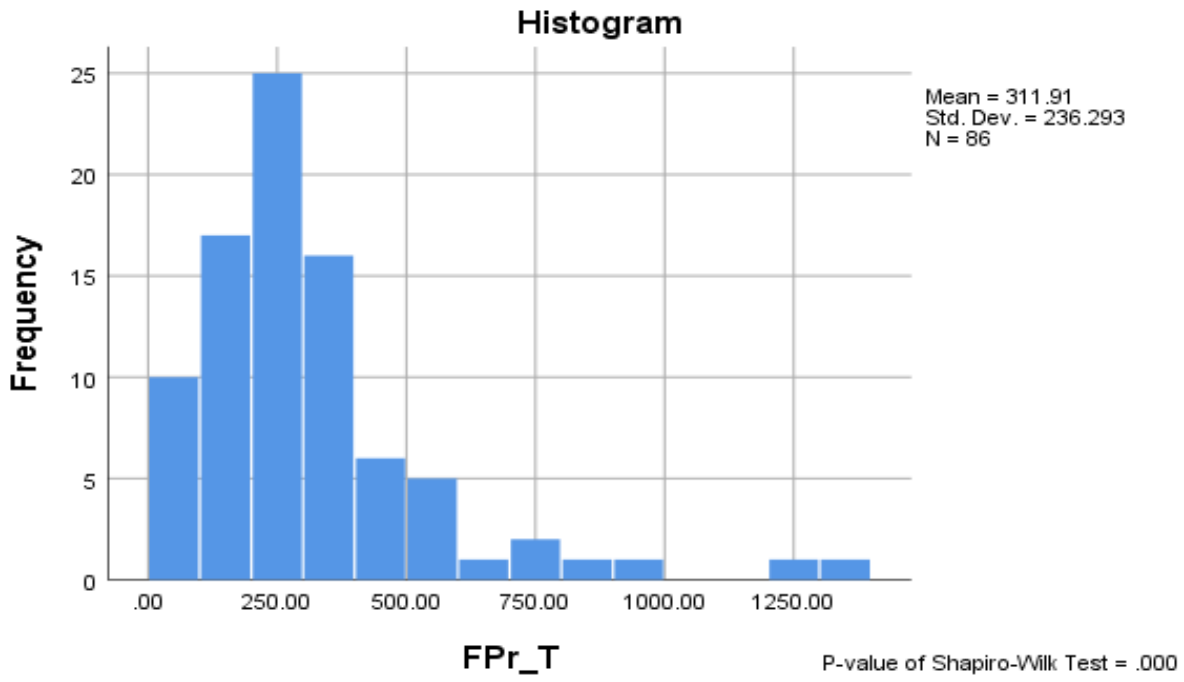


Figure A.12.8 FPr_T=feminine present tense

- **Applied to the Product of Production by Number of Correct Tokens:**

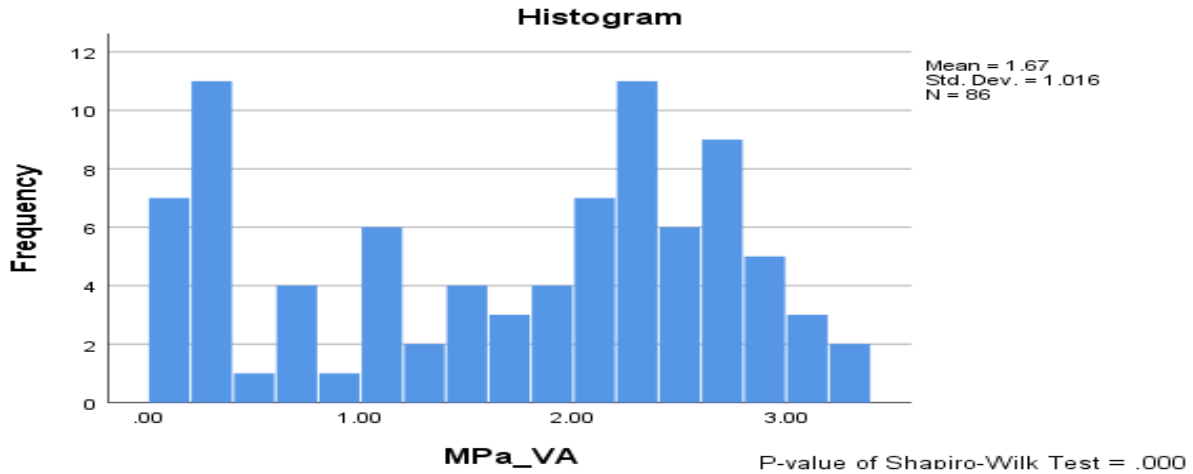


Figure A.12.9 MPa_VA=masculine verbal agreement in the past

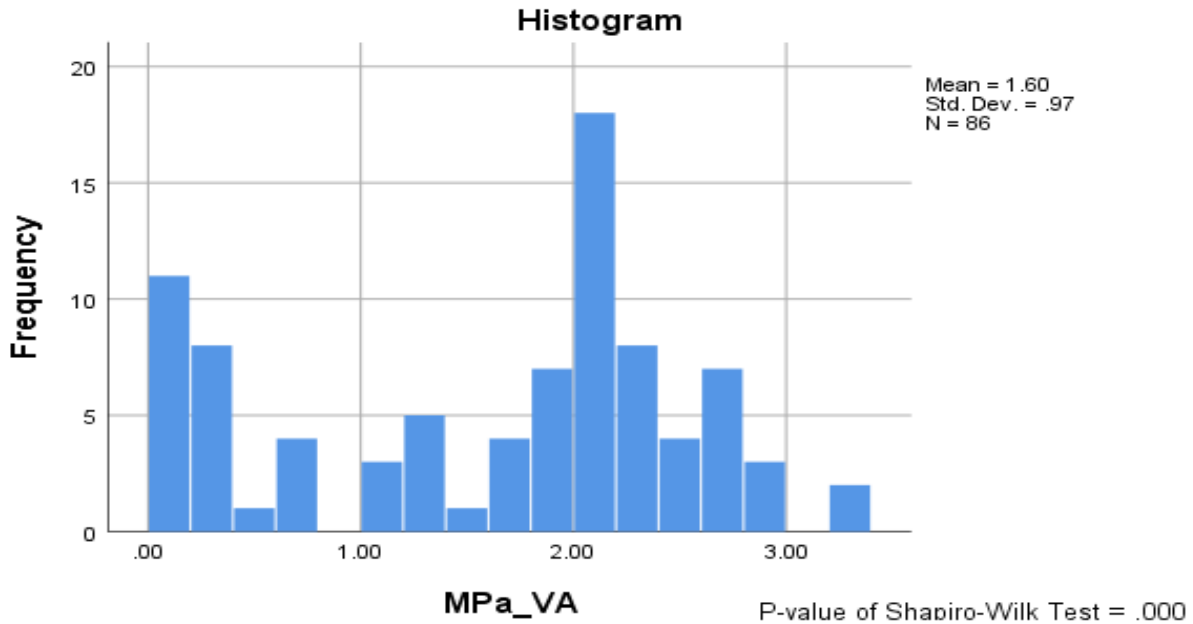
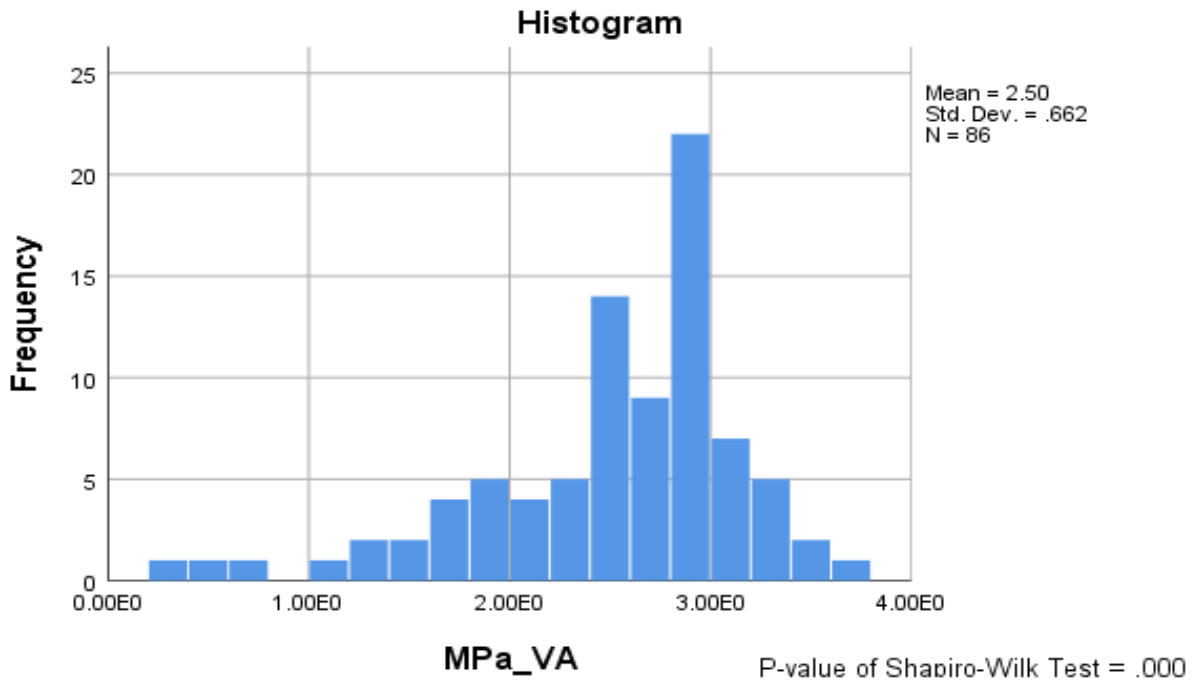


Figure A.12.10 MPa_VA=masculine verbal agreement in the past



Appendix Figure A.12.11 MPa_VA=masculine verbal agreement in the past

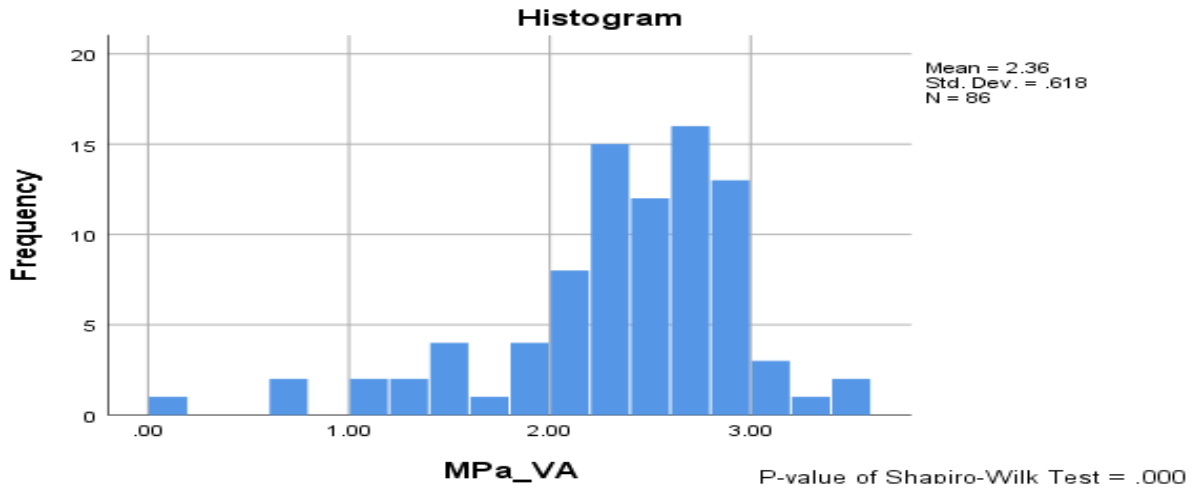


Figure A.12.12 MPa_VA=masculine verbal agreement in the past

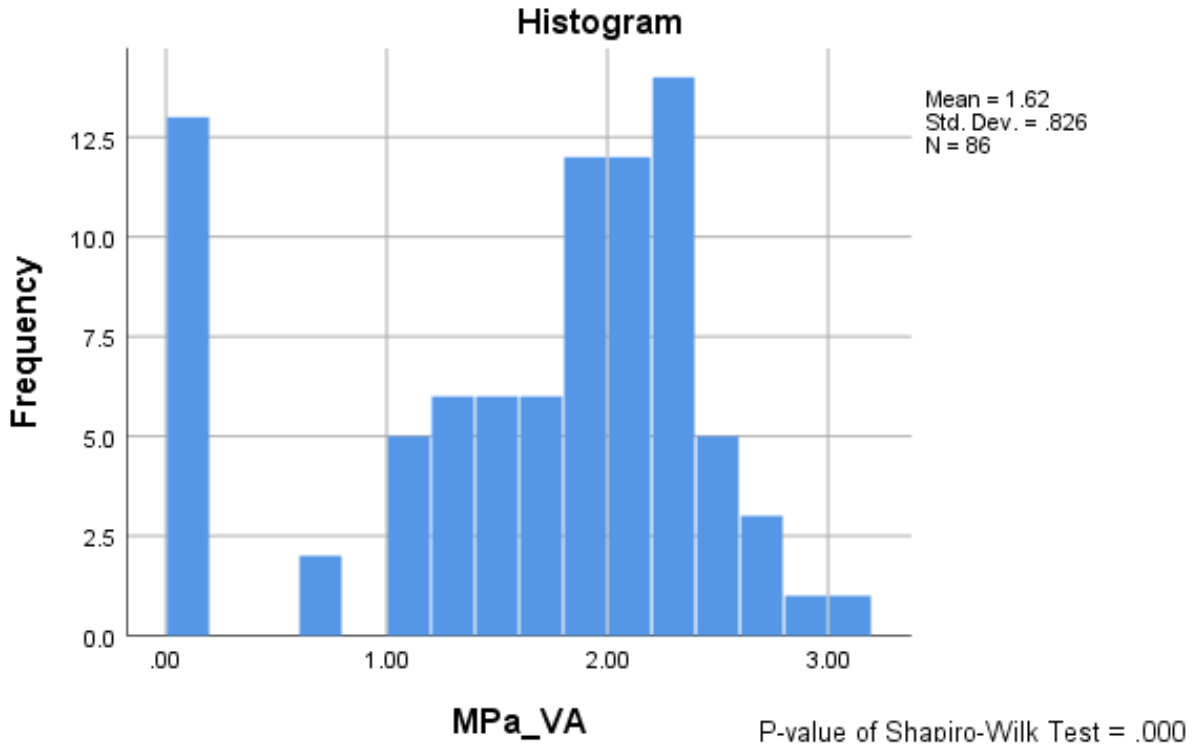


Figure A.12.13 MPa_VA=masculine verbal agreement in the past

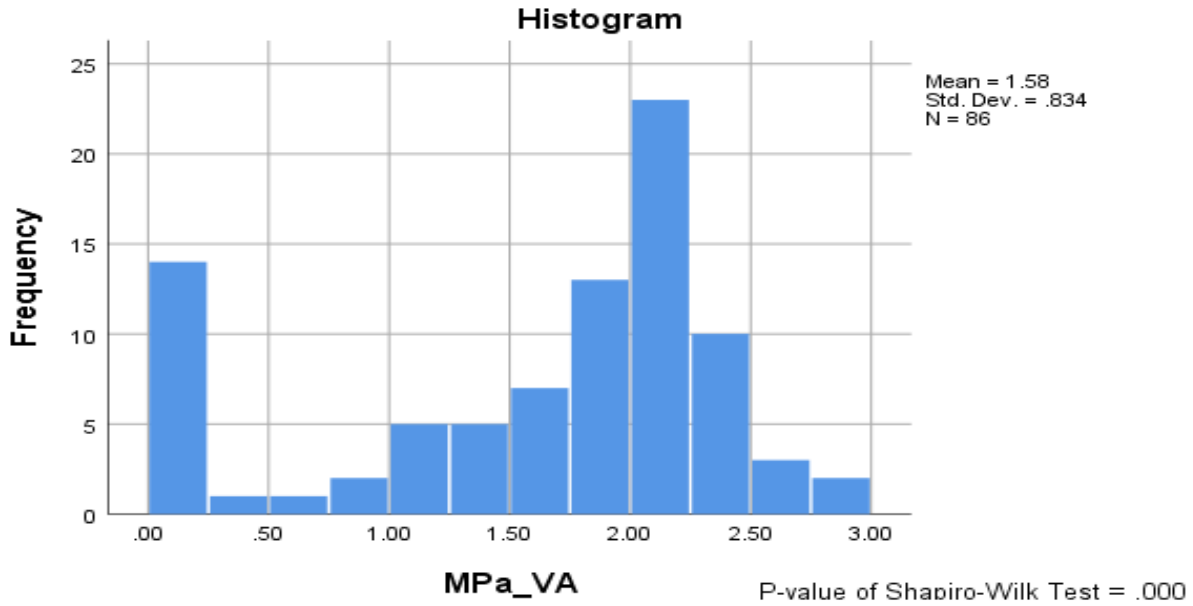


Figure A.12.14 MPa_VA=masculine verbal agreement in the past

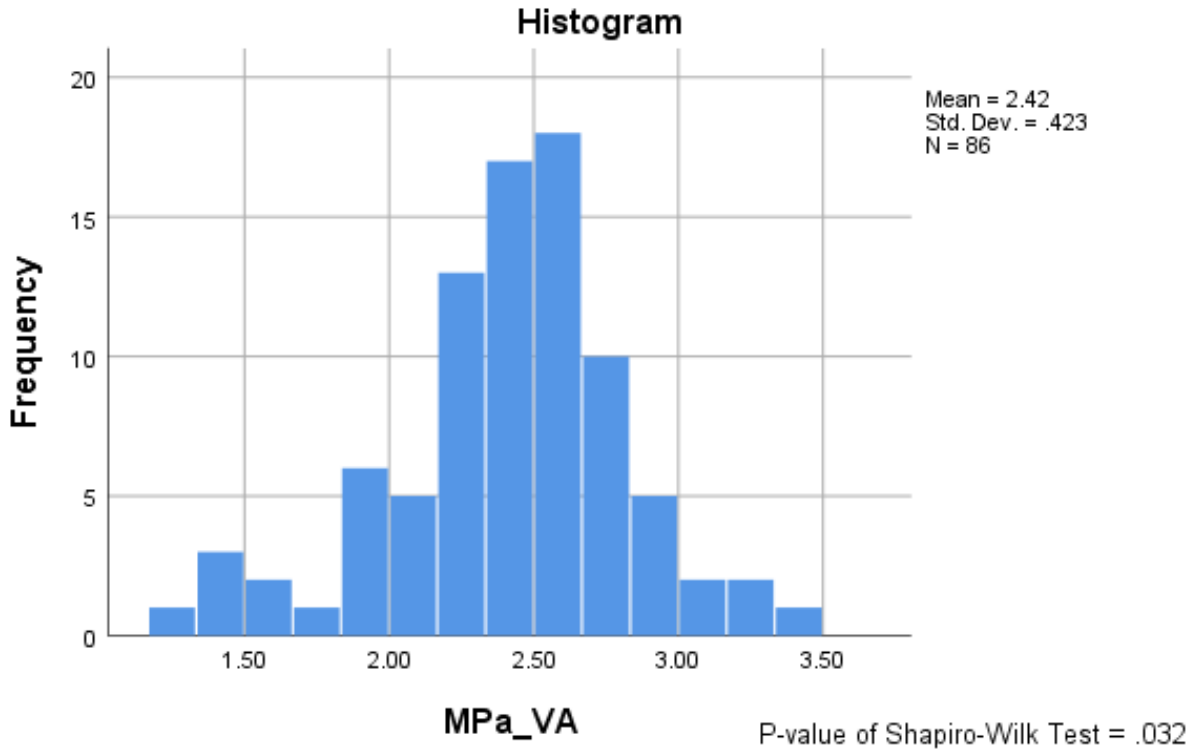


Figure A.12.15 MPa_VA=masculine verbal agreement in the past

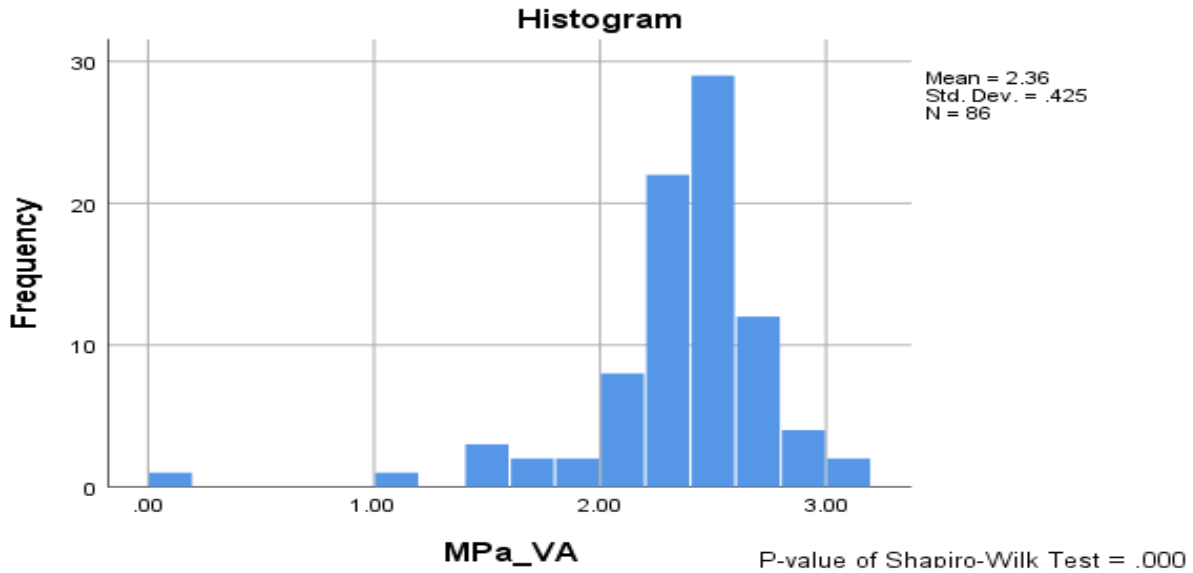


Figure A.12.16 MPa_VA=masculine verbal agreement in the past

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