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Cross-linguistic Influence in Third Language Acquisition

The Effects of L1 Turkish and L2 English on Possessive Pronouns in L3 Norwegian

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Abstract

The present study examins how adults who speak Turkish as their first language and English as their second language acquire possessive pronouns in Norwegian as their third language, focusing on cross-linguistic influence. The study uses a combination of methods including a language history questionnaire, Norwegian and English proficiency tests, and an acceptability judgement task, while testing the grammatical accuracy of possessive agreement in the local and the non-local domains in Ln Norwegian. Predictions were based on six primary models of third language acquisition, each of which varies in its assumptions about which language is the source of cross-linguistic influence —whether it is from the first language, the second language, or both, bearing in mind that while Turkish does not have possessive agreement, it has suffixal elements that overlap phonologically with the local possessive forms in Norwegian. The Generalised Local Bias Hypothesis (GLBH; Pozzan and Antón-Méndez, 2016) is also taken into account, which suggests that there is a universal bias towards local possessive agreement.

Everything considered, unfortunately it is not possible to determine whether there is cross-linguistic influence from the second language, English, given that English proficiency is found to correlate significantly with Norwegian proficiency. The findings are in line with the GLBH, showing that a bias for local agreement is a general phenomenon that should be evident in participants, which their improved performance in the local domain draws this conclusion. Another interpretation of the learners' responses in acceptability judgement task sentences, is a facilitative effect of cross-linguistic influence of the surface similarity with their first language, Turkish, however this cannot be disambiguated between these two explanations.

Key words: cross-linguistic influence, gender agreement, language, multilingualism, possessive pronouns, third language acquisition

Table of Contents

List of Tables

List of Figures

List of Abbreviations

ACC	Accusative
AJT	Acceptability Judgement Task
AOA	Age of Acquisition
BL	Base Line
CEM	Cumulative Enhancement Model
CLI	Cross-linguistic Influence
DET	Determiner
ENG	English
F	Feminine
GLBH	Generalised Local Bias Hypothesis
GV	Gender Violation
L1	First Language
L1H	First Language Transfer Hypothesis
L2	Second Language
L2A	Second Language Acquisition
L3	Third Language
L3A	Third Language Acquisition
LPM	Linguistic Proximity Model
LV	Locality Violation
M	Masculine
MM	Mismatch
N	Neuter
NOR	Norwegian
NP	Noun Phrase
OPT	Oxford Placement Test
POSS	Possessive
RQ	Research Question
RT	Reaction Time
SPR	Self-paced Reading
TL	Target Language
TPM	Typological Primacy Model
TUR	Turkish

UG Universal Grammar

1 Introduction

Cross-linguistic influence (CLI) refers to how one language's structure, vocabulary, or sound patterns affect another language within the mind or brain. It plays a crucial role in shaping language processing and comprehension in individuals who are bilingual or multilingual. This phenomenon can be observed in the interaction between a native language (L1) and a second language (L2) or between an L1 and an L2 or a third language (L3). This thesis investigates, as Turkish native speakers become multilinguals with the acquisition of English, and as they later on acquire Norwegian as an L3, whether the previously acquired languages influence the acquisition of the target language (TL). In the case of Turkish L1, English L2 and Norwegian L3 speakers, the focus is on the comprehension and judgement of possessive agreement in Norwegian.

Turkish belongs to a distinct language family than English and Norwegian. The three languages exhibit notable differences in their linguistic structures, including possessive agreement mechanisms. Turkish, a Turkic language, has a suffix-based system to convey possessive relationships, and does not agree with possessor or possessee. While both English and Norwegian rely on pronouns, determiners and inflections, English, belonging to a Germanic language family, agrees with the possessor, and Norwegian, a North Germanic language, agrees with the possessor or the possessee. The coexistence of these distinct linguistic features in multilingual individuals prompts an exploration into how cross-linguistic influence impacts the mental processes involved in comprehending and judging possessive agreements.

The structure of the native language (L1) can be carried over into the L2, and there is also the question of whether the L1, the L2, or both of their language structures, might influence the acquisition of the L3. When Turkish speakers undertake the learning of Norwegian, a new language, they can in theory draw upon two main reservoirs of pre-existing knowledge: the grammar of their first language and the grammar of any other language they have learned subsequent to their mother tongue. Considering that English is the most commonly taught language universally, it is essential to understand the possible impact of English as a lingua franca on the learning of additional languages. Turkish native speakers typically start learning English as an L2 from the age of seven. Nevertheless, there is a considerable variation in both the skill level and frequency of English usage among Turkish individuals. The dynamics of cross-linguistic influence (CLI) in this context involves the cognitive mechanisms that Turkish L1 speakers employ when navigating possessive agreements in Norwegian, their L3. This

exploration may unveil transfer effects, where linguistic elements from the first language influence the interpretation and production of possessive constructions in the third language.

1.1 Aim and Research Questions

The aim of this study is to add to the current discussions in third language acquisition (L3A) research about the origins of CLI. This will be done by examining how knowledge of English as a second language (L2) influences Turkish native speakers as they learn Norwegian as their third language (L3). The main goal of the present study is to find answers to following questions: Does cross-linguistic influence come only from English (L2) or is there some effect of overlapping forms when it comes to Turkish (L1)? If there will be CLI from either L2 English, L1 Turkish, or both, how do proficiency levels in English and Norwegian influence the study's objectives?

To answer these questions, this study integrates an experimental phase. The experiment in question involves a Norwegian Acceptability Judgement Task (AJT) and proficiency assessments in both Norwegian and English. Additionally, it includes a language background questionnaire covering factors like duration of exposure, frequency of use, and instructional background. Participants encompass individuals with Turkish as their first language (L1), English as their second language (L2), and Norwegian as their third language (L3). The study included 48 Turkish native speakers residing in Norway, aged 18 or above. None of them were early bilinguals; they began learning English after the age of 5, and Norwegian after the age of 16. Additionally, their proficiencies in Norwegian listening, writing and speaking were at least at the A2 level and reading was at least at the B1 level.

2 Theoretical Background

In this chapter, I provide the theoretical framework that underpins the present study. It commences with the primary topic, cross-linguistic influence (CLI), in section 2.1. Next, in section 2.2, the concept of multilingualism is defined. Subsection 2.3 then introduces six prominent models pertaining to CLI in the acquisition of third languages.

2.1 Cross-linguistic Influence

The connection between language and cognition in individuals proficient in multiple languages has frequently centered on universal impacts shared among multilinguals from diverse linguistic backgrounds. These include the beneficial effects of multilingualism across different aspects of cognitive growth. However, there are also language-specific effects in the relationship between language and cognition in multilinguals that emerge in the form of cross-linguistic influence (Jarvis, 2011).

The phrase cross-linguistic influence (CLI) encompasses transferable effects as instances of one language influencing another in real-time during comprehension and production. CLI denotes how an individual's existing language knowledge impacts their acquisition of a new language. Within second language acquisition (L2A) and third language acquisition (L3A), CLI can cause transfer. This transfer refers to a recurring and organised pattern of effects evident in the production of language in multilingual contexts. In essence, even if the transfer is inconvenient or completely wrong, it can appear as an influence of one language on the acquisition of another. When familiarity with one language aids in learning and enhances proficiency in another language, CLI effects are beneficial in one's mind. Conversely, when aspects of previously learned language(s) obstruct the acquisition of the new language, CLI can result in errors. These can be described as either facilitative or non-facilitative. Facilitative CLI is considered positive, while non-facilitative CLI is negative.

2.2 Multilingualism

A bilingual individual is someone who has knowledge of two languages, while a multilingual person is someone who knows multiple languages. In other words, to avoid the complications between these two definitions, multilingualism can be approached as a term that entailing the ability to converse in three or more languages. It pertains to the concept of clearly defining the quantity of languages involved. There exists a distinction in the learning processes between acquiring an L2 and an L3, and this variance can impact the acquisition of a subsequent language. Different from L2A, L3A involves the presence of at least two possible sources for transfer, thus enabling cross-linguistic influence from more than a single language. For this study, the impact of both the first language (L1), Turkish, and the second language (L2), English, on the acquisition of a third language (L3), Norwegian, is important within language acquisition. The participants may possess varying proficiencies in their L2 and L3. Likewise, some may excel in all of the three languages they know, while others have a primary language.

In cross-linguistic influence in third language acquisition, it is important to ascertain the learners' prior language experience, as their earlier acquired languages, in this case Turkish and English, might influence L3 acquisition in diverse ways, depending on factors such as language dominance and usage. Exploring the process of L3A involves considering more than L2A. It is not only transferring knowledge from the L1 to the L2, because now, there is a possible two transfer alternatives for L3. Nonetheless, it is not very likely for a multilingual speaker to employ each language identically. Furthermore, multilingualism is a fluid condition that changes with the individual, leading to fluctuations in language proficiency for various reasons. After the age of 16, when the individuals who participated in the current study, began learning Norwegian, a new language, as their L3, they would typically possess one or more linguistic systems in their minds. But did they utilize these frameworks simultaneously and if so, in what manner?

2.3 Existing Models on Third Language Acquisition

Rothman et al. (2019) outlined the six existing theories concerning how morphosyntactic patterns are transferred during third language acquisition (L3A). One possibility is the "L1 Factor" Lozano (2003), suggests that transfer primarily originates from the learner's first language (L1). This implies that the L1 could exert a significant influence on the L3, acting as the predominant source of transfer. Essentially, the suggestion is that the cognitive prominence of the L1 shapes the selection of facilitative and non-facilitative transfer, granting it a preferred role in the process.

The "L2 Status Factor" hypothesis asserts that during L3A, L2 holds a special importance as the main source of influence. This idea is rooted in the concept proposed by Ullman (2001), which distinguishes between declarative and procedural memory systems in language learning. According to this model, L1 grammar is stored in procedural memory, while lexicons and grammar acquired after puberty are stored in declarative memory. Bardel and Falk (2012) used this distinction to argue that transfer of language elements is more likely to occur between the grammar of the L3 and other non-native languages than between the L1 and the L3. The formulation of the L2 Status Factor, as presented by Bardel and Falk (2007), has shown strong predictive ability, making it a robust hypothesis for testing. However, evidence of transfer from the L1, especially if consistently observed in cases not anticipated by updates to the model, challenges the explanatory power of this hypothesis, or at least its general applicability.

In a manner different from the previously mentioned two wholesale models, the "Typological Primacy Model" (TPM; Rothman, 2010, 2011, 2013, 2015) defends that understanding the developmental path and differences in L3A, compared to L2A, requires considering the initial grammatical starting point in each case. TPM argues that both L1 and L2 can influence L3A, with the choice between them being highly predictable in the early stages of L3 development. It suggests that either the L1 or the L2 can serve as sources of transfer for L3A. However, TPM uniquely asserts that only one language, not both, is chosen as the primary source of transfer in all aspects of L3 morphosyntactic representation. Similarly to how the L1 acts as a filter for L2A based on wholesale transfer theories, the choice of language for transfer in L3A depends on the typologically selected grammar. This can be considered a filter akin to Universal Grammar (UG) in the L3A context. For instance, if the initial transfer is not facilitative and L3 restructuring becomes necessary, instead of learning L3 entirely anew,

transferring a property from another language occurs. The emphasis on initial and representation in TPM's assertions shoud also be highlighted. While TPM suggests a single, primary source (either L1 or L2) for initial transfer, it acknowledges the possibility of surface-level influence from the other language early on and throughout the acquisition process, as well as the potential for secondary transfer from the non-selected language at later stages.

The "Cumulative Enhancement Model" (CEM; Flynn et al., 2004) contends that L3A can be influenced by the L1, the L2, or both, but only if this influence is facilitative, in order to prevent redundancy. It suggests that transfer from any language source is expected, provided that such transfer aids rather than hinders facilitation. An example study for CEM, by Flynn, Foley, and Vinnitskaya (2004) involved participants who spoke L1 Kazakh, L2 Russian, and L3 English. The participants were divided into two groups: adult learners of English (varied proficiency) and child learners of English. The study focused on the use of relative clauses. Participants imitated three types of relative clauses in different sentence positions (subject versus object head and gap positions). Russian and English, both head-initial languages, showed similar behaviour, while Kazakh, a head-final language, differed. The results indicated that both groups produced English restrictive relative clauses similar to the target language (TL), showing a transfer selection in multilingualism occurred, leading to maximal facilitation.

The "Linguistic Proximity Model" (LPM; Westergaard et al., 2017) suggests that transfer selection is not limited to just L1 or L2, as CEM. Instead, it proposes that transfer might not have a single source (either L1 or L2) for all aspects initially or throughout development. The important difference between the CEM and the LPM is that according to this model, CLI can be both facilitative and non-facilitative. The transfer is not wholesale, but occurs domain by domain as required during development. Regarding structural similarity, the LPM determines which language (L1, L2, or both) is chosen to influence the process of L3A. It acknowledges the possibility of both languages exerting influence simultaneously, particularly when their structural similarities are relevant. This aligns with its rejection of complete representational transfer at the outset. In essence, the LPM argues that transfer in L3A is strongly conditioned (though not necessarily restrictive), occurring on a property-by-property basis when necessary or pertinent along the developmental continuum, and warns that misinterpretation can impede rather than facilitate learning.

The final approach to L3 acquisiton, " The Scalpel Model" by Slabakova (2017) presents a distinct perspective on L3A compared to other existing models. The core assertion of the Scalpel Model is that multiple factors influence L3 transfer, leading to a property-by-property acquisition process. Essentially, it suggests that individuals proficient in multiple languages are equipped to approach L3A with precision. While utilizing either the L1 or the L2 when advantageous can enhance precision, empirical evidence from L3 transfer studies reveals instances where this precision is lacking. Slabakova acknowledges this reality, attributing instances of imprecise transfer to factors such as processing complexity and frequency considerations. The abundance of studies demonstrating transfer from previous linguistic knowledge, even when it results in less precise outcomes, is substantial in the literature. This model on L3A suggests that the grammatical options from both the L1 and the L2 work together precisely, like a scalpel, to apply the beneficial aspects of L1 or L2 parameter values.

In summary, there are six distinct models, each emphasizing different origins for CLI in L3A. Some propose that CLI primarily stems from the L1, and some argue for the L2, while others contend it could be from either L1, L2, or both. Moreover, there are those who suggest it arises from either L1 or L2, depending on which is more similar to L3. In the following chapter, I will discuss the possessive structures of the three languages focused on in this paper.

3 Gender Agreement in Possessives

This chapter provides an overview of how possessive agreement aligns in Norwegian, English, and Turkish.

3.1 The Structure of Possessives in the L3: Norwegian

The two written standards of Norwegian, bokmål and nynorsk, both have a three-gender system with distinctions between masculine, feminine, and neuter. The bokmål standard also allows a two-gender system consisting of just common and neuter gender. Although the feminine gender is disappearing on indefinite articles and predominal possessives in several Norwegian dialects, it is much more robust on the definite suffix and postnominal possessives[1] (Rodina & Westergaard, 2015; 2021). Thus, learners are likely to encounter these feminine forms while acquiring Norwegian. In this study, participants are not required to produce gender forms themselves as it is a judgment study. They are provided with the noun form in a sentence, and the relevant form will always be a kinship term like 'sister'or 'brother', referring to a female or a male relative. For possessee agreement, the participants only need to realise that the kinship term is feminine and know which form of the possessive pronoun is the correct form to agree with it. Therefore, it can be assumed that the Turkish learners of Norwegian in the present study will be able to recognise both the feminine and masculine kinship terms as such.

While it is straightforward to determine the gender of nouns referring to people, like "a man" being masculine and "a woman" being feminine, predicting the gender of inanimate objects, such as "a car" or "a necklace" is challenging in a language like Norwegian, and the gender basically has to be memorised. In terms of possessive pronoun agreement with the possessor, Norwegian exhibits remarkable differences compared to other languages. First, an unusual characteristic of Norwegian possessives is that they can be pre- or postnominal (cf. (1a)

[1] For this reason, the definite suffix has been argued to be a declension class marker rather than a gender marker by some scholars, see e.g. Rodina & Westergaard (2021). See also Svenonius (2017) for an explanation for the robustness of the feminine form on postnominal possessives.

versus (1b)). However, the current thesis only considers postnominal possessives, as these are more frequent and the default, non-contrastive alternative (1b-2a).

Another relatively uncommon property of the Norwegian possessive agreement system, is that has two different types of possessive pronouns:

1. Non-local/non-reflexive: *hans* masculine (M), *hennes* feminine (F)
2. Local/reflexive: *si* feminine (F), *sin* masculine (M), and *sitt* neutral (N)

The non-reflective possessive pronouns *hans* (his), and *hennes* (her) are used to indicate ownership or association with a particular person or thing outside the clause (henceforth: the non-local domain). These pronouns, when combined with a noun, create possessive expressions. The forms *hans* (his) and *hennes* (hers), behave like their English translation equivalent when it comes to possessive agreement and agree with the possessor.

The possessive pronoun *hennes* (hers) is used to indicate possession by a female. As illustrated in (1), the gender of the possessee (neuter) does not influence the form of the possessor.

(1)	a. *hennes*	*smykk-et*	b. *smykk-et*	*hennes*
	her	necklace-DET**.N**	necklace-DET**.N**	her
	‘her necklace’		‘her necklace’	

The possessive pronoun *hans* (his) is used to indicate possession by a male. Like *hennes* (her), it does not agree in gender with the possessed noun, but with the possessor. This is illustrated by a masculine possessor in (2a) and a neuter possessee in (2b).

(2)	a. *bil-en*	*hans*	b. *smykk-et*	*hans*
	car-DET**.M**	his	necklace-DET**.N**	his
	‘his car’		‘his necklace’	

The reflexive forms *si/sin/sitt* are used when the possessor is the subject (henceforth: when it is in the local domain). Essentially, *si/sin/sitt* refer to a possessor that is the subject in the clause where the possessive occurs, whereas the forms *hans/hennes* denote a possessor that is outside in the sentence. Similar to Romance languages (like Italian, Spanish), these

possessive pronouns agree with the gender of the possessed noun. These types of possessive pronouns Norwegian also show number agreement with the possessee, *sine* is the plural form in Norwegian.

In example (3a-b), the possessive pronoun refers back to the local subject (the possessor) and matches with what is possessed (possessee), meaning in (3a) *mora* (mother) agrees with *si*, and in (3b) *faren* (father) agrees with *sin*. In (3c-d) the possessive pronoun refers back to a referent outside the clause and matches with the possessor.

(3) a. *John* *kysset* *mora* ***si***.
John kissed mother-DET**.F** POSS**.F**
'John kissed his (own) mother.'

b. *John* *kysset* *faren* ***sin.***
John kissed father-DET**.M** POSS**.M**
'John kissed his (own) father.'

c. *John* *kysset* *mora* ***hans.***
John kissed mother-DET**.F** POSS**.M**
'John kissed some other male person's mother.'

d. *John* *kysset* *faren* ***hennes.***
John kissed father-DET**.M** POSS**.F**
'John kissed some other female person's father.'

3.2 The Structure of Possessives in the L2: English

In English, the matching between possessive forms and their owners primarily reflects natural gender, with only third person singular forms demonstrating morphological agreement, such as "his" for masculine and "her" for feminine. While characteristics related to what is possessed remain unspecified.

English has gender agreement with the possessor, similar to *hans/hennes* in Norwegian, and the possessor may be the subject (Mary in (4) and John in (5) or some other female (4) or male (5)).

(4) a. Mary kissed **her.F** mother.

b. Mary kissed **her.F** father.

(5) a. John kissed **his.M** mother.

b. John kissed **his.M** father.

3.3 The Structure of Possessives in the L1: Turkish

In Turkish, possessive pronouns do not change based on the gender of the possessor, nor based on the gender of the possessee. For third person singular, the possessive pronoun *onun* serves a dual purpose to indicate possession for both feminine "her" and masculine "his" entities. This characteristic adds simplicity to Turkish possessive structures, as the same form is used regardless of the gender of the possessor.

When expressing possession for a female or a male entity, Turkish speakers use *onun* in combination with the possessed noun. This means there is no gender agreement in Turkish, and the language uses suffixes to indicate possession and verb conjugations to refer to the subject, which often makes the use of pronouns unnecessary. This feature is a result of Turkish being an agglutinative language, which forms words and conveys grammatical relations through the addition of suffixes. In examples (6a-b), the suffixes *-si* and *-sı* already clarify that the noun belongs to the third person singular, so the pronoun *onun* (her/his) is often omitted as it is redundant. This linguistic system allows Turkish speakers to frequently omit pronouns, as the necessary information about the subject or possessor is embedded in the suffixes attached to nouns and verbs.

(6) a. *(onun)* *araba-sı*
(POSS) car-POSS
'her/his car'

b. *(onun)* *kolye-si*
(POSS) necklace-POSS
'her/his necklace'

Futhermore, any reason for a syntactic changes such as the suffix at the end of the word is determined by the phonological shape of the possessed noun. Possessives are suffixal elements that take different forms depending on Turkish vowel harmony rules. Turkish 3rd person singular possessive suffixes are: *-ı*, *-i*, *-u*, *-ü*, *-sı*, *-si*, *-su*, *-sü*. In all these cases, the possessive pronoun remains constant, and there is no gender agreement with neither the possessor nor the possessee.

Turkish vowel harmony is a phonological phenomenon that affects the vowels within a word to maintain a harmonic pattern. In Turkish, much of the meaning is constructed by attaching suffixes to words. However, these suffixes come in various forms, and the appropriate one is selected by matching it with the final vowel of the stem.

There are two main types of vowel harmony in Turkish: a-type (back vowel harmony) and e-type (front vowel harmony). All vowels in a word must be either front vowels or back vowels. Additionally, the principles of vowel harmony in Turkish aim to minimize oral movement when forming words. In other words, if a word starts with a certain mouth position, it should maintain that position throughout, and suffixes should align with the initial roundedness or backness of the word. This adds a systematic and harmonious quality to the language, making it distinctive and phonologically regular.

Table 1. Turkish vowel harmony adheres to rules governed by three distinct variables.

	Unrounded		Rounded	
	Open	Closed	Open	Closed
Back	*a*	*ı*	*o*	*u*
Front	*e*	*i*	*ö*	*ü*

In examples (7a) and (7b), the possessor ‘Mary’ is feminine in both, but the possessee is feminine in (7a) and masculine in (7b), and the possessive suffixes are also different in the two cases. However, to understand that this is not related to possessors or possessees being feminine or masculine, we can compare these two examples to (7c) and (7d), in which only shows difference in the possessor being masculine, because the possessees and the possessive suffixes stay the same as previous examples. It all depends on what vowel the last syllable of the word has, which will take the possessive suffix.

To illustrate that differently, consider examples (7e) and (7f), in which both of the possessees are feminine entities and mean almost the same, but they nevertheless have different possessive suffixes, depending on the stemvowel. When it is *teyze* (aunt—mother’s sister), the vowel *e* should be followed by *i*, and when it is *hala* (aunt—father’s sister), the vowel *a* should be followed by *ı*, which is confirmed in Table 1. Additionally, the accusative suffixes that the possesses have after possessive suffixes is described in Table 2 to clarify the sentence integrity.

(7) a. *Mary* *anne-si-ni* *öp-tü.*
Mary mother-POSS-ACC kissed.
‘Mary kissed her (own) mother.’

b. *Mary* *baba-sı-nı* *öp-tü.*
Mary father-POSS-ACC kissed.
‘Mary kissed her (own) father.’

c. *John* *anne-si-ni* *öp-tü.*
John mother-POSS-ACC kissed.
‘John kissed his (own) mother.’

d. *John* *baba-sı-nı* *öp-tü.*
John father-POSS-ACC kissed.
‘John kissed his (own) father.’

e. *John* *teyze-si-ni* *öp-tü.*
John aunt-POSS-ACC kissed.
‘John kissed his (own) aunt (mother’s sister).’

f. *John* *hala-sı-nı* *öp-tü.*
John aunt-POSS-ACC kissed.
'John kissed his (own) aunt (father's sister).'

Table 2. Turkish language is characterized by six cases, with consistent case endings that adhere to vowel harmony.

Case	Ending	Example	Translation
Absolute	∅	*anne-si*	'his/her mother'
Dative	*-na, -ne*	*anne-si-ne*	'to his/her mother'
Accusative	*-nı, -ni, -nu, -nü*	*anne-si-ni*	'his/her mother'
Locative	*-nda, -nde*	*anne-si-nde*	'in/on his/her mother'
Ablative	*-ndan, -nden*	*anne-si-nden*	'from his/her mother'
Genitive	*-nın, -nin, -nun, -nün*	*anne-si-nin*	'his/her mother's'

One of the research questions (RQ) this paper proposes is whether there could be a possible influence of the L1 Turkish. Herewith, please draw attention to the resemblance between *si* in Norwegian for feminine and *-si* suffix in Turkish, which I will discuss in the further chapters.

3.4 Summary of the Possessive Structures

In summary, Norwegian features both natural and grammatical gender (masculine, feminine, or neuter), and has pronouns expressing both types of agreement relations, and agreement thus varies based on the type of pronouns used. The two types of possessive pronouns are, non-reflexive or non-local pronouns *hans/hennes* (his/her), which agree with the gender and number of the possessor like English, and reflexive or local possessive pronouns *si/sin/sitt*, which demonstrate gender agreement between the pronoun and the possessee. A reflexive or local pronoun indicates possession by the subject within its own clause, while a non-reflexive or non-local pronoun indicates possession by a referent outside the local clause.

English primarily relies on semantic assumptions for gender, this means the possessive pronoun agrees with the possessor.

The Turkish language needs to be regarded as a separate grammatical classification that operates independently from gender distinctions. In Turkish, there are no distinct forms for "his" and "her", instead, the possessive is a suffix to the possessed noun, and the form that it takes is dependent on whether the final stem vowel is a back or a front vowel (cf. examples (7a)-(7b)). In other words, Turkish possessives agree with neither the possessor nor the possessee.

These differences described in this chapter highlight the unique grammatical features of each of the three languages. Given this, what can be expected from Turkish learners of Norwegian who have knowledge of English to varying degrees? The starting point is that there is no possessive agreement pattern that can be transferred from Turkish, however, the suffixal forms *-sı* and *-si* might also make Turkish speakers sensitive to Norwegian *si*. As English has possessor agreement, a facilitative effect of L2 on *hans/hennes* may also be expected.

Table 3. Overview of the examined characteristics in terms of cross-linguistic differences across Norwegian, English, and Turkish.

	Norwegian	English	Turkish
Possessum Agreement	✓	X	X
Possessor Agreement	✓	✓	X
Locality Distinction	✓	X	X

Notes: ✓ indicates the property is present, while X indicates it is not present. Norwegian values are displayed for local and reflexive forms, English values for the 3rd person singular, and there are no values for Turkish.

4 Previous Literature

This chapter endeavors to provide a brief summary of significant prior research and their respective outcomes.

Possessive agreement has been found to pose some problems for second language learners when the languages exhibit different agreement patterns. Antón-Méndez (2011) conducted a production study with Spanish, Italian and Dutch speakers of English. These languages differ in their agreement constraints: Dutch and English require possessor agreement, whereas Spanish and Italian require possessee agreement.

The study presented participants with sentences paired with images of individuals, followed by an English sentence appearing below. After a few seconds, the sentence disappeared, prompting the participant to begin speaking. Their task was to silently read the sentences and, once the sentence vanished, recount what the person in the image had said. Each sentence was associated with two photographs—one of a male and one of a female—to create two conditions: matched (same gender for both the possessor and possessee) and mismatched (different genders for the possessor and possessee). These conditions were determined by the gender of the possessor antecedent and the type of noun in the possessive noun phrase (the possessee), which could be animate or inanimate and either masculine or feminine. The experiment's true aim was disguised as a memory study in a second language to prevent participants from deliberately avoiding pronominal gender errors.

Antón-Méndez hypothesized if participants' native agreement constraints affected their production of L2 possessives, Spanish and Italian (but not Dutch) speakers should make possessive gender errors in English, when the possessor and possessee noun mismatched in gender. Results showed that 92.5% of the answers were accurate, 3.8% contained gender mismatches, and 3.7% were categorized as different types of errors. As anticipated, participants who spoke Italian and Spanish made a higher number of mistakes overall, meaning both Romance languages demonstrate similar behaviour, despite their apparent distinctions. For the present thesis, it is possible to refer that the L1 Turkish learners can react to Norwegian possessives under the influence of L2 English, because of the similarity between two languages.

Following Antón-Méndez (2011), another study, by Pozzan and Antón-Méndez (2016) aims to enhance the comprehension of the parallels and distinctions in processing and learning

between a person's L1 and L2. Their research begins with the observation that possessives present challenges for certain adult English learners. It investigates whether these challenges arise primarily from transferring patterns from one's L1, as commonly assumed, or if they instead result from universal language processing and learning tendencies.

The authors hypothesized that if the errors in possessive form rely on influence from the L1 as reported in the previous work by Antón-Méndez (2011), then this error pattern should not appear in the speech of adult native Mandarin speakers learning English as an L2 or monolingual English speakers. The reason why the Mandarin speakers were selected is because Mandarin does not mark gender on pronouns in speech, which makes it interesting for this thesis, because Turkish does not mark gender on pronouns either, in both spoken and written language. However, if the errors stem from a general preference for agreement with the local subject, then such patterns should emerge in these learner groups as well. Hence, their study set out to determine whether the generalised local bias hypothesis (GLBH) or the L1 transfer hypothesis (L1H) better accounts for learners' gender-related possessive errors and whether these errors stem from representation or performance.

To achieve this, a production task and a comprehesion task (the act out task) including eye-tracking were administrated to three learner groups, assumed to be unaffected by L1 transfer: adult L2 English learners with Mandarin as their L1, monolingual English-speaking children aged 3 to 4, and native English-speaking adults.

In the production part of the study, participants were introduced to two young adult characters and their siblings initially. The adult characters were positioned in the middle of the computer screen, alongside an object, while their siblings were shown in one of the four corners of the screen. To emphasize family connections, the skin colour varied between the two families. Participants listened to instructions and were asked to produce simple sentences containing one clause, where the gender of the possessee either matched or differed from the possessor's gender. For example, in the match condition: "John gave a present to his brother," and in the mismatch condition: "John gave a present to his sister." The gender match or mismatch between the possessor and the possessee was adjusted for both subjects and items. Half of the scenarios featured a female possessor, while the other half featured a male possessor.

Adult native speakers consistently produced possessives correctly. However, both children and adult L2 learners commonly made errors in possessive gender. Children often

omitted possessives altogether, while adult L2 learners rarely did so. Additionally, the study indicates that errors in nontarget production are generally higher when the possessor is female compared to male, with the highest errors occurring in situations where there is a mismatch between the possessor's gender and the pronoun's gender. Due to a tendency to overuse masculine pronouns in uncertain situations may be the trend, leading to more errors overall, particularly in cases involving female possessors and gender mismatches. This aligned well with GLBH, which suggests that possessive gender agreement errors in production are a common occurrence among learners rather than stemming solely from L1 transfer, the results demonstrate a similar performance across experimental conditions for the two learner groups. Unlike the error-free production of adult native speakers, both learner groups exhibited a notable number of errors across conditions.

The participants were also given a comprehension task as experiment two. The same two characters and their siblings with different genders were shown alongside an object in the middle of the screen, with their siblings appearing in each of the four corners. The participants were asked to give an object to one of the characters' siblings based on instructions by using a computer mouse. For instance, "John, together with his brother and sister", and they were told to hand an object to one of them “Give an apple to his little brother/sister”.

The findings from the study indicate a contrast in performance between adult native speakers and L1 Mandarin L2 English speakers. While monolingual adults showed flawless performance in both speaking and understanding tasks, Mandarin speakers learning English made numerous errors in speaking but performed well in understanding. The errors made by L2 speakers do not seem to stem from a lack of understanding of the grammar, as their actions during the task did not show confusion or uncertainty. This suggests that their struggles in production might not be due to misunderstanding the grammar. On the other hand, English speaking children's performance suggests that their grasp of grammar might still be developing. They made quite a few errors in both speaking and understanding, and their performance in these tasks seemed to be linked, even after considering their age, hinting at a different understanding of grammar compared to adults. In line with the results from the production part of the study, the accuracy of participants' final interpretations of possessive structures varied depending on several factors: age group (children, L2 learners, and adult native speakers), gender congruency, and the gender of the possessor.

Another recent study by Lago et al. (2022) investigates how Spanish and English learners of L2 German make gender errors with possessive pronouns. They compared two learning groups, as these languages have different possessive constraints, to see if the gender of the possessor and the possessee noun match effect was influenced by the learners' first language (L1), and whether this also applies to L2 comprehension.

In the first experiment, L1 English and Spanish speakers listened to instructions while viewing displays with four objects. Each instruction included a possessive pronoun, a colour adjective, and a noun identifying the target object. The target object matched both the gender and colour described, while the other objects matched only the colour, only the gender, or neither. The possessive indicated the target object's gender, and the adjective specified both gender and colour, allowing listeners extra time to process the gender feature. The target object became fully identifiable only with the adjective. The critical comparison was between the target and a colour competitor—both matched the adjective's colour, but only the target had the correct gender, indicating the use of gender information for prediction.

The second experiment explored the same questions as the first but used a simpler two-object display, showing only the target and a colour competitor. Both objects were the same colour, but only the target matched the gender specified in the instructions. The colour adjective was included to allow participants more time to process the gender cues. The main comparison was between fixations on the target and the competitor, with an early preference for the target indicating the use of gender information predictively. The key questions were whether this predictive effect varied between groups and if it was influenced by the gender match between the possessive stem and suffix, depending on the participants' L1.

The first experiment did not generate gender predictions, so it could not determine if they were influenced by a match effect. However, the second experiment, which included more items, successfully provided strong evidence of both predictive and match effects. In this manner, the findings confirmed that match effects did impact L2 learners' predictions. Yet, the match effects were quantitatively similar across groups with different L1 possessive constraints, contradicting the idea that L2 learners misuse L1 syntactic mechanisms. The authors propose that difficulties with possessives stem from memory interference during processing, a cognitive mechanism shared by both L1 and L2 learners.

Some studies have also looked at possessive pronoun agreement in multilingual popultions. Lago, Garcia & Felser (2019) utilized tasks involving speeded acceptability judgement and self-paced reading (SPR) to assess how participants comprehend and process German possessive pronouns. To explore whether the grammars of the participants' native and non-native languages impact their performance differently, they compare two groups of non-native German speakers with opposite native language backgrounds: one group with L1 Spanish and L2 English, and another group with L1 English and L2 Spanish.

This experiment compared multilinguals' sensitivity to possessor agreement violations in German and examined the role of L2 and German proficiency. Participants underwent an accepcability judgement task (AJT) and a self-paced reading (SPR) task. The judgment task showed that Spanish natives, whose L1 grammar lacks possessor agreement, had more difficulty judging possessor violations as measured by processing time. There was also some evidence of L2 influence, but that effect was selective: Spanish speakers were better at rejecting possessor violations with increasing L2 English proficiency, but English speakers were not worse at detecting the same violations with increasing L2 Spanish proficiency. This result shows that high L2 proficiency may have helped Spanish speakers in L3 German, but did not impair English speakers who knew Spanish, which lacks possessor agreement.

For the SPR task, the reading patterns of both groups were influenced by their L1 grammar, but while the proficiency in the L2 affected participants' accuracy in making judgments, it did not significantly impact their reading speed. The authors interpret the results to mean that reading comprehension is mainly influenced by multilinguals' native grammar. Their proposition was that L1 effects reflect the automatic recruitment of native processing mechanisms, whereas L2 effects are restricted to the explicit deployment of metalinguistic knowledge. In conclusion, the results provide evidence that the prior grammatical knowledge of multilingual individuals can influence their real-time reading and comprehension of sentences.

There are some questions that are still unanswered after their study. The study investigated the relationship between possessive pronouns, possessor and possessee nouns in terms of gender agreement. The within-phrase agreement between the pronoun and possessee noun involves a clear morphosyntactic dependency. Therefore, whether the online processing profiles of possessee gender violations differ from those reported for possessor violations stated as something that should be examined in the future, which this thesis will look into.

5 The Present Study

This chapter gives an overview of the research questions highlighted in the introduction chapter, the hypothesis and the methodology used in the research study and explains how data was collected. It outlines the steps for administering the questionnaire and conducting the tasks, along with details on how the findings will be analysed.

5.1 Research Questions and Predictions

This paper is centred around gender agreement which varies cross-linguistically. Norwegian has possessives with both agreement configurations with *hans/hennes* (his/hers) and *si/sin/sitt* (her/his/its), whereas, in English, possessives only agree in gender with the possessor. By contrast, Turkish possessives do not agree in gender. Because the use of possessives might be challenging when agreement constraints differ between their native and non-native languages, these cross-linguistic differences can create problems for language learners. The anticipation regarding cross-linguistic influence (CLI) involves the idea that various languages in a speaker's cognition will exert an influence on one another. The experiment aims to show whether there is evidence for CLI or general effects of multilingualism by addressing the following questions:

RQ 1: Among individuals who are L1 Turkish speakers with L2 English, does cross-linguistic influence on their acquisition of Norwegian L3 come from L2 English, L1 Turkish, both, or neither?

RQ 2: What role does the proficiency levels in English and Norwegian, play in modulating any CLI effects (if observed)?

According to the Generalised Local Bias Hypothesis (GLBH), it could be expected that Turkish participants will behave similarly to the Mandarin participants in the study by Pozzan and Antón-Méndez (2016), that is, even though Turkish does not exhibit possessive gender agreement in either the local or the non-local domain, the participants should perform better in the local domain than in the non-local domain. However, another reason they could do better in the local domain is due to the surface overlap between the Turkish possessive suffix *-si* and the Norwegian *si*, which would also result in an improved performance within the local domain,

especially concerning feminine terms. The influence of Turkish on this transfer might vary based on the participants' proficiency in Norwegian: as participants become more proficient in Norwegian, accuracy is likely to be more even across domains. Potentially, as proficiency in English also increases, so does familiarity with *hans/hennes* (his/her), and the difference between the two domains would become less clear.

The thesis proposes that if cross-linguistic influence (CLI) from English occurs, based on the learners' proficiency in English, they will exhibit different sensitivities and tendencies. They are expected to be more accurate in the non-local contexts (*hans/hennes*), than in the local domain (*si/sin*) because these kind of errors align with English grammar. Both effects may be modulated by proficiency, such that CLI from both Turkish and English may decrease with increased proficiency in Norwegian, in other words, less difference between conditions, whereas increased proficiency in English may lead to more CLI from English.

5.2 Methodology: Participants, Stimuli, and Procedure

The participants of the study totalled 48 native speakers of Turkish, 30 females and 18 males (average age 38), all above the age of 18 and residents of Norway. There are no dyslexics and no early bilinguals, as the participants all started learning English after the age of 5, and Norwegian after the age of 16, and their Norwegian reading proficiency levels are B1 or higher.

In the beginning of the online experiment using the Gorilla Experiment Builder platform, participants received details about the project's aims, task specifics, expected duration, and data management procedures. The experiment, conducted in accordance with personal data processing guidelines, obtained approval from the Norwegian Center for Research Data (NSD). Each participant provided written consent and completed the language background questionnaire to participate in the study. The participants were compensated in the amount of 400 Norwegian Kroners.

Table 4. Participant information

	Mean
Average of Age (years)	38
Age of Turkish acquisition (years)	0
Age of English acquisition (years)	12.33
Age of Norwegian acquisition (years)	22.3
Frequency of use of Turkish	41.50% 'daily'
Frequency of use of English	6.27% 'daily'
Frequency of use of Norwegian	52.33% 'daily'
Self-rated English proficiency	3.16 out of 6 (= B2)
Self-rated Norwegian proficiency	4 out of 6 (= B2)
Level of education	2.4

Notes: For the level of education line, 1 would indicate primary school, 2 would be for high school, 3 would be for university – bachelor / undergraduate, 4 would be for university – master / graduate, and finally 5 would be for PhD.

5.3 Tasks and Materials

In this study, participants were given a series of tasks in an online web-based platform, Gorilla Experiment Builder (www.gorilla.sc, Anwyl-Irvine et al., 2018), divided into two separate sessions. Session 1 consisted of a language background questionnaire, a self-paced reading task in Norwegian, a working memory task N-back with numbers, and a Norwegian proficiency test. Session 2 consisted of a Norwegian acceptability judgement task (AJT), an English proficiency test, a "find the error" task in Norwegian, and a "find the error" task in English. I would also like to point out that this thesis is part of a larger project that will be published in the future. The mentioned four tasks; self-paced reading (SPR) in Norwegian, working memory (N-back) with numbers and find the error tasks will not be discussed in this thesis because of space limitations, but the rest of them are the focus of the present study. After the first session, participants had to wait at least one week to continue with the second session.

They completed each session in one go. There were designated short breaks between each of the tasks, as well as halfway through the tasks.

The language background questionnaire took approximately 5 minutes to complete. Participants were required to complete the entire session uninterrupted, ensuring they were comfortably seated in a quiet environment. The questionnaire covered inquiries regarding their past and present language experiences, along with basic demographic details. These included gender, age, right or left handedness, highest level of formal education, dyslexia diagnosis (participatns who had dyslexia could not participate), residence location in Norway, duration of residence in Norway, usage of Turkish within their household, participation in Norwegian courses (duration and weekly hours), familiarity with languages beyond Turkish, English, and Norwegian, age of language acquisition, daily language usage percentages, primary language in different contexts (home, family and friends, work), recent English conversation, tendency to mix languages in conversation, and device type being used to complete the tasks.

Subsequently, participants were evaluated on their proficiency in Norwegian and English. The Norwegian proficiency assessment was based on cloze tests, adapted from placement tests used at Folkeuniversitetet in Tromsø. The English proficiency test was a condensed version of the Oxford Placement Test (OPT). The participants were informed that based on the results, they would be sorted into groups, and that their genuine proficiency in Norwegian and English was of interest, hence they were asked not to use the internet. They were allowed small breaks before moving on to the next task. The Norwegian proficiency task lasted about 15 minutes, while the English proficiency task about 10 minutes. The English one comprised 60 multiple-choice questions. In the first section, participants were shown images of messages and asked to indicate where they belonged. Such as a sign, which needs to be at a train station. Other sections required them to complete missing words in sentences or texts, with possible answers provided below.

In the Acceptability Judgement Task (AJT), participants read sentences in Norwegian, and had to indicate whether they thought the sentences sounded good or bad. The task included 48 target items, 24 in the local and 24 in the non-local domains, and within each domain there where 12 feminine and 12 masculine pronouns. Each sentence occurred in 3 or 4 conditions depending on the domain. 4 lists were created, so that each participants saw only one version of the sentence. The criteria involved possessees such as *mother*, *daughter*, *sister*, *aunt*, *father*,

son, *brother*, and *uncle*, along with varying proper names, verbs, adverbials of place, and days of the week (see examples below).

The study is interested in their first intuition, so the participants were informed to not think about the sentence too much and try to respond as quickly as possible. They would have 5 seconds per sentence, so they could not pause during the task. Their reaction times (RT) were also measured. There was a break halfway. The participants were asked to be in a comfortable position and in a room where they would not be disturbed. When they were ready, they placed their fingers over the "M" and "Z" keys and pressed the space bar to start. 5 practice sentences were given before starting the task.

For every sentence, they could press either "M" with a thumbs up image on the right side of the screen or "Z" with a thumbs down image on the left side of the screen. The participants were notified that they were always going to shown two sentences, one following the other. They had to press the space bar after reading the first sentence to make the second sentence appear. The first sentence was always the introductory sentence, they only had to judge the second of the two sentences, which they were tested and also was in bold font.

The participants encountered conditions in both the local and the non-local in the following conditions: baseline (BL), gender violation (GV), mismatch (MM), and only part of the non-local domain: locality violation (LV).

Example (8) consists of non-local domain sentences, in which the possessive pronoun links to an antecedent (the possessor) located outside the finite clause and therefore should align with the possessor. (8a) illustrates the BL condition, in which all elements match in gender: the possessor 'Mary', the possessee *søstera* (sister), and the pronoun *hennes* (her) are all feminine. In the second example (8b), there is a GV condition, where the pronoun does not agree with the possessor, which makes it ungrammatical for this type of pronoun. A masculine possessor 'John' with a feminine pronoun *søstera hennes* (her sister). Example (8c) shows a gender MM condition, because the possessee *broren* (brother) does not match with the possessive pronoun *hennes*. In the (8d), there is a LV condition, where the wrong pronoun is used. This means instead of the reflexive pronoun *si*, the non-reflexive pronoun *hennes* (her) is used.

(8) a. *John danser ikke med Mary så ofte.*
'John doesn't dance with Mary often.'

Men han danser med søstera ***hennes*.F** på dansetimen hver lørdag.
'But he dances with her sister at dance class every Saturday.'

b. *John danser ikke med Peter så ofte.*
'John doesn't dance with Peter often.'

Men han danser med søstera ***hennes*.F** på dansetimen hver lørdag.
'But he dances with her sister at dance class every Saturday.'

c. *John danser ikke med Mary så ofte.*
'John doesn't dance with Mary often.'

Men han danser med broren ***hennes*.F** på dansetimen hver lørdag.
'But he dances with her brother at dance class every Saturday.'

d. *Mary liker ikke å danse så ofte.*
'Mary doesn't like to dance so often.'

Men han danser med søstera ***hennes*.F** på dansetimen hver lørdag.
'But she dances with her sister at dance class every Saturday.'

As an example for local domain in Norwegian possessee agreement, possessive pronouns *si/sin* in sentences of example (9) are required to agree with the possessees *søstra* (sister) and *broren* (brother). Example (9a) demonstrate in the BL scenario, the reflexive pronoun is necessary as the possessor acts as the sentence's subject. The possessor 'Mary', and the possessee *søstera* (sister), and the pronoun *si* are all feminine, hence the possessor, the pronoun and the possessee are of the same gender. In the example (9b), in the situation of GV, the pronoun *si* agrees with the possessor 'Mary', not the possessee *broren* (brother), which is ungrammatical for this type of pronoun. Finally, the example (9c) shows MM, as possessive pronoun *si* matches with possessee *søstera* (sister), but not the possessor 'John'.

(9) a. *Mary liker ikke å danse foran andre.*
‘Mary doesn’t like to dance in front of others.’

Men hun danser med søstera ***si.F*** på dansetimen hver lørdag.
‘But she dances with her sister at dance class every Saturday.’

b. *Mary liker ikke å danse foran andre.*
‘Mary doesn’t like to dance in front of others.’

Men hun danser med broren ***si.F*** på dansetimen hver lørdag.
‘But she dances with her brother at dance class every Saturday.’

c. *John liker ikke å danse foran andre.*
‘John doesn’t like to dance in front of others.’

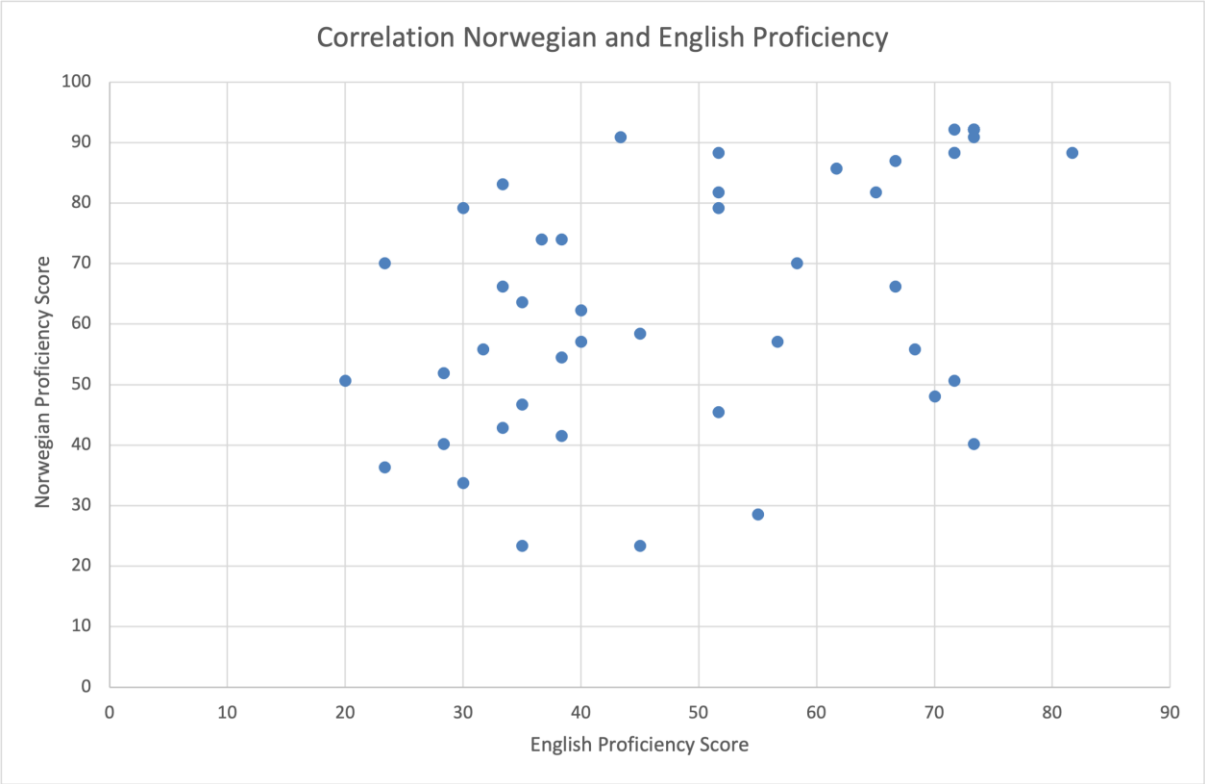
Men han danser med søstera ***si.*****F** på dansetimen hver lørdag.
‘But he dances with his sister at dance class every Saturday.’

6 Results and Analysis

This chapter presents the findings from the tasks used in the experiment. The outcomes of the Norwegian and English proficiency tasks show a variety of scores among participants. In the Norwegian test, scores ranged from 23 to 92 out of 100, while in the English test, they ranged from 20 to 81 out of 100. To explore the origins of CLI further, proficiencies of the 48 participants were used as a continuous variable. First, based on the Norwegian scores, they were separated into two equal groups of 24 each. Following this, the same 48 participants were once more divided into two groups of 24 each based on their proficiency in English. Both of the tests had a scoring scale from 1 to 100, with proficiency levels determined as follows: for the Norwegian proficiency test, scores from 23 to 66 were classified lower level, while scores from 70 to 92 were categorised as higher level. As for the English proficiency test, scores from 20 to 45 were classified lower level, and scores from 51 to 81 were categorised as higher level.

In this manner, the first group showcases results from participants with higher Norwegian proficiency, while the second group focuses on those with higher English proficiency. For the statistical analysis, statistical programming tool R (https://www.R-project.org/, R Core Team, 2021) was used. However, upon classifying the participants into these groups, it appeared that there was considerable overlap between the subgroups regarding their proficiency in each language, indicating a correlation between proficiency in Norwegian and English. Analysis using a Pearson correlation test confirmed this correlation ($R= 0.507302$, $p = 0.002$). Consequently, it was not feasible to include both Norwegian and English proficiency simultaneously in the statistical models. The issue arising from the findings is whether there is a correlation between participants who score higher in both Norwegian and English, which is shown in Figure 1.

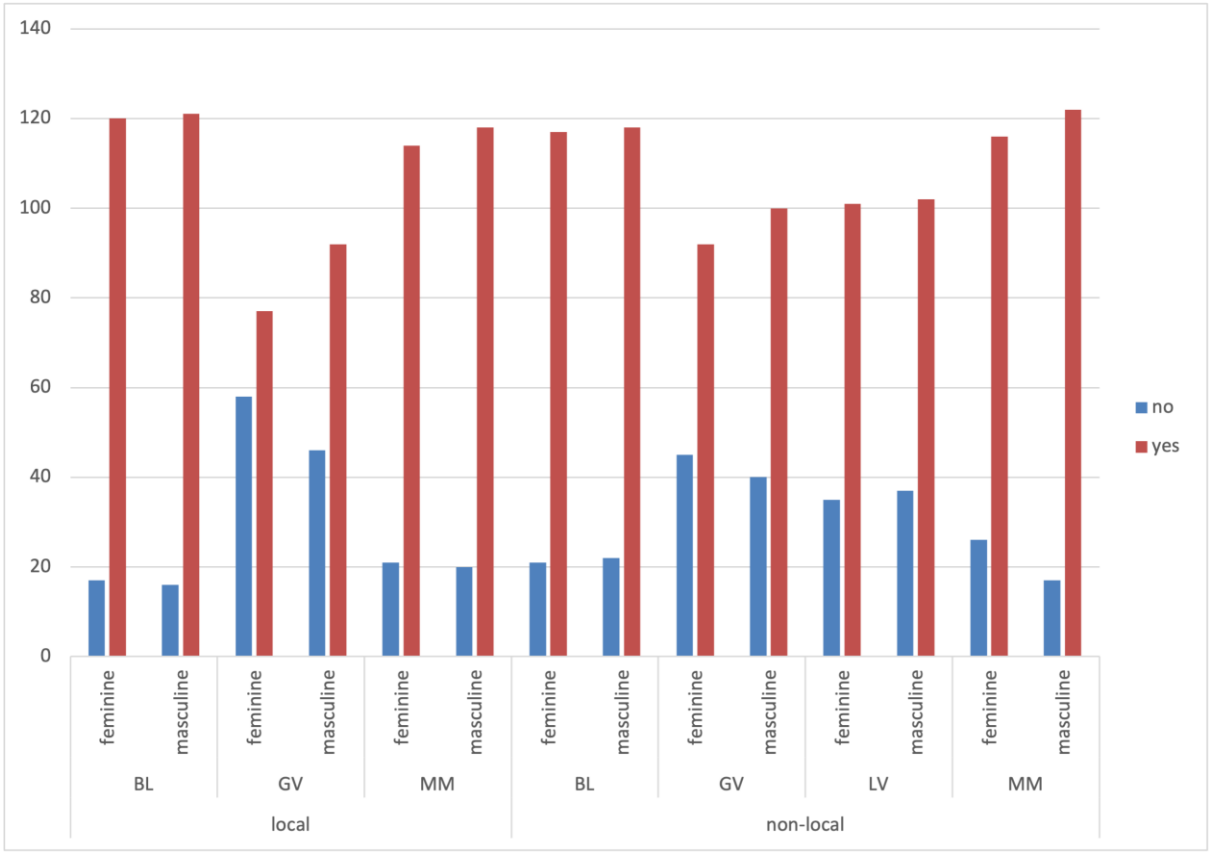
Figure 1. Participants' correlation in Norwegian and English Proficiency



To analyse the data from acceptability judgement task (AJT), separate mixed effects models for each condition were performed. These models were run three times: one without considering proficiency, one incorporating Norwegian proficiency, and one incorporating English proficiency. In all models, the dependent variable was the response, while the independent variables included domain, version (BL vs GV/MM/LV), gender pronoun, and either Norwegian or English proficiency, along with the interactions between all these variables.

In general, the outcomes for all the participants (cf. Figure 2), irrespective of their proficiency levels in Norwegian nor English, do not indicate any MM effect. However, they do exhibit some responsiveness to GV and this is significantly stronger in the local domain. Additionally, they show some sensitivity to LV.

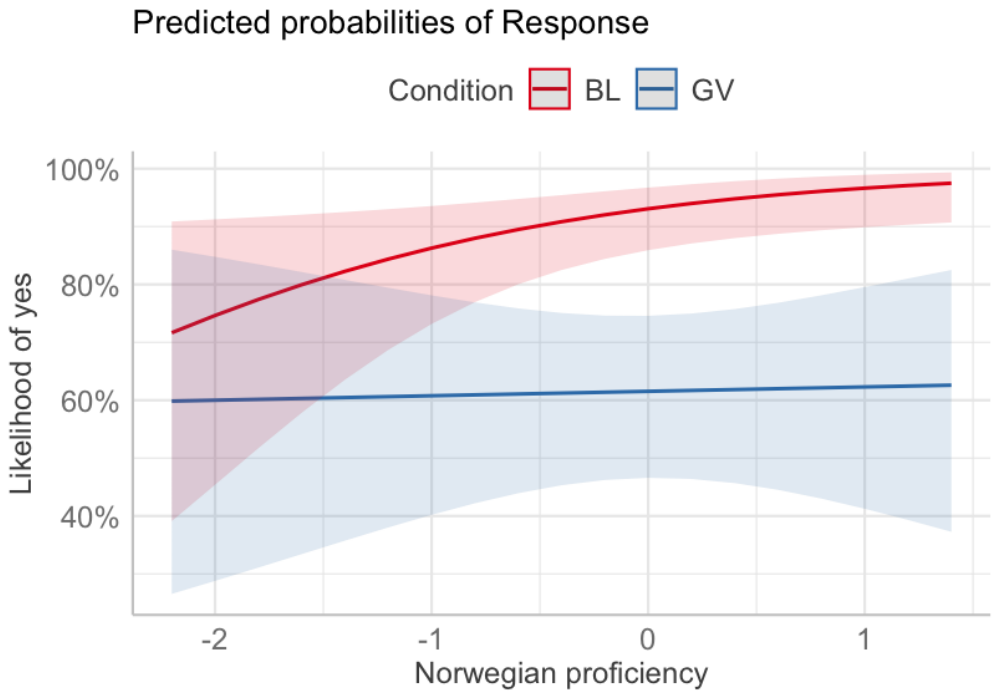
Figure 2. Overview of the participants' responses



There is a significant main effect of version ($p<0.001$). This means that overall, the participants rejected GV significiantly more than the BL. An interaction between condition and domain ($p=0.03$) can also be seen, indicating that the participants rejected GV more in local domain. There is a visible trend suggesting that within the local domain accuracy is higher with the feminine pronoun in line with surface transfer from Turkish. However, this effect was not significant in the model, possibly due to low number of items within this subcondition.

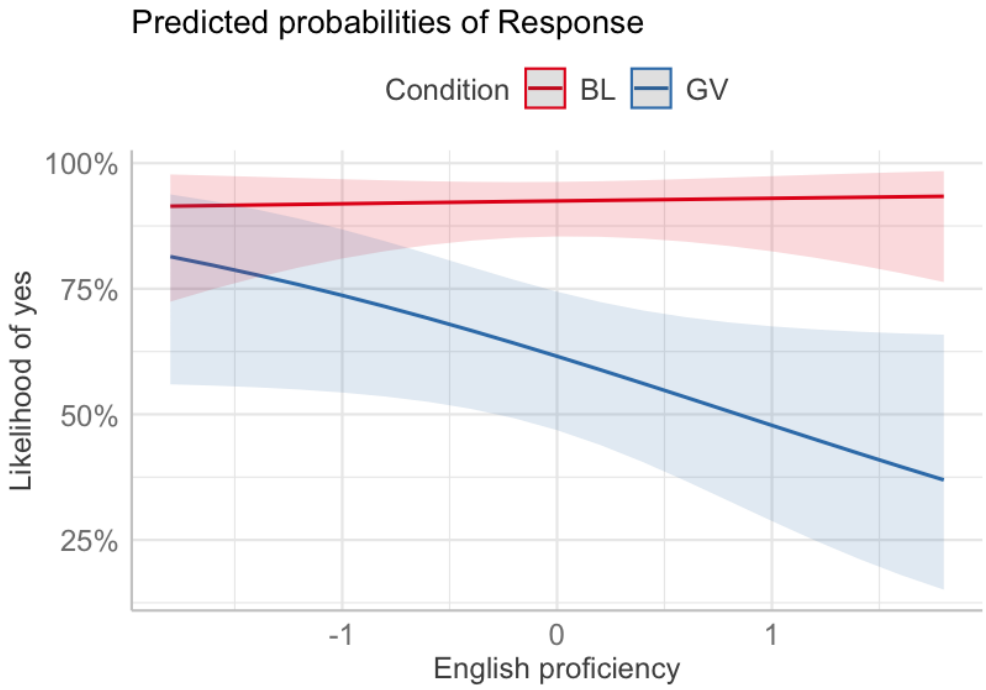
In the second model Norwegian proficiency was included. The same effects were significant as the first model. In addition, there was an interaction between Norwegian score and GV ($p<0.001$). This means the higher the Norwegian score is, the more the participants react to GV, and this is true across domains (cf. Figure 3). However, the difference in the GV condition is minimal with different proficiency levels and the learners get better at accepting the BL, so it is the difference between the two conditions that is tested.

Figure 3. Mean likelihoods of responses related to Gender Violation based on proficiency in Norwegian



Then the third model included the English proficiency instead of Norwegian proficiency. Again, the same effects were significant as in with the first model, and there was an interaction between English proficiency and the condition indicating that as English proficiency increases, the participants were more likely to reject GV ($p=0.003$) (cf. Figure 4).

Figure 4. Mean likelihoods of responses related to Gender Violation based on proficiency in English



The same three analyses were run on MM condition (also including the BL condition to compare.) However, none of the effects were significant.

Finally, for the LV condition (including also the BL to compare), only the non-local domain was analysed, because this condition did not exist in local domain. In the model without the proficiency none of the effects were significant. However, in the model with Norwegian proficiency there was a significant interaction between Norwegian proficiency and the condition ($p=0.03$). (cf. Figure 5)

In the model with English proficiency there was a significant interaction between English proficiency and the condition ($p=0.008$). (cf. Figure 6) What this means is that both Norwegian and English proficiencies positively influenced the likelihood the LV condition being rejected, which is not surprising considering the two were correlated.

Figure 5. Mean likelihoods of responses related to Locality Violation based on proficiency in Norwegian

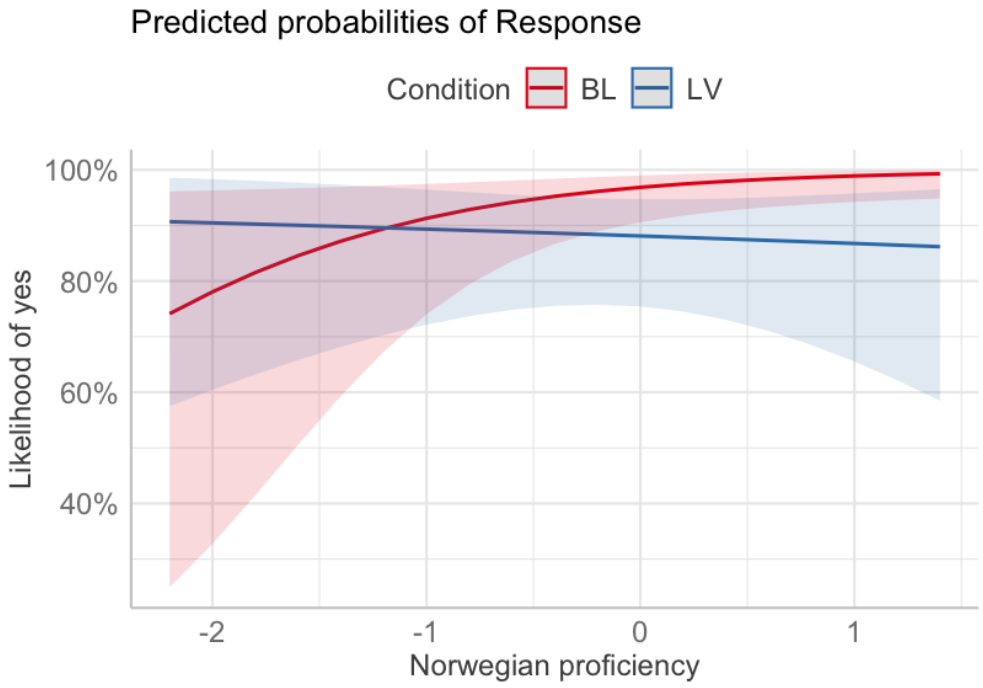
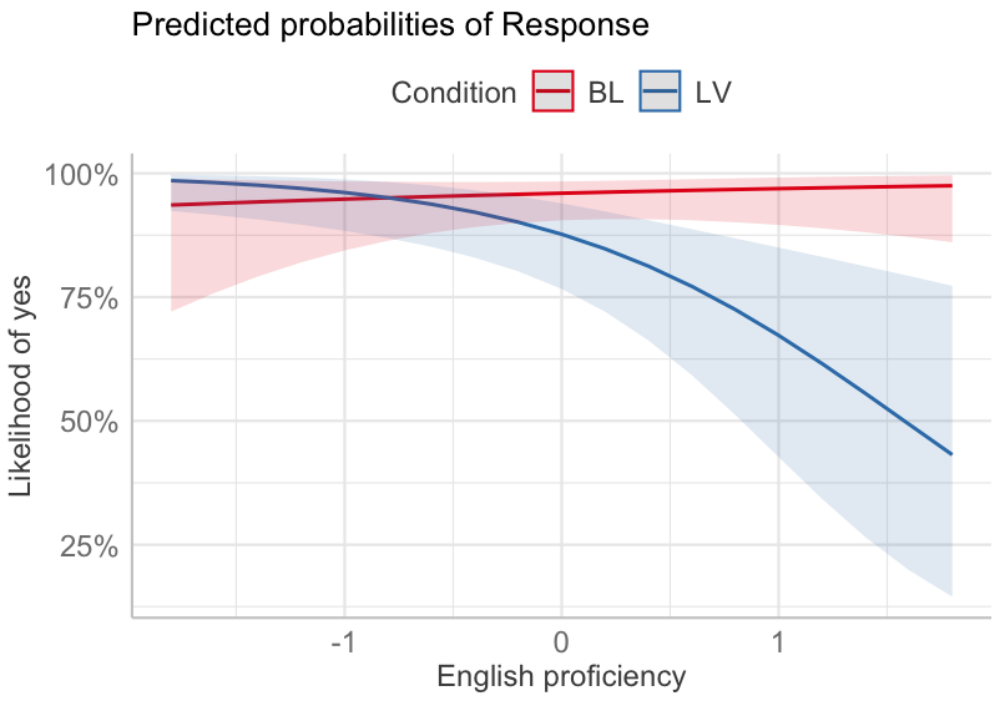


Figure 6. Mean likelihoods of responses related to Locality Violation based on proficiency in English



7 Discussion

In this chapter, the results derived from analysis of the research data are examined, considering them in the context of the previous literature and existing models on third language acquisition chapters, aiming to delve deeper into the results of this study and draw comparisons with prior research.

In possessive gender agreement structures, Norwegian shows both post-nominal gender agreement with the possessee and pre-nominal gender agreement with the possessor, the latter resembling English in pre-nominal gender agreement. Based on this, the present thesis hypothesized that when learning Norwegian (L3) after English (L2), there is a likelihood of transferring language knowledge between English and Norwegian due to their similarities. This transfer might be beneficial in non-local domains involving *hans/hennes* (his/hers), but not beneficial in local domains involving *si/sin*. The study also considers how proficiency in Norwegian and English could influence this transfer from L2.

This prediction, that higher proficiency in English would have a positive effect on accuracy in the non-local domain was not confirmed. The data reveals that English proficiency has a positive effect on both the local and non-local domain, as well as on their sensivity for locality violations. This means that it cannot be claimed that there is an effect of cross-linguistic influence (CLI) from English. As mentioned in the previous chapter, there is a strong correlation between Norwegian and English proficiency, and it is seen that proficiency in Norwegian also affects accuracy in both the local and the non-local domain. Because of this, the results make it impossible to disentangle between English and Norwegian proficiency effects, and therefore conclusions regarding CLI from English cannot be drawn.

There may be several explanations for the observed correlation between English and Norwegian: naturally, it is possible that having an enhanced English knowledge could be beneficial for learning Norwegian in general, due to its close linguistic relationship to Norwegian, but the conclusion is that an effect of English cannot be found. Another possibility is that, regardless of which language combination, having learned an L2 to a high profifciency, makes it easier to learn an L3. Future studies could try to isolate the effect of English proficiency by better controlling for Norwegian proficiency while maintaining large variation in terms of English proficiency.

The second hypothesis was that even though Turkish lacks gender agreement, and hence no effects cross-linguistic influence (CLI) would be expected, there could still be an effect of the fact that the Turkish (L1) possessive forms *-sı* and *-si* are so similar to the Norwegian local feminine possessive pronoun *si*. However, not (only) based on their knowledge of Norwegian agreement results, but possibly also because they rely on phonological constraints from Turkish. The prediction that the surface form of Turkish has a facilitative effect on the acquisition of possessives in the local domain in Norwegian is confirmed by the fact that these learners are more sensitive to errors in this domain (*si/sin*). Not only the accuracy on feminine forms, but the local domain as a whole is a proof of this.

Another possible explanation is that local agreement with Norwegian, which in Norwegian would be the *si/sin* possessives that agree with possessee nouns within the NP, may be typologically preferred, possibly due to a general processing preference for local dependencies, in the line with the Generalized Local Bias Hypothesis (GLBH; Pozzan and Antón-Méndez, 2016). In this case, either L1 transfer, or the local agreement bias, or both may have combined to produce the observed results, which is the fact that the Turkish participants have higher sensitivity to local agreement errors.

Drawing upon the framework of possessive pronouns, this thesis looked into six prominent models of L3A to make predictions: the L1 Factor (Lozano, 2003), the L2 Status Factor (Ullman, 2001), the Typological Primacy Model (Rothman, 2010, 2011, 2013, 2015), the Cumulative Enhancement Model (Flynn et al., 2004), the Linguistic Proximity Model (Westergaard et al., 2017), and the Scalpel Model (Slabakova, 2017). While there is not a lot to discuss regarding them, because the data does not decisively support CLI from either L1 or L2.

In summary, whether there was CLI from first language, Turkish, and second language, English, it is not possible to state, since the better performance in the local domain could be explained by both CLI from Turkish or the GLBH, and because English was correlated with Norwegian proficiency, it really could not be tested for CLI whether what seem to be effects of English are in fact driven by Norwegian proficiency.

8 Conclusion

The current study investigated the phenomenon of cross-linguistic influence (CLI) in adult third language acquisition (L3A), focusing on how Norwegian possessive pronouns are acquired by individuals with Turkish as their first language (L1) and English as their second language (L2). Examining possessive pronouns proves intriguing within the scope of this subject, chiefly due to the considerable cross-linguistic variations among these three languages. In English and Norwegian (where his/her corresponds to *hans/hennes*), the possessive pronoun must match the possessor's gender. In Norwegian, however, there is a dual agreement system based on whether the pronoun aligns with the possessive object *si/sin/sitt*. Turkish, on the other hand, lacks such agreement structures altogether.

Two primary research questions were formulated to examine the origin and characteristics of CLI during different stages of L3 acquisition. Does cross-linguistic influence on the acquisition of Norwegian as a third language by native Turkish speakers who speak English as a second language come from their L1 Turkish, L2 English, both, or neither? If cross-linguistic influence (CLI) is present, how do their proficiency levels in English and Norwegian impact these effects?

The methodologies typically applied in research on cross-linguistic influence in Ln acquisition were employed. These were conducted in the following chronological order: a language background questionnaire, proficiency tests in English and Norwegian, and an acceptability judgment task (AJT).

The findings from the acceptability judgement task showed that, participants' reactions differentiated significantly between baseline sentences on the one hand, and sentences with gender violations and locality violations on the other hand. Moreover, the degree with which participants rejected the sentences with gender violations was significantly higher in the local domain than in the non-local domain, providing evidence for Turkish learners are more accurate in local domain. By any means, there were not any significant differences observed in the gender mismatch (MM) sentences as opposed to the baseline (BL) sentences this absence of could be solved by expanding the experimental sentences and participants.

The increased sensitivity to gender violations in the local domain can be explained by either the GLBH or influence from Turkish. If the case of CLI comes from learners' first language Turkish, responses resulted in facilitative transfer from Turkish structures to Norwegian, leading to heightened sensitivity in detecting errors in the local domain, but this was not statistically significant. Maybe one can speculate whether the kind of overlap in forms that is seen between Turkish and Norwegian *si* might have had a higher effect in a production experiment compared to judgement task. This is because the frequent use of Turkish by the speakers might lead to quicker retrieval of the form due to co-activation.

Along with that, it is observed that English proficiency affects accuracy in both local and non-local domain, less surprisingly, Norwegian proficiency also affects both local and non-local domain. Proficiency in Norwegian and English are highly correlated, and with the available data, they cannot be disentangled. This situation complicates the ability to address the question about CLI from L2 English. Future research should aim to control for Norwegian proficiency while maintaining a large variation in English proficiency. In that case, it would be possible to provide more comprehensive insights and comprehension about how learning a third language is influenced by multiple languages. While the current thesis provides substantial insight into the topic, the answers to these questions remain contentious due to conflicting findings in the study.

In conclusion, accuracy in the local domain, which means a possible cross-linguistic influence from Turkish possessive forms; but this might also be due to universal bias (GLBH), cannot be disentangled. Likewise, accuracy and proficiency in English resulted with no evidence of CLI from English, as this should only affect non-local domain. The question comes to why there is this correlation in proficiency between English and Norwegian languages? It could be because once a person has acquired one foreign language, it is easier to acquire a new one, especially when the languages are very similar, or alternatively, some people are simply better language learners, and if that is the case, it can be expected to find this kind of correlation, but not only when the two languages are closely related. I do hope that future research will systematically explore these questions to provide a more comprehensive understanding of agreement phenomena in the context of the first language Turkish, with the second language English, in the third language Norwegian acquisition.

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Appendices

Appendix 1: Consent Form

The appendix contains the consent form presented in the main experiment, which was provided to the participants in Turkish.

Welcome to the research project "Sentence processing in Norwegian"

Sentence processing in third language speakers of Norwegian is a research project conducted by the AcqVA Aurora research group at UiT The Arctic University of Norway. Its main aim is to gain a better understanding of how second language speakers of Norwegian process sentences when reading Norwegian. You will be part of the control group of native speakers of Norwegian.

Criteria for participation

Please beware that you can only participate if:

- Norwegian is your only native language (acquired from birth)
- you are 18 years or older
- you have not been diagnosed with dyslexia
- you currently live in Norway

If you do not fit these criteria, you will automatically be excluded from participation and you will not receive any compensation.

The experiment consists of two parts:

Session 1 will consist of:

- a language background survey (5 minutes)
- a reading task in Norwegian (20 minutes)
- a Norwegian proficiency test (15 minutes)

Session 2 will consist of:

- a Norwegian sentences judgment task (20 minutes)
- a memory task (5 minutes)
- a "find the error" task in Norwegian (5 minutes)
- a "find the error" task in English (5 minutes)

Important:

- The reading task has to be completed **in one go**. There is a short break halfway, which will be indicated.
- You have to perform the experiment in a **quiet place** where you will not be disturbed.
- The experiment can be done from your own home, on a PC or laptop, but **not from a smartphone or tablet**.
- Before you start you have to **close any programmes** you have open on your computer, as these may affect the response time measurements.

Participation is voluntary

If you choose to participate, you can withdraw your consent at any time (even after the experiment is completed) without giving a reason, and with no negative consequences for you. All information about you will then be removed from the dataset.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act). The project group, including students and supervisors, will have access to the personal data. Your data will be associated with a code. The list of names and respective codes will be stored separately from the rest of the collected data. The data will be stored on a research server and will be completely anonymised. Participants will not be recognizable in publications resulting from this study.

What will happen to your personal data at the end of the research project?

The project is scheduled to end December 31st 2025. The experimental data will be completely anonymised and will be stored indefinitely for future research.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability)
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent. Based on an agreement with UiT The Arctic University of Norway, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Consent

I have received and understood information about the project *"Sentence processing in Norwegian as a third language"*. I give consent:

- to participate in an online survey
- to participate in an online reading task
- for my anonymised data to be stored after the end of the project for future research
- for my personal data to be processed until the end date of the project, December 31st, 2025.

Appendix 2: Language Background Questionnaire

This appendix includes the questions from the language background questionnaire used in the main experiment. The questionnaire was translated into Turkish for the participants.

1. Sex:

- Male
- Female
- Other (please specify)

2. Age:

_____

3. Are you left-handed or right-handed?

- Left-handed
- Right-handed

4. 4. What is your highest level of formal education?

- Primary school
- High school
- University – Bachelor / Undergraduate
- University – Master / Graduate
- PhD

5. Have you been diagnosed with dyslexia?

- Yes
- No

6. Do you currently live in Norway?

- Yes
- No

7. In which municipality do you live?

_____

8. If you have lived elsewhere in Norway for more than 6 months, please indicate in which region(s).

(Multiple answers possible - leave empty if not applicable)

- Nord-Norge
- Trøndelag
- Vestlandet
- Sørlandet
- Østlandet

9. How long have you lived in Norway in total?

Years: _____

Months: _____

10. What is your native language?

(This is the language you were exposed to from birth)

- Turkish

11. Do you speak Turkish with any of the members in your household?

(Multiple answers are possible)

- Partner
- Child(ren)
- Parent(s)
- Housemate(s)
- I live alone
- Other (please specify)

12. If you ever took a Norwegian course, please answer the following questions. If not, you can go to the next page.

a. For how long did you take classes?

Years: _____

Months: _____

b. How many hours per week did you spend on average on your courses?

_____

13. If you have knowledge of any other languages than English and Norwegian, please indicate which language(s) these are.

If you know more than 3 other languages, choose the 3 you know best.

If you do not have knowledge of any other languages, you may skip this question.

Language 1: _____

Language 2: _____

Language 3: _____

14. At which age did you start learning each of your languages?

Norwegian: _____

Turkish: _____

Language 1: _____

Language 2: _____

Language 3: _____

15. How would you rate your proficiency in each of these languages?

A1 = Beginner

A2 = Elementary

B1 = Intermediate

B2 = Upper-intermediate

C1 = Advanced

C2 = (Near-)native

	Norwegian:	Turkish:	Language 1:	Language 2:	Language 3:
Speaking	_____	_____	_____	_____	_____
Listening	_____	_____	_____	_____	_____
Reading	_____	_____	_____	_____	_____
Writing	_____	_____	_____	_____	_____

16. Can you indicate, for each of your languages, the percentage with which you use them on a daily basis?

(The sum of the percentages should be 100)

Norwegian: _____

Turkish: _____

Language 1: _____

Language 2: _____

Language 3: _____

17. Which language do you use most in the following contexts?

(Only if you use several languages more or less equally often, you can tick several boxes.)

	Norwegian	Turkish	Language 1	Language 2	Language 3	Not applicable
In your home						
With your partner						
With your child-(ren)						
With other family						
With friends						
For your studies						
At work						

18. When was the last time you used English in a conversation?

- Today
- In the last week
- More than a week ago
- More than a month ago
- More than 6 months ago

19. Do you ever mix languages in a single conversation?

(i.e. while speaking in one language you may use sentences or words from the other language.)

- Never
- Rarely
- Sometimes
- Frequently
- Always

20. Are this anything that was not asked in this questionnaire, but that you think we should know about?

_____

21. Finally, which type of device are you using right now?

- Computer (desktop / laptop)

Appendix 3: Norwegian Proficiency Test

The Norwegian proficiency test used in the present study is provided below. As mentioned earlier in chapter 5.3, the this language assessment was adapted from placement tests used at Folkeuniversitetet in Tromsø. Participants were instructed to choose the best answer from the four given options to fill in the gaps.

Om Pedro

Pedro er spansk, men nå har han vært i Norge i 5 år. Han bor i et **(1)** ..... hus og arbeider på en stor fabrikk som **(2)** ..... fem kilometer borte. Bussen stopper rett foran det **(3)** ..... huset, så han kan ta den **(4)** ..... morgen til arbeidet. Det er september. Trærne har fått **(5)** ..... farger og eplene i hagen hans er **(6)** ..... Pedro liker å gå tur nå **(7)** ..... høsten, og på søndag gikk han en lang tur. Han **(8)** ..... veien til Blåvann, og gikk **(9)** ..... bakkene på den andre siden **(10)** ..... vannet. Da han kom opp på toppen, **(11)** ..... han seg og spiste en **(12)** ..... matpakke. Han hadde også fiskestangen sin **(13)** ..... seg, og da han var på **(14)** ..... stoppet han ved vannet og **(15)** ..... lykken. Men han fikk ikke en **(16)** ..... fisk. Han visste at det **(17)** ..... frossen fisk i kjøleskapet, så **(18)** ..... fikk han likevel en god middag.

(1) lille, **lite**, liten, litt
(2) står, legger, stod, **ligger**
(3) **lille**, stor, liten, stort
(4) hvert, alle, hele, **hver**
(5) ferdige, **fine**, finne, glatte
(6) **modne**, modent, egen, egne
(7) i, om, til, **på**
(8) tar, tatt, gått, **tok**
(9) **oppover**, oppe, der, dit
(10) fra, **av**, på, for
(11) setter, **satt**, satte, sittet
(12) **liten**, lille, godt, lite
(13) til, for, **med**, fra

(14) hjem, **hjemveien**, hjemme, hjemover

(15) så, begynte, **prøvde**, likte

(16) hver, **eneste**, slikt, slike

(17) ligger, legger, la, **lå**

(18) fordi, **derfor**, for, hvis

Informasjon om Norge

Dagliglivet i Norge kan være svært forskjellige, avhengig av hvor i landet man bor, og hvilken årstid det er. Været f.eks. spiller en stor rolle. I nord er sola oppe **(1)** ..... døgnet om sommeren, men til **(2)** ..... er den borte om vinteren. I Sør-Norge er det annerledes. Slike forskjeller **(3)** ..... selvfølgelig dagliglivet. Men grunnleggende regler og normer er felles, **(4)** ..... tid og sted. Norske familier består vanligvis **(5)** ..... av foreldre og barn. Det bor sjelden besteforeldre eller **(6)** ..... familie sammen med dem. Dette betyr at foreldre med arbeid **(7)** ..... hjemmet må gjøre alt husarbeid i fritiden. Det er **(8)** ..... bestemor eller tante som ordner og rydder og vasker i **(9)** ..... av dagen. Derfor er det vanlig å planlegge fritiden og helgene for å **(10)** ..... husarbeid, innkjøp, sport, venne- og familiebesøk **(11)** ..... var husarbeid kvinnearbeid også i Norge. Men flere og **(12)** ..... unge menn tar nå **(13)** ..... del av husarbeidet i hus og hjem. Skoler og kontorer begynner kl.08.00 eller 08.30. Arbeidsplasser **(14)** ..... håndverksfagene har ofte arbeidstid fra kl.07.00. Vanligvis har man spisepause en **(15)** ..... mellom kl.11.00 og kl.12.00. De fleste har matpakke med **(16)** ..... og venter med det varme **(17)** ..... til etter arbeidstid. Om vinteren kan det være **(18)** ..... mørkt og kaldt, men dette er ingen gyldig grunn til å **(19)** ..... seg hjemme fra skole eller jobb.

(1) alle, **hele**, helt, bestandig

(2) sammenlikning, **gjengjeld**, motsetning, tross for

(3) påvirket, fungerer, **påvirker**, innvirker

(4) av, uavhengig fra, **uavhengig av**, avhengig av

(5) begge, slike, **bare**, borte

(6) **annen**, andre, ukjente, mange

(7) utsiden, på, inne, **utenfor**

(8) noe, både, **ingen**, snille

(9) tilfellet, **løpet**, gang, hele

(10) vaske, klare, sette, **begynne**

(11) Alltid, Nasjonalt, Spesielt, **Tradisjonelt**

(12) mange, **flere**, mere, mye

(13) **sin**, deres, hans, sine

(14) utenfor, **innen**, ovenfor, mellom

(15) lunsj, avdeling, **gang**, del

(16) ham, dem, sin, **seg**

(17) måltider, **måltidet**, maten, mat

(18) **både**, begge, slik, slikt

(19) være, bli, **holde**, klare

Muntlige Fortellertradisjoner

Lenge før menneskene begynte å lese, skrive og trykke bøker, hadde de fortalt hverandre historier. Noen av disse kaller vi myter, andre er eventyr, og noen kaller vi **(1)** ..... Dette var et av menneskenes første **(2)** ..... på å gi livet en mening, en **(3)** ..... Mange forfattere fra Afrika, Asia og Sør-Amerika sier at **(4)** ..... denne tradisjonen har vært veldig viktig for dem og **(5)** ..... diktning, og at den **(6)** ..... er levende mange steder hos dem. Det er **(7)** ..... bestemor som forteller og **(8)** ..... den. I et ordtak fra Afrika heter det "Et gammelt menneske som dør, er som et bibliotek som **(9)** ....." Men denne tradisjonen blir som **(10)** ..... svakere når et flertall av **(11)** ..... kan lese og skrive. Det skrevne ord **(12)** ..... seg til den enkelte leseren. Men den muntlige fortellingen **(13)** ..... seg mot en gruppe og skaper nært **(14)** ..... mellom forteller og tilhørere. I **(15)** ..... til det skrevne ord er den muntlige fortellingen **(16)** .....; alle har et morsmål, men ikke alle har et **(17)** ..... skriftspråk. Den muntlige fortellingen **(18)** ..... ikke mellom en analfabet og en **(19)** ..... .

(1) stykker, **sagn**, romaner, sanger

(2) program, plan, **forsøk**, vedtak

(3) undersøkelse, studie, prøve, **forklaring**

(4) likevel, slik, nok, **nettopp**

(5) sin, **deres**, sine, seg

(6) **stadig**, vanligvis, alminnelig, allerede

(7) ganske, troverdig, tillitsfull, **ofte**

(8) forsikrer, overprøver, **ivaretar**, tenker

(9) level, låner, leverer, **brenner**

(10) ofte, **regel**, unntak, bestemmelse

(11) innbygger, forfatter, befolkning, **befolkningen**

(12) henvender, henviser, **finner**, prøver

(13) betror, greier, **retter**, undersøke

(14) liv, strøk, **forhold**, plass

(15) forholdet, loven, tradisjon, **forhold**

(16) **praktisk**, demokratisk, demokrati, praksis

(17) **eget**, egen, deres, brukbar

(18) grenser, **skiller**, unntar, avtar

(19) skriving, **skrivekyndig**, skrivekunnskap, skriftlig

Samer og nordmenn

Samene har bodd på Nordkalotten **(1)** ..... lange tider. De har et språk som er svært forskjellig fra norsk, og en kultur som i stor grad skiller seg fra den norske. Det bor samer i alle deler av Norge, men Oslo er i dag kommunen hvor det er flest samer bosatt. **(2)** ..... de har flyttet sørover, har mange samer gitt opp sin samiske identitet **(3)** ..... de har opplevd samisk kultur som mindreverdig. Fra rundt 1850 til 1960 ble det ført en bevisst fornorskningspolitikk hvor målet var å få samene til å gi opp sitt språk, kultur og religion og bli mer som nordmenn. Den gamle sangformen joik er noe av **(4)** ..... eldste og viktigste i samisk tradisjon. Joiken gir uttrykk for stemninger og følelser knyttet til naturen, og hver person har gjerne sin egen joik. I fornorskningsperioden ble joik **(5)** ..... av de norske myndighetene. Samiske barn fikk undervisning på et språk de ikke forsto, og de fikk ikke lov til å snakke morsmålet sitt på skolen. Barna til reindriftssamer bodde vanligvis på internat og kom bare hjem til familien i helger og i ferier. **(6)** ..... ble de ofte mer påvirket av norsk enn av samisk språk og kultur. Samisk er rikt på ord som brukes i forbindelse med jakt og fisk, eller i beskrivelse av naturen, **(7)** ..... norsk ofte mangler ord og uttrykk for dette. Fram til 1950- 60-tallet ble samisk kultur sett på som mindreverdig **(8)** ..... til norsk kultur,

og den offisielle politikken hadde som mål å assimilere samene i det norske samfunnet. Etter hvert forandret den norske politikken overfor samene seg. Samenes **(9)** ..... ble nå sett på som verdifull, og samisk språk fikk høyere status. Myndighetene satte i gang tiltak som skulle gjøre det lettere for samene å bevare sin kultur. I 1985 ble grunnloven endret. Det ble da bestemt at samiske barn skulle få undervisning i og på samisk fram til ungdomsskolen. Når de kom på ungdomsskolen, kunne barna velge **(10)** ..... å fortsette med samisk som opplæringsspråk, eller gå over til norsk. På 1990-tallet ble samisk godkjent som offisielt språk ved siden av norsk i en del kommuner i Troms og Finnmark.

(1) på, for, **i**, om
(2) **Etter at**, Etterpå, Etter, Etter hvert
(3) **selv om**, fordi, slik at, derfor
(4) de, det, **den**, dette
(5) **forbudt**, tilbudt, ønsket, avbrutt
(6) I tilfelle, På grunn av, **Dermed**, Dersom
(7) **mens**, kanskje, kan, også
(8) ved siden, i forbindelse, **i forhold**, sammenlignet
(9) kulturen, kulturer, kulturene, **kultur**
(10) både, **enten**, verken, for

Samisk **(11)** ..... den finsk-ugriske språkfamilien, og det finnes også ulike varianter av samisk. Mens nordsamisk og lulesamisk lenge har hatt skriftspråk, fikk sørsamisk skriftspråk først i 1978. Og mens nordsamisk språk og kultur nyter stor prestisje i dagens samfunn, føler sørsamene at deres språk og kultur **(12)** ..... for å bli utryddet. Universitetet i Tromsø har hovedansvar for å ta vare på samiske interesser i utdanning og forskning, mens NTNU i Trondheim samarbeider med UiT når det gjelder forsking på sørsamisk språk og kultur. Utviklingen av fornorskningspolitikken skjedde **(13)** ..... at de samiske områdene ble mer interessante for det norske storsamfunnet. Mens samene stort sett hadde Norge for seg selv før 1700, begynte nordmenn etter hvert å fatte interesse for å bosette **(14)** ..... i disse områdene. Kulturen og væremåten til samene har vært nært knyttet til naturen, og for dem har det vært viktig å ikke etterlate seg spor eller ødelegge ting i naturen. For nordmenn var det **(15)** ..... viktig å dyrke jorda og utnytte den uten tanke på hva som var best for naturen. I dag er de fleste samene i Norge bofaste **(16)** ..... de driver med reindrift. Norge er inndelt i reinbeiteområder, og bare samer har rett til å drive reindrift.

Det er en bruksrett som gjelder uavhengig av hvem som eier jorda. Omtrent 40 prosent av Norges areal utnyttes som beite for rein **(17)** ..... av dette ligger i Finnmark. Det har flere ganger **(18)** ..... konflikter mellom samenes bruksrett til jord og nordmenns eiendomsrett. Planene om utbygging av Alta-Kautokeino-vassdraget mot slutten av 1970-tallet førte til en sterk mobilisering blant samer og naturvernere. Etter hvert utviklet dette seg til den største miljøaksjonen i Norge noensinne. **(19)** ..... for store protester bestemte Stortinget at vassdraget skulle **(20)** ..... ut for å gi vannkraft til befolkninga i Nord-Norge. **(21)** .....dette kom den norske minoritetspolitikken i søkelyset. Det ble satt ned to utvalg som skulle se på samenes situasjon og rettigheter. I oktober 1989 ble Sametinget i Karasjok åpnet, og samene fikk anerkjent en rekke rettigheter.

(11) **tilhører**, hører på, utfører, fører til

(12) farlig, **står i fare**, forventes, bekymret

(13) **samtidig med**, med mindre, uansett, plutselig

(14) sin, det, **seg**, deres

(15) mens, dermed, motsatte, **derimot**

(16) **selv om**, dersom, derfor, også

(17) Flere, De fleste, Mer, **Det meste**

(18) **oppstått**, kommet med, opplevd, hatt

(19) På grunn, Kanskje, **Til tross**, Alt

(20) bygge, **bygges**, bygger, bygg

(21) **I forbindelse med**, I motsetning til, Til gjengjeld, På tross av

Appendix 4: English Proficiency Test

The English proficiency test used in the study is presented below. As previously referenced in chapter 5.3, this English language assessment was a shortened adaptation of the Oxford Placement Test (OPT). Participants were required to select the most suitable option from four choices to fill in the gaps coherently and maintain the logical flow of the narrative.

The Stars

There are millions of stars in the sky. If you look **(1)** ..... the sky on a clear night, it is possible to see about 3000 stars. They look small, but they are really **(2)** ..... big hot balls of burning gas. Some of them are huge, but others are much smaller, like our planet Earth. The biggest stars are very bright, but they only live for a short time. Every day new stars **(3)** ..... born and old stars die. All the stars are very far away. The light from the nearest star takes more **(4)** ..... four years to reach Earth. Hundreds of years ago, people **(5)** ..... stars, like the North star, to know which direction to travel in. Today you can still see that star.

(1) **at**, up, on
(2) **very**, too, much
(3) is, be, **are**
(4) that, of, **than**
(5) use, **used**, using

Good smiles ahead for young teeth

Older Britons are the worst in Europe when it comes to keeping their teeth. But British youngsters **(1)** ..... more to smile about because **(2)** ..... teeth are among the best. Almost 80% of Britons over 65 have lost all or some **(3)** ..... their teeth according to a World Health Organisation survey. Eating too **(4)** ..... sugar is part of the problem. Among **(5)** ..... , 12-year olds have on average only three missing, decayed or filled teeth.

(1) getting, got, **have**, having

(2) **their**, his, them, theirs

(3) from, **of**, among, between

(4) **much**, lot, many, deal

(5) person, people, **children**, family

Christopher Columbus and the New World

On August 3, 1492, Christopher Columbus set sail from Spain to find a new route to India, China and Japan. At this time most people thought you would fall off the edge of the world if you sailed too far. Yet sailors such as Columbus had seen how a ship appeared to get lower and lower on the horizon as it sailed away. For Columbus this **(1)** ..... that the world was round. He **(2)** ..... to his men about the distance travelled each day. He did not want them to think that he did not **(3)** ..... exactly where they were going. **(4)** ..... , on October 12, 1492, Columbus and his men landed on a small island he named San Salvador. Columbus believed he was in Asia, **(5)** ..... he was actually in the Caribbean.

(1) made, pointed, was, **proved**

(2) lied, **told**, cheated, asked

(3) find, **know**, think, expect

(4) Next, Secondly, **Finally**, Once

(5) as, **but**, because, if

Clocks

The clock was the first complex mechanical machinery to enter the home, **(1)** ..... it was too expensive for the **(2)** ..... person until the 19th century, when **(3)** ..... production techniques lowered the price. Watches were also developed, but they **(4)** ..... luxury items until 1868 when the first cheap pocket watch was designed in Switzerland. Watches later became **(5)** ..... available and Switzerland became the world's leading watch manufacturing centre for the next 100 years.

(1) despite, **although**, otherwise, average

(2) **average**, medium, general, common

(3) vast, large, wide, **mass**

(4) lasted, endured, kept, **remained**

(5) mostly, chiefly, greatly, **widely**

Dublin City Walks

What better way of getting to know a new city than by walking around it? Whether you choose the Medieval Walk, which will **(1)** ..... you to the Dublin of 1000 years ago, find out about the more **(2)** ..... history of the city on the Eighteenth Century Walk, or meet the ghosts of Dublin's many writers on the Literary Walk, we know you will enjoy the experience. Dublin City Walks **(3)** ..... twice daily. Meet your guide at 10.30 a.m. or 2.30 p.m. at the Tourist Information Office. No advance **(4)** ..... is necessary. Special **(5)** ..... are available for families, children and parties of more than ten people.

(1) **introduce**, present, move, show

(2) near, late, **recent**, close

(3) **take place**, occur, work, function

(4) paying, reserving, warning, **booking**

(5) funds, costs, fees, **rates**