

The Acquisition of English Prepositions

by Norwegian L2 Learners

- a corpus-based error analysis



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Abstract

Denne masteroppgaven tar for seg engelsk som andrespråk, og utforsker norske 15- og 16-åringers preposisjonsfeil i skriftlig engelsk. Datamaterialet er hentet fra det digitale korpuset CORYL, hvor det har blitt samlet inn tekster som har blitt annotert for ulike typer grammatikkfeil. Jeg har brukt feilanalyse som metodisk rammeverk, og har fokusert på følgende to problemstillinger i arbeidet:

1. Er det gitte syntaktiske og/eller semantiske underkategorier av preposisjoner som er mer problematiske enn andre?
2. Hvordan kan man forklare feilene observert i datamaterialet?

I forbindelse med den første problemstillingen, indikerer min analyse at elevene oftere gjør feil med enkelte kategorier innenfor syntaks og semantikk enn andre. I forbindelse med den andre problemstillingen, indikerer min analyse at de aller fleste preposisjonsfeil kan spores tilbake til kognitive aspekter ved morsmålet. Det er imidlertid også bevis for at elevene påvirkes av andre trekk i engelsk som de har tilegnet seg.

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Abbreviations

CORYL – Corpus of Young Learner Language

IL – Interlanguage

IP THEORY – Input Processing Theory

LAD – Language Acquisition Device

L1 – First Language

L2 – Second Language

PP – Prepositional Phrases

SLA – Second Language Acquisition

UG – Universal Grammar

1. Introduction

Second language acquisition (SLA) is a branch of research that has attracted much attention from scholars over the years. Researchers have sought to explain a variety of aspects related to the process of acquisition and so, numerous theoretical frameworks and methodological approaches have been developed and applied in order to do so. In the present study, my aim is to contribute to the understanding of the acquisition of a particularly complex and challenging category in English, namely prepositions. As a native speaker of Norwegian and fairly advanced speaker of English as a second language (L2), I am repeatedly fascinated by this small group of words and how they seem to encode so much of our most basic perception of the world around us. My fascination and curiosity as to why they are so challenging to acquire in L2 is what inspired the present project. In the forthcoming chapters, I investigate the following two research questions:

1. Are there certain syntactic and/or semantic subgroups of prepositions that are more prone to non-target usage than others?
2. How can we best understand and explain the patterns observed in non-target usage of prepositions by Norwegian learners? What mechanisms are involved in the decisions they make in L2?

In chapter 2, in order to situate the present study in the larger context of SLA research, I provide an overview of relevant theories and models that offer insight to different aspects of the SLA process. In chapter 3, I present and discuss the category of English prepositions. I present the theoretical approach to prepositions adopted here as well as implications for syntactic analysis. I give an outline of the syntactic and semantic characteristics of prepositions as well as some previous research on the acquisition of prepositions. In chapter 4, I present the Corpus of Young Learner Language (CORYL) from which the data sample is collected. Furthermore, I present the methodological

framework of *Error Analysis*, and how it has been applied to address my two research questions. In the first part of chapter 5, I present my analysis and discuss the data with reference to the research questions, before in the second part, I discuss the most prevalent mechanisms in the data sample and connect my findings to current theory and debates in SLA research. Chapter 6 sums up my main findings and provides an outlook.

2. Theoretical background

Although SLA is a relatively new branch of research, it has grown significantly over the last few decades. Consequently, a number of theories and models have developed, attempting to account for essential findings and serving as framework for further hypotheses and testing. Different theoretical approaches have traditionally emphasized different aspects of the acquisition process. Some have focused on the influence of social and cultural factors, some on universal and/or language-specific determinants and the influence of a Language Acquisition Device (LAD). Yet others have employed a functionalist/cognitive framework for analysis. Due to this, I have included models from different theoretical backgrounds that can shed light on different aspects of the data in this study. Some of the theoretical frameworks are still prominent in the field, whereas others have largely been disregarded.

In 2.1, I present two pioneering theories of SLA that have had significant impact on the field. Although most features within these theories later have been disregarded, they have been central in establishing SLA as a research discipline. The issues, questions and hypotheses put forth in them are still valid in the contemporary debate and so they are still relevant. In section 2.2, I have made a selection of contemporary theoretical approaches and models that can provide accounts relevant for this study with particular emphasis on cognitive aspects of language acquisition. The theories and their relevance for the acquisition of prepositions will be discussed in more detail in chapter 5.

2.1 Early theories and models in SLA

2.1.1 Behaviorism

Behaviorism is originally a theory within psychology that essentially seeks to explain human behavior. Behaviorism holds that language is a learned skill and habit, and that it is acquired in much the same way as other skills (Bohannon & Bonvillian 2013:193).

Language acquisition occurs when we are exposed to external stimuli, which over time causes automatic responses. Moreover, when we are exposed to a word in combination with an experience of its meaning, or associated meanings, this gradually causes automatic responses in us similar to the actual experience connected to the word.

According to behaviorist models, language is a skill and a habit that is reinforced, shaped and changed by the *external* linguistic environment alone. To explain change in language behavior, the theory introduces the concept of operant conditioning with reinforcement and punishment as triggers of change. It is believed that humans, like animals, are more likely to continue a (verbal) behavior that receives positive feedback from the environment and the reverse if the feedback is negative (VanPatten & Williams 2015:19). The degree to which a language learner succeeds, depends on how well he can imitate the linguistic environment around him. Following from this, the environment is the most important factor in all language learning whereas internal, mental processes are largely excluded (VanPatten & Williams 2015:18–9). SLA is believed to occur in a similar fashion. Language behavior is facilitated or impeded primarily by reinforcement from the linguistic environment. A crucial difference from child language acquisition, however, is that a set of behaviors/habits is already acquired and so these must be overcome in order to be successful in L2. Thus, one must adapt to a new set of habits.

Transfer is an essential component in the Behaviorist model of SLA. In the case of positive transfer, learners successfully apply already acquired habits in their native language (L1) in the production of L2 structures, as these structures are the same in the target and native language. Negative transfer, on the other hand, occurs when learners are “disturbed” by the habits of their L1 into producing erroneous L2 language. That is, learners automatically and unconsciously produce words and grammatical structures that do not belong within the realm of the target language, out of habits formed in their native language (VanPatten & Williams 2015:19–21). Lado (1957) proposed a model for predicting which features of the L2 would be difficult to acquire, based on a structural comparison. He hypothesized that the features that are similar would be easily acquired whereas the areas that differ from L1 would be more challenging for learners.

2.1.2 Monitor theory

During the 1960s and 70s, there was widespread rejection of the behaviorist account of second language acquisition due to evidence from first and second language acquisition research. First and foremost, the process of language acquisition was evidently far more complex than what was proposed by behaviorist accounts. Investigations of child language production strongly suggested that analogy and imitation played minor roles in the development of language compared to other far more complex mechanisms. One significant finding in this regard was that children produce *novel* constructions during the course of language acquisition and that there is a predictable path in which inflectional morphology is acquired in English (Brown 1973). Furthermore, L2 learners, adults and children, evidently follow the same patterns as child L1 learners (Dulay & Burt 1974) and (Bailey, Madden and Krashen 1974). These findings were considered evidence that linguistic competence reach beyond input from the external linguistic environment and so contributed to the rejection of the behaviorist view of language acquisition. Inspired among other things by the findings that there is a predictable path in which aspects of language develop, it was suggested that humans come to the task of learning a language with some innate knowledge about language that guides the learning process (VanPatten & Williams 2015:23).

Krashen's *Monitor Theory* was one of the earliest theories that, unlike behaviorism, provided a comprehensive framework to account for SLA specifically. In this theory it is held that some linguistic knowledge must stem from other factors than external input. In accordance with Chomsky's theory of language (see section 2.2.1 below) Monitor Theory suggests that a significant amount of this knowledge must be part of our biological endowment and so must be present from before we have been exposed to input. Consequently, children need only be exposed to language so that this knowledge is triggered. Language acquisition is believed to take place as an interaction between meaningful input as well as the linguistic information underlying this input and the innate language faculty present in all humans (VanPatten & Williams 2015:24–5).

One of the most fundamental elements in Monitor Theory is the distinction between *learning* and *acquisition*, which are seen as two distinct ways of gaining and storing knowledge about language. Acquired knowledge is believed to occur outside of awareness and is what learners rely on in spontaneous speech production. As the

knowledge is acquired in a natural setting and outside of awareness, production is largely based on intuitive feel rather than conscious knowledge about the underlying rules (Krashen 1981:1) Learning, on the other hand, typically takes place in more formal, instructive settings where the structure and rules of a language are taught explicitly so that language users become aware of them. Monitor Theory holds that these two types of linguistic knowledge are stored separately in the brain and can never interact, that is, language users may know the structure and rules of a language but nevertheless violate them in spontaneous speech production just as language users may produce spontaneous speech based on rules that they are not aware of (Krashen 1981:1–2). In this account of SLA, learned knowledge functions as a *monitor* useful to edit spontaneous production whenever time is sufficient (Krashen 1981:2–3).

SLA research has provided evidence that learners acquire grammatical morphemes such *-ing*, *-ed*, *-s* in sequences and that they seem to pass through stages in the development of e.g. questions and negation. These findings constitute the evidence for the *natural order hypothesis*. Monitor Theory holds that these regularities occur because language learning is constrained by an innate language acquisition device that operates on linguistic input. These ideas will be addressed further in section 2.2 below (VanPatten & Williams 2015:26).

2.2 Contemporary theories and models

2.2.1 Generative approaches

The overall theoretical framework of Monitor Theory has as mentioned been disregarded due to severe shortcomings (VanPatten & Williams 2015:31). However, features of the framework have inspired further research in the field and continue to influence the contemporary theoretical landscape. The notion of innateness and the existence of the LAD are still among the most prominent features in contemporary generative accounts of SLA. The most central question in this regard has been how language users come know more than what can be deduced from input and how it is possible for all normally developing children to become fully competent native speakers of a language in such a brief period of time with such insufficient input. Generative approaches explain this *learnability problem* by claiming that there must be some innate

principles already there to assist the acquisition process by constraining and guiding these hypotheses in certain ways (White 2015:38).

Generative accounts of SLA provide descriptions of the competence that non-native speakers have in L2. Based on the hypothesis proposed by Corder (1981) that L2 learners have their own developing systems and rules at any given stage in the acquisition process, Selinker (1972) introduced the term *Interlanguage* (IL) to describe this system. Within generative approaches to SLA it is held that the system that learners have at any given stage in the L2 acquisition process is best understood as an unconscious, mental representation of grammar in much the same sense as a native speaker's grammar. What varies within the generative tradition is the role and influence of the L1 and the nature of the access to Universal Grammar (UG) in SLA (White 2015:39–40).

Although aspects vary from one version of generative grammar to another, some features are shared between most of them e.g. the theory of Universal Grammar with its *principles* and *parameters*. In this theoretical framework, innate and universal principles are believed to constrain the form of grammars and possible operations on linguistic rules in all languages (White 2015:38). Thus, these principles put restrictions on what knowledge learners need to acquire and guarantee the avoidance of certain analyses of linguistic data (White 2015:42). *Parameters* account for and explain the differences between languages (Chomsky 2015:22). Parameters are encoded in UG and have given parametric values, metaphorically depicted as “switches”, that are gradually set through exposure to linguistic input: “In other words, the input determines the choice between parameter values made available by UG” (White 2015:38). In the case of L2, the most common assumption is that UG principles are still available and that learners hypothesize that the parameter settings in L1 will also work in L2 unless there is compelling evidence to the contrary. Thus, the initial hypothesis of learners is different in L2 than in L1. Learners initially transfer the choices, i.e. parameter settings, established in acquiring L1, which are made available by UG (Smith 1996:75). These parameters that have different values in the native language and the target language need to be reset. When they have been reset the learner's representation of grammar in the L2 should reflect the parametric value of the target language (White 2015:42).

2.2.2 Usage-based approaches

Usage-based accounts of SLA aim to explain how language is represented in the minds of speakers. Contrary to generative accounts that have largely proclaimed the autonomy of grammatical structures, usage-based approaches are primarily concerned with language as communicating *meaning* (Langacker 2000:1). Knowledge of language is believed to originate in exposure to input and language in use. Rules and patterns are thus deduced from this input. In this view, there is no innate knowledge of language; rather, language is acquired through general cognitive abilities that are not unique to language (Langacker 1987:13). The basic claim in usage-based (or cognitive-functional) accounts of SLA is that language is represented in the human mind as a set of constructions that vary in complexity from simple words paired with their meanings and functions to complex syntactic constructions:

... when human beings use symbols to communicate with one another, stringing them together into sequences, patterns of use emerge and become consolidated into grammatical constructions, for example the English passive construction ... a plausible way to think of mature linguistic competence, then, is as a structured inventory of constructions, some of which are similar to many others and so reside in a more core-like center, and others of which connect to very few other constructions ... and so reside more to the periphery (Tomasello 2003:6).

These constructions are form-meaning mappings gained through engagement in the linguistic community in which they are used and conventionalized. Hence, the linguistic competence of L2 learners emerges and develops as a result of recognizing and storing frequent patterns from linguistic input based on form-meaning mappings (Ellis & Wulff 2015:75–6).

Constructions that learners frequently have been exposed to, are processed before more rare constructions. When a speaker notices a word in the input for the first time, the features that make up the word are stored as a unitary representation (Ellis & Wulff 2015:77). Furthermore, when they are exposed to a piece of information, unconscious processes work out the most probable interpretation based on frequency, e.g. upon repeatedly experiencing the spoken string of sounds /wʌn/ being used to express the meaning of the word *one*. In time, our minds conclude that the probability that this refers to the word *one* is more likely than to *won*, as this combination of sounds

are more frequently used to denote the former than the latter. Thus, the human mind comes to expect certain interpretations of ambiguous language data based on experience and frequency (Ellis & Wulff 2015:77–8).

Cognitive operations take place as soon as the learner is exposed to new pieces of information in the target language. Consequently, the smaller features of a new word present in the input are stored in mind with a particular meaning/function. A detector is established for this particular word, which function is to give a signal whenever this particular word is present in the input. When a sound or combination of sounds is sufficiently similar to what is stored, the detector will be activated increasing its resting level. Each time the detector is activated the resting level increases. The higher the resting level, the less it takes to activate the detector the next time. The elements that occur most frequently have the highest resting levels and so these are most easily activated. The relative strength between connections in the brain is established in the same manner. Every time /wʌn/ is used to denote *one, won, won(-derland)* etc, the connection between the form and its meaning is strengthened (Ellis & Wulff 2015:77–8). It is believed that these processes are what qualify language users to be rational in their interpretations of and predictions about different aspects of language. Their language processing systems allow learners to make predictions about what they will most likely hear next, what the words used most likely will refer to, what constructions they will most likely utter themselves, etc. These predictions are most successful when frequency, recency and the context of the constructions are considered (Ellis & Wulff 2015:78–9).

The linguistic constructions we have stored in our minds are meaningful linguistic symbols that come in many different versions and vary in how abstract they are (Tomasello 2003:6). Some are memorized in their entirety, i.e. they are rote learned, whereas others are abstracted from frequently occurring patterns in the input. These are more open in scope, abstract and generative like the greeting pattern (“Good” + time of day) providing examples like: *Good morning* and *good evening*. Usage-based theories are interested in how learners of language abstract these productive patterns through numerous examples in the input and how they eventually are able to produce novel sentences based on them (Ellis & Wulff 2015:79).

Research in cognitive psychology has revealed that human beings make sense of the world largely by observing and making generalizations and categorizations based on numerous examples and patterns observed. This is how we recognize some members of a category to be more typical than others. A *cognitive prototype* is formed when a certain concept is frequently observed with certain features. The members that occur with these particular features then become the “typical member” and all others that occur less frequently become subtypes. We classify and categorize all kinds of information by implicitly analyzing the frequency of concepts and their features in this way. This is how we abstract general patterns out of frequently occurring constructions in language input. The relative strength of the constructions depends on our classification of them as prototypes or subtypes (Ellis & Wulff 2015:79–80).

Categories established and used in linguistic analysis merely serve to explain and describe emergent patterns in language. Word class and syntactic function describe how language behaves but do not affect the actual processes. Thus, linguistic categories are not taken as starting point for analyzing what knowledge learners have. Rather, they examine how the regularities of language are a result of the learner’s perception, cognition, motor control and social function, as we shall see in section 2.2.2.1 below (Ellis & Wulff 2015:81).

In the initial state, the human neural apparatus is highly plastic. However, it quickly responds and adapts to input patterns in the ways described above. During the course of the first years of life the human learning mechanism is tuned and committed to the L1 in such a way that it is no longer plastic, and so, the human brain is shaped by experience. This accounts for the observed fact that all normally developing humans are successful in acquiring L1 whereas SLA outcome is variable. As opposed to L1, not all *input* available of the target language becomes *intake* in L2 (Corder 1981:8–9). The proposed explanation is that L2 learner’s neural apparatus has been shaped by the L1 in such a way that it guides and restricts the kinds of hypotheses and analyses that learners make in the acquisition of a second language (Ellis & Wulff 2015:81–2).

2.2.2.1 Cognitive Linguistics

As stated above, the cognitive approach to linguistics seeks to explain language phenomena in terms of general cognitive abilities and processes, and in terms of what is known about the mind and brain from other cognitive disciplines (Evans 2011:71). There are some central ideas that make up the cognitive linguistic “worldview”: the *thesis of embodied cognition* states that reality is not objective but species-specific (Evans 2011:73). “Reality” is construed relative to our embodied experience, that is, the concepts we know and have access to are grounded in representations that in turn stem from our embodied experience of the world. One example of how embodiment affects our experience is in color perception. The human visual system has three different color channels. This affects the ability to perceive nuances of colors as we only have a limited spectrum of colors available to us via these three channels. Hence, the biologically designed visual apparatus of humans limits and determines what we can experience visually (Evans 2011:73–4).

Furthermore, the *thesis of encyclopedic semantics* is fundamental in cognitive linguistics and states that, although the exact nature of the relationship varies from one model to another, semantic representations in linguistic systems are closely related to representations in the human conceptual system (Evans 2011:75). Moreover, conceptual structure is believed to be an encyclopedia-like network of acquired knowledge about different lexical items. The lexical item *red* can serve as an illustrative example. There are a number of potential interpretations and nuances of meaning related to this word depending on the context in which it occurs. The exact nature of the color *red* is e.g. different when used to describe an animal than when used to describe the color of ink. All the different interpretations available to us are believed to be instances of our “encyclopedic set of mental representations for red” (Evans 2011:75) derived from experience. Hence, upon hearing the word, we reactivate our perceptual experiences with the word before arriving at the most relevant perceptual knowledge for this particular usage. Arriving at a lexical interpretation thus occurs as an interaction between linguistic and conceptual representations (Evans 2011:75).

Approaches within cognitive linguistics also hold that *meaning is conceptualization*. Essentially, this principle states that non-linguistic cognitive processing is involved in the formation of linguistically mediated meaning, as seen in

how non-linguistic conceptual structures are involved in arriving at the most accurate meaning of a lexical unit, as addressed above. When symbolic items are combined into units of meaning during the course of language understanding, this larger unit constitutes a meaning that is not linguistic but conceptual in nature (Evans 2011:78–9).

The principles presented above constitute some essential components in the cognitive perspective of language and have a number of implications for the view on the nature of language, the human mind and how these two interact (Evans 2011:80–1). Cognitive linguistics views language as reflecting how conceptual structures are stored and represented in the minds of speakers. Hence, our embodied experiences and how they are organized in our conceptual system are directly reflected in the language we speak. Consequently, language can also be used to study aspects of the human mind with supplementations from other cognitive sciences (Evans 2011:81).

Directly relevant to SLA research is the view that the symbolic units that language consists of, are language-specific and provide means for viewing a given situation/event/state from a range of possible perspectives available (Evans 2011:82). A language can thus linguistically encode, *construe*, the same situation in a number of ways. Following from this, our language provides us with a set of tools for construing human experience:

Concepts of “time” and “matter” are not given in substantially the same form by experience to all men but depend upon the nature of the language or languages through the use of which they have been developed (Whorf 1956:158).

Hence, these construals may vary from one language to another. There are a number of examples of this. Even when the same concept is conveyed in two languages, they can be differently construed in relation to particular contexts. This is seen e.g. in how *containment* is expressed in both English and French. While English would generally construe a scene involving a woman walking in the rain as the woman being *contained* by the rain by means of the preposition *in*, French expresses the relationship by means of *under* instead. As we shall see in section 5.5, the fact that Norwegian and English are similar regarding prepositions but occasionally construe spatial scenes differently, is essential in order to understand and explain the majority of non-target prepositions in the data sample investigated here (Evans 2011:82-3).

Furthermore, according to the cognitive linguistic framework, linguistic structures have impact on non-linguistic cognition, as the two are very much interrelated (Evans 2011:83). What this means is that linguistic structure does not only reflect conceptual structure but can also affect it; the language we speak shape how we think when we speak (Slobin 1991:23). The reasoning is that the construals of a language force its users to focus primarily on those parts of experienced reality that are encoded in the language they speak. Thus, this is at the expense of other ways of construing the same situation encoded in other languages and results in differences in conceptual structures (Slobin 1991:8).

2.2.3 Input processing in adult Second Language Acquisition

VanPatten's Input Processing Theory (IP theory) is not a comprehensive theory of SLA, but rather a model of how input is processed as to become intake (Benati 2013:93). Central questions addressed in this framework are when and under what circumstances learners make initial form-meaning connections, why these exact mappings occur and what mechanisms are involved in comprehension that might affect acquisition (VanPatten 2015:113–4). Two fundamental principles are distinguished in IP theory. First, learners are initially more concerned with the meaning of utterances than their grammatical wrapping when engaged in social interaction (VanPatten 2015:115). Second, learners assign syntactic roles largely based on the order in which messages are presented in language (VanPatten 2015:119). Consequently, learners tend to assume based on input that the first noun in a sentence is the subject (Benati 2013:94). IP theory emphasizes the importance of *form-meaning mappings* in acquisition, as a significant part of acquiring a language depends on correct interpretation of sentences. Furthermore, it is believed that these form-meaning mappings are guided by certain principles that the learners follow.

Furthermore, it is held that learners perform a step-by-step analysis of the syntactic relationships in a sentence based on the order in which the sentence elements occur. This process is referred to as *parsing* (VanPatten 2015:118). Upon hearing e.g. the noun phrase *the cat*, the learner *projects* that it is a noun phrase and, as it appears first in a sentence, that it is the subject of the sentence. If *chases the mouse* follows, the

hypothesis is confirmed. However, if *was chased by the mouse* follows, the parser has to recalculate and project a new syntactic structure. In the context of SLA, the question is what projections the parser makes when it is not fully developed. Some believe that humans possess universal parsing strategies that they employ in all language learning so that all language learners would guess that the first noun phrases in sentences are the subjects regardless of L1 background. Others believe that L2 learners make use of parsing strategies/procedures acquired in L1 (VanPatten 2015:118).

IP suggests that the *Primacy of Content Words Principle* is a strategy that L2 learners apply in the acquisition process. Learners do not start from scratch in processing information in L2. They have acquired an extensive amount of knowledge merely from observing the world and from having acquired their L1. It is held that L2 acquirers assume, based on previous experience, that the language they are learning has both content and function words. Furthermore, it is believed that the content words, lexical elements, are identified and processed prior to grammatical ones as they function as building blocks for interpretation (VanPatten 2015:115). This does not mean that they are not aware of function words but rather, that they initially ignore them because the systems are too immature to cope with them. Hence, lexical items are processed first and grammatical items later due to the maturity of their input processing skills.

Similarly, it is hypothesized that grammatical markers which encode some transparent semantic meaning, such as the past tense marker *-ed* will be processed before redundant grammatical markers such as auxiliary *do* (VanPatten 2015:117). If the grammatical marker in question is redundant and occurs with a content word that encodes more or less the same meaning, it is not processed (initially) because the learner is more focused on the content word. Hence, IP theory suggests that non-redundant grammatical markers will be processed before redundant ones, and grammatical markers with a more transparent semantic meaning before solely functional ones (VanPatten 2015:116–7).

Another principle suggested by IP is the *Event Probability Principle*. This strategy suggests that the meaning of the words involved is used to reveal what is the more likely interpretation of a given situation. Consequently, a sentence like *the cow was kicked by the horse* might cause misinterpretation due to the first noun principle. However, in the sentence *The fence was kicked by the horse*, the verb requires an

animate participant role to do the kicking, hence, the first noun cannot be the subject. Consequently, the first noun principle might be overridden by knowledge about semantic roles (VanPatten 2015:120).

2.2.4 Processability Theory

Pienemann's *Processability Theory* is specifically concerned with explaining the observation that second language acquisition develops in set stages across learners with different L1s (Pienemann 2011:3–4). The central claim is that a learner can only comprehend and produce those features of language that his language processor can handle. Thus, in order to understand second language acquisition one needs to understand how the language processor works. The processing is believed to work subconsciously and to be incremental. In addition, processing makes use of a “temporary memory store that can hold grammatical information” (Pienemann & Lenzig 2015:159–60).

Processability Theory is a framework that aims to account for universal patterns and stages in the development of any L2, as well as individual differences by means of Lexical-Functional Grammar. The idea is build on the observation that there seems to be a universal pattern with distinguished stages that learners follow in learning features of L2. Pienemann & Lenzig take question formation as an example, where the following pattern, which corresponds to L1, has been identified:

1. SVO question: *He live here?*
2. wh- + SVO: *Where he is?*
3. Copula inversion: *Where is he?*
4. Aux-second: *Where has he been?* (2015:160).

It is believed that all linguistic knowledge in L2 develops in stages such as the above, and that the linguistic competence that learners have reflects one of these stages at any given point in development. Moreover, there is some degree of leeway for learners within these stages so that hypotheses about higher levels in the hierarchy can be made. This accounts for individual differences within stages and variable outcomes in SLA. Furthermore, when learners have attempted to produce questions at a higher level

prematurely, they have ended up producing variants like: *Where he been? Where has been? Where he has been?* Here, all learners have avoided the auxiliary in second position. Consequently, avoiding auxiliary in second position seems to be a shared characteristic of learners at this point in the development. This serves to explain the “developmental problem”, that is, why learners follow universal patterns and stages in acquisition. It is because acquisition is constrained by processability (Pienemann & Lenzig 2015:160–1).

Another crucial question is how learners come to know what they know when the knowledge they have is not present in the input: the *logical problem*. *Processability Theory* states in this regard that the initial grammar in L2 is constrained by the learners’ notion of the relationship between the ideas expressed in a sentence and the way they are expressed (Pienemann & Lenzig 2015:161). When we understand and produce language, we perform matching operations within and across phrases, and our language processor checks that phrases and clauses contain the same information. This is what happens when we match a singular subject *The man* with a singular verb form *snores*. In order to perform operations like this, the learners need to have developed procedures to form phrases and combine them into sentences (Pienemann & Lenzig 2015:162). It is believed that the two phrases in this example are compared in terms of grammatical information before a conclusion is reached about their meaning. This kind of comparison of information is believed to occur at all levels of syntax in a hierarchical order presented below. This line of development is impossible to escape, as every stage is a prerequisite for the next one. Observed stages of development hence reflect the current stage of the learners’ processing skills:

1. Category procedure (e.g. adding of *-ed* to a verb)
2. Noun phrase (e.g. plurality *two kids*)
3. Verb phrase (e.g. relocating an adverb from within the verb phrase to initial position)
4. Sentence procedure (subject-verb agreement)
5. Subordinate clause procedures (Pienemann & Lenzig 2015:163).

The processability hierarchy presented above is reflected in the process of grammatical transfer and feature unification. In order to unify elements, learners must first match all entries in their mental lexicons with the relevant features in the target language, e.g.

John needs to be assigned the category noun and proper noun and the number singular. This must be done before the learners are able to match *John* with the right tense of the verb *sneeze* to achieve concord, which is higher up in the processing hierarchy. The lexical entries for each feature are then transferred to the noun phrase and the verb phrase procedure from which they are passed on to the sentence, where they are matched and concord is established (Pienemann & Lenzig 2015:165). The processability hierarchy is believed to be universal and to apply to information transfer across different syntactic levels in any language. One implication of this view is that grammatical information is stored with lexical features in the mental lexicon; learners develop a lexically driven grammar (Pienemann & Lenzig 2015:165–6).

In this chapter my aim has been to give a general overview of the contemporary theoretical landscape of SLA research. I have surveyed two early theories of SLA, *Behaviorism* and *Monitor Theory*, which have been pioneering in establishing SLA as a research discipline. I have presented SLA research within two broad theoretical traditions that largely differ in their approach to the field: *generative* and *usage-based* accounts. I have also presented three theories of language and language learning, which provide valuable insight and explanations for different trends in the data sample investigated here.

In chapter 5 in connection with the analysis and discussion of the data, I predominantly commit to the usage-based cognitive framework presented above. This is because the sample suggests that the overall majority of non-target production of prepositions can be traced to semantic/conceptual rather than structural features. Moreover, the cognitive framework and the concept of *conceptual transfer*, which will be presented and discussed extensively in chapter 5, can contribute with convincing explanations for many of the trends observed in the data sample. I have also included IP theory and Processability Theory as they can explain other aspects of the data.

3. Target structure

3.1 Prepositions and prepositional phrases in English

The theories and models presented in chapter 2 seek to account for how language is represented in the minds of speakers, how it is acquired and central processes in the development. In the present study, the focus is on a subset of what learners must acquire, namely the grammatical category of prepositions. In the following chapter, I provide an overview of prepositions in English.

In section 3.1.1, I present and discuss the definition and approach to prepositions generally held by generative frameworks of grammar, more specifically the one presented in Huddleston and Pullum (2002), which is adopted in this study. In 3.1.2 I present a general overview of the internal and external syntax of prepositions within the generative framework and present the major syntactic categories most relevant to the present study more extensively. Furthermore, in section 3.1.3, I give an account of the semantic aspects of English prepositions. Also here, I elaborate on the semantic categories that are most relevant in relation to the data sample in more detail than the others. Besides laying the foundation for the syntactic and semantic categories used in connection with the analysis, this chapter also aims to show that acquiring the syntactic structure and function as well as the semantic meaning of prepositions in English is a complex task.

3.1.1 Defining prepositions

There are different approaches to and definitions of prepositions depending on theoretical tradition. In this study, I have adopted a definition that allows for inclusion of a broader range of elements than in traditional grammars. According to generative approaches to grammar, prepositions *head* prepositional phrases (PPs) that take various kinds of dependents. The reasoning is among other things that prepositions can take modifiers that are also found in noun, verb and adjective phrases e.g. *two years after*

their divorce and *very much in control*. *Two years* are also found in adjective phrases as in: *two years old*, and *very much* in noun phrases as in *very much a leader* (Huddleston & Pullum 2002:599). Moreover, prepositions take several other constructions as complements in addition to the most typical case, i.e. noun phrases, e.g. adverb phrases, adjective phrases or interrogative clauses. In addition, one PP may be embedded within another just like noun phrases and clauses.

Different prepositions, like nouns, verbs and adjectives, license different types of complements. The typical preposition takes a noun phrase as complement *in the garden* and *to Paris*. The noun phrases *the garden* and *Paris* above, are objects, and so the prepositions *in* and *to* are transitive. The transitive preposition *in* above can also be intransitive, i.e. be used without an object, in examples like: *she stayed in*. Moreover, the distinction in clause structure between predicative complement and object applies also to PP structure. The typical preposition that licenses a predicative complement is *as*. (1) is an example of a PP functioning as predicative complement:

(1) I regard their behavior as outrageous (Huddleston & Pullum 2002:636)

Here, *outrageous* has a predicative function with *him* as predicand (Huddleston & Pullum 2002:599). In the complement use, the preposition *as* is selected by the verb *regard* (Huddleston & Pullum 2002:637). As previously mentioned, the definition of prepositions adopted here includes a broader spectrum of words than the traditional definition. Although most traditional grammars accept that certain prepositions can take the various complements mentioned above, they do not allow declarative content clauses, in which case the words that are otherwise considered prepositions are labeled markers of subordination, i.e. subordinating conjunctions as in (2):

(2) It depends on whether he saw her (Huddleston & Pullum 2002:600).

Furthermore, traditional grammar does not allow prepositions to occur without a complement as with *in* above. Instead of intransitive prepositions, these instances are considered adverbs (Huddleston & Pullum 2002:600). However, all of the instances that traditional grammar label subordinating conjunctions, such as (2) above, are here

labeled prepositions and seen as heading the constructions in which they figure, except *whether*, *if* when used for *whether* and *that* when introducing a subordinate clause. Furthermore, as prepositions are considered heads similarly to nouns, verbs and adjectives, there is no reason to claim that they cannot occur without complements as the presence or absence of a complement does not affect the head function in either of the other phrase constructions (Huddleston & Pullum 2002:600–1).

A number of prepositions have *grammaticized uses*, which means they have no semantic content. They only serve to indicate the function of their complements:

(3) They were mourning the death of their king

(4) He was interviewed by the police (Huddleston & Pullum 2002:601)

Serving as examples of this, *of* in (3) is the head of the PP complement in a noun phrase that corresponds to the clausal equivalent *their king died*. *by* in (4) marks the element that corresponds to the subject in an equivalent active construction. Grammaticized uses are often equivalent to inflectional case functions seen in e.g. *the death of the king* versus *the king's death* (Huddleston & Pullum 2002:601). The traditional definition fits the grammaticized uses of prepositions well, as these do not take modifiers and predominantly occur with noun phrase complements. However, there are a number of prepositions that do not have grammaticized uses and those I have mentioned that do, also have non-grammaticized uses, and so the traditional definition is not sufficiently broad to encompass this entire spectrum (Huddleston & Pullum 2002:601).

Traditional grammars have pointed out that prepositions tend to precede their complements as a distinguishing factor. Although there are a few minor exceptions such as *notwithstanding*, this is indeed the case in canonical constructions. However, there are certain non-canonical constructions such as open interrogatives (5), in which the preposition is said to be stranded:

(5) Who are they doing it for? (Huddleston & Pullum 2002:627).

Here, the prepositional complement is missing from its default position after the preposition *for* but is still considered a preposition. However, the complement is to be

found in pre-nuclear position in the form of a relative clause *who* (Huddleston & Pullum 2002:626–7). Despite these exceptions, traditional prepositions in canonical constructions do always precede their complements. However, this is also true in the case of verbs, adjectives and adverbs and so, this is not to be considered a distinguishing characteristic of prepositions either (Huddleston & Pullum 2002:602).

According to the present approach, prepositions are a closed class compared to nouns, verbs and adjectives. Although some are added from time to time, they are far fewer in number and there is no freely productive morphological process for forming them. Furthermore, typical prepositions denote or originate in notions of *space*. The resulting definition of prepositions proposed by Huddleston and Pullum that is adopted here is the following: “a relatively closed grammatically distinct class of words whose most central members characteristically express spatial relations or serve to mark various syntactic functions and semantic roles” (Huddleston & Pullum 2002:603). In relation to the present study, I adopt this definition and the generative approach to prepositions because, as previously stated, this enables me to include instances of non-target prepositions in the corpus that could potentially have been disregarded if adopting the traditional definition. Consequently, as the exact working definition adopted by the corpus compilers is unknown, I adopt the definition that allows me to include as many instances as possible.

3.1.2 The internal and external structure of prepositional phrases

Some characteristics of prepositions and PPs in the generative framework have already been presented above. As we have seen, prepositions typically take noun phrase complements. In these cases the complement of the preposition is an object and so the intransitive/transitive distinction traditionally made with verbs also applies to prepositions. Some of these prepositions take obligatory complements whereas others can occur without any complement (Huddleston & Pullum 2002:635).

Prepositions may also take complements such as the following:

(6) They have lived here since before the war (Huddleston & Pullum 2002:638)

(7) Why don't you save it for later? (Huddleston & Pullum 2002:640)

In (6), the PP *before the war* is the complement of *since* and in (7) the adverb phrase *later* is the complement of the head preposition *for*. In addition to a number of complement types, PPs can also contain different types of modifiers of which only the ones in the form of PPs are relevant to our purposes here. PPs can occur as post-head modifiers within other PPs as in (8) and certain directional PPs as pre-head modifiers (9):

(8) Downstairs in the kitchen were several other guests

(9) Down under the house it was cool (Huddleston & Pullum 2002:645).

Although PPs can, as we have seen, be embedded and have functions within other PPs, they more frequently function in other constructions. In the following section I elaborate on the major constructions in which PPs occur that are present in the data sample. I will illustrate each syntactic category in terms of examples of target PPs taken from the literature. Furthermore, I provide a preview into the data sample and the analysis by illustrating each category with examples of non-target usage from the corpus. At this point, the non-target examples will not be discussed or elaborated on further as they are only meant for illustration. They will be discussed in more detail in chapters 5.

3.1.2.1 Adjunct

Adjunct is one of the major functions of PPs. As opposed to complements and the predicator, adjuncts are distinguished primarily on the basis of their semantic properties (Huddleston & Pullum 2002:215). They are distinguished from complements by the fact that they are always optional whereas complements may be obligatory (Huddleston & Pullum 2002:221) and that they are not restricted to occur with a particular kind of verb (Huddleston & Pullum 2002:219). They typically denote semantic properties having to do with the circumstances of the situation denoted by the predicator and are more loosely attached to the verb than complements (Huddleston & Pullum 2002:215). Typically, PPs functioning as adjuncts express semantic relations like location/change

of location in space (10), temporal location (11), instrument (12), etc. (Huddleston & Pullum 2002:665):

(10) He slept in the TV room

(11) I woke up at 5

(12) They opened it with a tin-opener (Huddleston & Pullum 2002:665).

Non-target usage of adjunct PPs includes examples such as (13a) and (14a) below. I have included a reference to the pupil behind each example, e.g. in (13a) p177 indicates the pupil and 10 the grad:

(13a) ... but thay had no food left on the hospital ... (p177-10)

(13b) ... but they had no food left at the hospital ...

(14a) ... well, in my point of view Macgyver can take much of the credit ... (p165-10)

(14b) ... well, from my point of view, MacGyver can take much of the credit ...

3.1.2.2 Complement/modifier in verb phrase

As complements of verbs, PPs are more closely related to the verb and more clearly distinguished by their syntactic characteristics than adjuncts. Hence, they are more central to the grammar (Huddleston & Pullum 2002:215). The most essential characteristic of a PP with this function is that it must be licensed by the verb. The clearest cases of PPs as complements of verbs occur when a particular preposition is specifically *selected* by the verb:

(15) It depends on the cost (Huddleston & Pullum 2002:220)

(16) I put it underneath the math (Huddleston & Pullum 2002:224)

Verbs like *depend* in (15) that selects a preposition are called *prepositional verbs* (Huddleston & Pullum 2002:274) and prepositions that are selected by verbs, are called *specified prepositions* (Huddleston & Pullum 2002:273). In (15), *on* is a specified preposition as it cannot be replaced by another preposition e.g. *at*, *with*, *in*, etc. as the

sentence then becomes ungrammatical. In other cases, a different preposition is not grammatically incorrect but does not correspond fully to the original meaning (Huddleston & Pullum 2002:220). The use of *on* in (15) is grammaticized, and so it does not have any independent meaning except in combination with *depends*. For this reason, it is fairly straightforward to recognize *on* as the complement of *depends* as the two entities are closely related. In (16), on the other hand, *underneath* has kept its full lexical content and is still a complement of the main verb *put*, although a less clear case (Huddleston & Pullum 2002:224). There is a finite set of prepositions that can occur with *put* as it involves the location of some entity.

Both of the PPs above are also recognized as complements, not adjuncts, by virtue of being obligatory. Furthermore, PPs may also be optional and hence function as modifiers in the verb phrase. Although the term adjunct is often used to refer to modifiers both in the clause and in the verb phrase (Huddleston & Pullum 2002:665), I have distinguished between the two in connection with the analysis of the data, and so I have included *modifier in VP* as a separate category. PPs functioning as modifiers of verbs are the largest syntactic group in the data sample, followed by adjuncts and complements of verbs.

Non-target PPs in the corpus that function as modifiers in verb phrases include examples like (17a). In (18a), the PP is a complement of the verb and in (19a) the preposition is *selected* by the prepositional verb *deal*:

(17a) My mom drove me at the party (p255-10)

(17b) My mom drove me to the party

(18a) I might be able to get at school in time (p196-10)

(18b) I might be able to get to school in time

(19a) We will deal about this later (p80-10)

(19b) We will deal with this later

3.1.2.2.1 Special verb + preposition combinations

As pointed out above, PPs can function as complements of verbs. These verb + preposition combinations can be distinctive in three ways. We have already seen that a

particular preposition may be selected by the verb rather than “being in potential contrast with other prepositions” (Huddleston & Pullum 2002:272).

(20) She put in her application

(21) I gave up the struggle (Huddleston & Pullum 2002:272).

Furthermore, the construction in (20) is different from the usual pattern in that there is a complement *in* placed between the verb and the direct object. Words that occur in this position are called particles and are mainly intransitive prepositions. (21) is also an example of a verb + preposition with a particle between the verb and the direct object. However, the combination in (21) is fossilized and forms an idiomatic expression. A number of idioms contain intransitive prepositions. In the approach adopted here, idioms that form lexical units such as (21) are not considered syntactic constituents as in traditional grammar as there is evidence that the syntactic structure in idiomatic expressions is the same as in equivalent literal interpretations. Hence, verb + preposition combinations that are traditionally labeled *phrasal verbs*, as in (21), which indicates that they are syntactic constituents that belong in the verb category, are not analyzed as such here but rather as regular verb + PP complement constructions (Huddleston & Pullum 2002:274). Fossilized verb + PP constructions are addressed and discussed in relation to the data sample in chapter 5.

3.1.2.3 Complement/modifier in noun phrase

PPs may also function as post-head internal dependents of nouns, that is, as “immediate constituents of a nominal rather than of a NP” (Huddleston & Pullum 2002:330). Internal dependents in noun phrases can have the function of either complement or modifier. The distinction between the two is essentially the same as between complements and adjuncts in verb phrases but they are not as easily distinguished syntactically. Also in noun phrase structure complements must be licensed by an appropriate head, in this case the head noun, but the distinction between obligatory/optional made in clause structure is not as relevant.

As we have seen, the verb determines the range of possible dependents it can take. In a similar fashion, with prepositional phrase complements, the head noun determines which prepositions can occur with it, e.g. the noun *journey* licenses prepositions related to motion: *the journey to Rome/from here* (Huddleston & Pullum 2002:440).

Modifiers have a similar function to that of the modifier/adjunct in verb phrases. Modifiers are not dependent on a particular kind of head to license them and they are generally more flexible in terms of position than complements (Huddleston & Pullum 2002:440–1). A number of different PPs can function as post-head modifiers, including prepositions with a noun phrase complement, with a clause as complement and temporal and locative prepositions without complements (Huddleston & Pullum 2002:446).

Also here, I have made a distinction in the analysis between PPs that occur as complements and PPs that occur as (post-head) modifiers of nouns. (22a) is an example of a PP functioning as complement of the noun *trip* and (23a) a post-head modifier of the noun *opinion*:

(22a) ... I thogt that a trip on the back would help ... (p254-10)

(22b) ... I thought that a trip to the beach would help.

(23a) Most people today have an opinion on who he was (p168-10)

(23b) Most people today have an opinion about who he was

3.1.2.4 Complement and modifier in adjective phrase

PPs also occur as complements in adjective phrases, for the most part as optional but occasionally also as obligatory complements. Also here, the complement is regarded obligatory if its omission results in an unsystematic change in meaning. Phrases of this kind qualify as complements in that the preposition is licensed by the head adjective, e.g. *He was afraid of dogs* (Huddleston & Pullum 2002:542) However, as with nouns, complements of adjectives cannot be distinguished from modifiers by determining whether they are optional or obligatory. There are a number of different constructions where adjectives license a particular preposition, e.g. an adjective + *about*: *annoyed about, concerned about, mad about*, etc. and adjective + *at*: *pleased at, good at*,

hopeless at, etc. (Huddleston & Pullum 2002:543). Modifiers of adjectives with the form of PPs are most frequently found in post-head position, e.g. *clear in his mind*, *dangerous in the extreme*, *deaf in both ears*, etc. (Huddleston & Pullum 2002:550).

(24a) is an example of a PP functioning as complement of the adjective *carved* (note, however, that (24a) is ambiguous between an adjective phrase and a passive construction). (25a), is an example of a PP modifying the adjective *angry*.

(24a) The troll is carved of stone (p80-10)

(24b) The troll is carved in stone

(25a) He is so angree on Peter (p98-10)

(25b) He is so angry with Peter ...

3.1.3 The semantics of prepositions

In this section, I give an outline of the semantics of English prepositions in terms of typically distinguished categories. Importantly, I am here interested in the basic meanings of the *prepositions* and not the range of semantic roles that *PPs* can express. As addressed briefly above, some prepositions have uses that do not express semantic content beside the function they serve in syntactic structures e.g. *by* in passive constructions. These particular uses of prepositions are grammaticized. However, prepositions in English generally express or originate in a spatial relation that has been extended through metaphorical processes into other semantic domains like *time* (Huddleston & Pullum 2002:647–8). Therefore, the main emphasis in this section and in general throughout the thesis, is on prepositions that express spatial relations. However, other senses relevant with respect to the data are also presented.

Spatial relations in English are generally expressed by means of *intrinsic* framing. That is, the position of an entity is expressed relative to another entity. Spatial relations can, however, also be framed relative to the speaker, i.e. a *deictic* frame or by using information external to both the speaker and the figure-ground scene, e.g. *north*, *south*, etc. referred to as an *absolute* frame. Although English has linguistic means to express space in terms of all these, the intrinsic frame is generally favored (Jarvis & Pavlenko 2008:142). Here, the entity that serves as the reference point is called the *landmark* and the entity that is located relative to the landmark is called the *trajector*.

Trajectors can be abstract and physical objects as well as situations such as events and states. Landmarks are typically physical objects or places in space, or metaphorical extensions of these:

(26) The pen is on the table

(27) He collapsed in the bedroom (Huddleston & Pullum 2002:648).

In (26) above, the trajector is a physical object, i.e. *the pen* whose location is specified relative to the physical landmark *the table*. In (27) on the other hand, the trajector is the event *he collapsed* and the landmark *the bedroom* (Huddleston & Pullum 2002:648).

The most common English prepositions are often highly polysemous as they are subject to metaphorical and metonymic processes. When they express other notions such as *time, reason, motive*, etc. they have been, as pointed out above, extended from the space domain through metaphorical transfer processes. This occasionally makes it a challenging task to establish dichotomies between meanings as they are closely related, and so they are often best seen as ranges of meaning rather than clear-cut categories (Quirk & Greenbaum 1985:695). However, there is common agreement that most prepositions have a central or prototypical meaning to which most other senses can be traced and it should be possible to classify senses by using “consensual and high-level ontology labels” (Saint-Dizier 2006:10–11).

Crucially, in the classification adopted here prepositions are considered in their basic senses from which numerous metaphorical usages stem. For instance, *in* in its most basic sense is used to express spatial *containment*. Furthermore, *containment* has been extended to temporal senses where *in* conceptualizes the time frame of an action/or event as a container. Both the spatial and temporal use of *in* is thus categorized as instances of prepositions denoting *location* (Saint-Dizier 2006:13–5). Below, I present a brief description of the semantic categories relevant and employed in this study as well as target examples from the literature and non-target examples from the corpus.

3.1.3.1 Location: (static) position, goal and source

As mentioned in section 3.1.3 above, most prepositions in English express some sense of spatial location, which is the source of a number of extensions into other abstract non-locative domains through metaphor and metonymy (Huddleston & Pullum 2002:651).

(28) I am at Heathrow

(29) The car is off the road (Huddleston & Pullum 2002:648).

Positive, static location as in (28) may be expressed by means of prepositions such as *on*, *in* and *at*, and *negative, static location* (29) by means of *away*, *off* and *out*. Furthermore, prepositions may express *change of location*, which involves a *source* (30) (e.g. *from* and *off*), that is, an initial location, and a *goal* (31) (e.g. *to*, *on/onto*, *in/into*).

(30) I departed from Heathrow

(31) I went to Heathrow (Huddleston & Pullum 2002:648).

In analyzing the semantic categories in connection with the first research question, I have included prepositions that express positive and negative static location in one category, whereas source and goal are separate categories. Prepositions that express either *time position* or *duration* are included as locational as they are seen as locating events in *time*. Non-target prepositions that express (static) position is the largest semantic category in the sample and include examples like (32a) below. Prepositions that denote a goal, is the second largest category with examples such as (33a). Source prepositions such as (34a) are relatively infrequent among the non-target prepositions in the corpus:

(32a) When we all, eventually was finished at the bathroom ... (p09-10)

(32b) When we ere all eventually finished in the bathroom ...

(33a) When I was going on the mall, my moped stopped (p121-10).

(33b) When I was going to the mall, my motorbike stopped.

(34a) I woke up by the phone ringing again (p196-10).

(34b) I woke up from the phone ringing again.

3.1.3.2 Prepositional meaning other than locational

In addition to the three locational groups described above, I distinguish four additional categories based on what has been found in the sample. In (35a), non-target *on* expresses *cause/reason*. I have also included (36) in the same category as it expresses *intention*, which is seen as a sub-sense of *causality* (Saint-Dizier 2006:15):

(35a) ... on the last movie the return of the king they did win 11 oscar's (p273-10).

(35b) ... They won an Oscar for the last movie, the Return of the King

(36a) When we has taken a walk to the shop for buying a coke ... (p199-10).

(36b) When we have taken a walk to the shop in order to buy a coke ...

Furthermore, I have included non-target prepositions such as (37a) in a separate category labeled *manner*:

(37a) He went home with the buss (p205-10).

(37b) He went home by bus

As there are many non-target examples with senses such as *about/regarding/with respect to* these have been included in a separate category with examples such as (38a) and (39a):

(38a) I am delighted, for your visit! (p198-10)

(38b) I am delighted about your visit!

(39a) I think they have kind of a apathetic position to the environment (p250-10).

(39b) I think they have kind of an apathetic attitude regarding the environment.

Finally, I have included non-target prepositions where I cannot detect any semantic meaning but merely grammatical functions of various kinds in the category *grammaticized prepositions*. Examples include (40a) and (41a) below:

(40a) ... the adults are more clever to hold the environment clean (p209-10)

(40b) ... the adults are better at holding the environment clean.

(41a) What a perfect start on a day (p57-10).

(41b) What a perfect start of the day.

3.2 Prepositional elements in second language acquisition

As we have seen, prepositions constitute a heterogeneous category both syntactically and semantically. Investigating prepositions as a grammatical category is thus challenging as the same preposition can be part of a number of grammatical constructions and belong within different semantic domains. In addition, prepositions can be highly transparent in terms of semantic meaning in some contexts and they can be highly grammaticized in others. Hence, most previous research on prepositions has emphasized certain features of prepositions and their semantic and syntactic characteristics rather than the category as a whole. In the following, I will present some previous studies on some syntactic and semantic features of the category of prepositions in order to situate the present study in the larger context of SLA research.

3.2.1 Syntactic features in acquisition

To my knowledge, there is not much research on L2 acquisition of structural features of prepositions and prepositional phrases in general. In exploring how syntactic features and rules of language are acquired and develop in L1 and L2, previous studies seem to mainly have focused on other areas of syntax e.g. rules of word order in non-canonical structures such as negated sentences and interrogatives, etc. Moreover, acquisition studies on prepositions seem to have been concerned primarily with semantic features. However, studies have been conducted on the use of fossilized verb + preposition constructions by L2 learners. The reason for this is that it has been hypothesized that these are hard to acquire, the idiomatic expressions particularly, as they constitute a

single meaning, which cannot be derived from their constituent parts in isolation. One study presented below investigated whether Chinese learners at different levels of proficiency would avoid fossilized two-word expressions, idiomatic and non-idiomatic, when having the choice between these or one-word equivalents (Huddleston & Pullum 2002:272).

3.2.1.1 Special verb + preposition constructions in acquisition

Liao and Fukuya (2004) found in a study of Chinese intermediate and advanced learners of English that the intermediate group preferred one-word equivalents to fossilized verb + preposition constructions e.g. *rise* versus *get up*, whereas advanced learners and native speakers preferred the two-word alternative. The authors claim, based on similar findings in similar studies of groups with different L1, that there seems to be a developmental cline from avoidance to non-avoidance among learners of English. In addition, they found that all three groups preferred literal verb + preposition constructions: *go away*, *come in*, etc. over figurative ones: *let down*, *show up*, etc. The authors reason that this is due to the semantic difficulty with the figurative expressions compared to the literal ones (Liao & Fukuya 2004). As we shall see, the data in this study indicates that this developmental cline might also apply to Norwegian learners of English, which will be further explored in the analysis in chapter 5.

3.2.2 Semantic/conceptual features in acquisition

One semantic domain of prepositions that has been studied extensively in both first and second language acquisition research is *space*. This is not surprising perhaps given that most prepositional meanings have their origin in meanings related to the space domain, as pointed out above (see section 3.1.3.1). The relationship between linguistic expressions and human perception and conceptualization of the world is central to semantic theory in general and to the acquisition of semantic systems particularly. As we are able to understand and produce language, this knowledge must be internally represented and available to us. We also make use of language among other behaviors to acquire and store knowledge about the world. Thus, in addition to linguistic knowledge, there must be some conceptual knowledge, i.e. an internal representation of

the knowledge we have acquired about the world (Pederson & Nuyts 1997:1). There are a number of views on how these two systems are interrelated but in general terms, two can be distinguished: the view that conceptualization is a result or heavily influenced by language and the view that language is primarily the result of conceptualization (Pedersen & Nuyts 1997:4–5).

In relation to L1 and L2 acquisition of spatial relations this issue has been approached by among others Piaget, who found evidence in support of the view that language is largely a product of cognition. This is because milestones in linguistic achievements tend to be preceded by the development of certain cognitive abilities. For instance, Piaget found that children develop awareness and understanding of spatial concepts and relations during the pre-verbal stage, i.e. before they have developed linguistic means to express them (Piaget 2003:9). Moreover, in cross-linguistic studies investigating the acquisition of spatial terms, it has been found that L1 and L2 acquirers from different L1 backgrounds acquiring different L2s seem to acquire expressions for the same spatial concepts starting with the notion of *containment*, followed by *support*, *vicinity* and the *front-back* axis (Hendriks 2005:117). These findings fueled the hypothesis that there are universal concepts and that these are acquired prior to specific linguistic forms (Bowerman 1989:137). These concepts are what guide the acquisition process as children start searching in linguistic material for ways to express these notions when they want to communicate (Bowerman 1989:134). We can conclude that adult L2 learners will not have to acquire this capacity anew but rather, they need to acquire how the same notions are expressed in L2 (Hendriks 2005:117). Although it seems reasonable to argue based on this that there are universal conceptual categories and that these are acquired prior to linguistic expressions, Bowerman has been pointed out that:

... in most conceptual domains there are significant options from among which languages can “choose” in structuring the categories of meanings to which words, grammatical morphemes or construction patterns are linked (Bowerman 1989:143)

Hence, although spatial expressions seem to be grounded in universal concepts, there is, as we saw in chapter 2.2.2.1, cross-linguistic variation in how these concepts are encoded linguistically (Hendriks 2005:113). What is an instance of a given spatial

relation varies from one language to another (Bowerman 1989:144–5). Furthermore, this variation reflects the corresponding flexibility of the human mind to construe perceived reality (Bowerman 1989:143). The English distinction between *in* and *on* serves as a good example. There are two ways of expressing the notion of contact in English: the trajector can be contained within a three-dimensional landmark, in which case *in* is used. The landmark can also be construed as a vertical/horizontal surface that *supports* the trajector, in which case *on* is used. This distinction is obligatory in English. In Spanish, on the other hand, *en* suffices to express all notions of contact.

Given the fact that there is considerable cross-linguistic variation in the construal of space as illustrated in the above example, it would be wrongfully simplistic to state that the development of pre-linguistic categories alone equips children to map these notions directly onto linguistic expressions of space (Bowerman 1989:149). Although certain meaning categories seem to be universal, the linguistic classifications of these are relative to different linguistic systems. Therefore, linguistic structure is not direct reflections of the structure of thought, but rather, they reflect the way different languages emphasize, select and combine different aspects of spatial relations over others from a multitude of options (Bowerman 1989:150). Hence, the task of second language learners acquiring a semantic system is to *learn* how spatial relations are construed in L2 in their own minds before mapping it onto the proper linguistic features of the L2 (Bowerman 1989:149–50). These ideas are essential in explaining the majority of non-target usage in the corpus and are therefore extensively elaborated on in the discussion of the data in chapter 5.

3.2.3 Summary

In this chapter I have presented the category of prepositions, which is the target structure in this study. I have presented the definition adopted, as well as some implications for syntactic analysis of prepositional elements within the generative framework. I have also presented some major characteristics of prepositions and PPs in English with regard to their syntactic behavior and semantic content. Furthermore, I have briefly surveyed some previous research on the L2 acquisition of structural features of English prepositions as well as some main issues and debates in the literature

on prepositional semantics in relation to SLA. As we shall see in chapter 5, both the issue of avoidance in relation to fossilized verb + PP constructions (phrasal verbs) and the debate on whether cognition primarily influences language or the other way around, is relevant with respect to the non-target preposition usage in the corpus.

4. Data and method

In the preceding chapters I have presented the relevant background against which this thesis is set. As the acquisition of prepositions is the object of study, I have presented the definition and approach to prepositions and PPs adopted here, as well as some major syntactic and semantic features of PPs that are relevant for the research questions. In this chapter, I present the methodological framework in which the present study is situated, which is employed to investigate the following two research questions:

1. Are there certain syntactic and/or semantic subgroups of prepositions that are more prone to non-target usage than others?
2. How can we best understand and explain the patterns observed in non-target usage of prepositions by Norwegian learners? What mechanisms are involved in the choices learners make in L2?

Section 4.1 is devoted to describing *error analysis*, in theoretical and practical terms, as a method for investigating learner language and SLA in general, and more specifically related to its application in this project. I also present the corpus from which the data sample is collected. I have gained the information about the process of compiling CORYL predominantly from the compilers personally and from an unpublished article written by them. As CORYL has been developed and brought to the public quite recently, there is not much information available at present. In section 4.2, I pinpoint some well-known challenges with the method and in working with IL in general.

4.1 Error analysis

Error Analysis as a methodological framework for the investigation of learner language emerged as a response to *Contrastive Analysis*, which was the predominant approach before the 1960s. Contrastive Analysis, primarily associated with Lado (1957), emerged as a result of the theoretical underpinnings of Behaviorism given in 2.1.1, i.e. that language competence consists of a set of automatized habits and that the task of an L2

learner is to develop and conform to a new set of habits. Consequently, errors made in L2 production were believed to occur due to *interference* from the habits adopted in L1 (Ellis & Barkhuizen 2005:52). This view resulted in Contrastive Analysis, which sought to predict which aspects would be problematic for L2 learners by performing a structural comparison between the target and the native language. The aim was to contribute to language teaching and research on the field (Lado 1957:8). The prediction was that those features that are similar would be acquired easily whereas the differences would be more prone to non-target use (Lado 1957:59).

However, as the behaviorist view of language acquisition was rejected, so was Contrastive Analysis, as L2 learners did not produce what it predicted and it failed to predict what learners actually produced. Hence, due to empirical and theoretical developments in SLA research, *Error Analysis* emerged as an alternative approach. Central to Error Analysis is the idea that the non-target structures learners make in L2 is a potential “window” into their mental grammar, i.e. their current linguistic competence in the language they are acquiring (Gass & Selinker 2008:102). The outcome of this current competence has variably been referred to as *interlanguage* (Selinker 1972) and *idiosyncratic dialect* (Corder 1981:15). The IL of learners is believed to consist of implicit knowledge and, based on observations in learner production, it is believed to be systematic and rule-governed in the same sense as the grammar of native speakers. Furthermore, IL is believed to pass through a series of stages over time, in which learners employ general learning strategies such as L1 transfer, over-generalization, simplification, etc. (Ellis & Barkhuizen 2005:54–5).

In practical terms, there are five distinct stages involved in performing an Error Analysis, four of which are involved in the present study and elaborated on in the sections below. The fifth stage is to evaluate the errors in terms of implications for classroom practice (Ellis & Barkhuizen 2005:57), which is not relevant for either of the research questions investigated here and has therefore been left out.

4.1.1 Collecting a data sample

The first step is to collect a sample of learner data. The data sample explored in this project is collected from CORYL, which is a digital young learner corpus compiled

with hand-written texts by Norwegian 7th and 10th grade learners of English, hosted at the University of Bergen. The corpus consists of some 130 000 words more or less evenly distributed between the two age groups. The texts were collected in connection with the National Testing of English Writing in 2004 and 2005 and are part of a larger commitment to an interdisciplinary national system for ensuring quality in education, established by the Norwegian government. The tests are designed to measure Norwegian learners' competence in general written English. The texts included in CORYL are randomly collected, manually tagged for errors and categorized according to the nature of the erroneous structures. The error categories include a number of error examples in all aspects of sentence structure from spelling and apostrophe mistakes to article and preposition use, *it/there* errors, L1 formulations, etc. The corpus hence provides insight into specific areas of the L2 that are problematic for young learners (Hasselgreen & Telstad Sundet forthcoming:1–2).

For the purpose of the present study, I have collected a sample of non-target preposition constructions from CORYL by the older age group, i.e. the 15 and 16-year-olds. The aim has been to describe and analyze their IL in depth and in detail from as many angles as possible, in order to indicate all sorts of factors that (potentially) partake in the production of non-target prepositions at this point in development. This aim made it difficult to include the younger learners for the sake of comparison, which would make an interesting and valuable extension of the present study.

The preposition category consists of 444 examples of non-target prepositions and is thus the largest error category among the learners at this age, which supported my preconceived impression that prepositions are notoriously difficult to acquire in L2. Reasons for this will be explored further in chapter 5. This fueled my curiosity as to what exactly makes it so difficult, which aspects are particularly challenging and what strategies and mechanisms are employed in the production of erroneous structures.

Ellis and Barkhuizen (2005:57) point out that it is important to bear in mind that the nature of the data sample may influence the patterns observed in it. In this case, I have investigated a *written* sample of texts where the learners have had time to “consult their monitor” (see chapter 2.1.2) and consider which preposition is the appropriate one. A data sample that stem from spontaneous speech production might generate different

patterns and provide information about different aspects of competence of language than planned writing.

4.1.2 Identifying errors

The second stage is to identify the errors in the data sample collected, which in this case has been done by the compilers of CORYL. Naturally, one of the most fundamental considerations involved at this stage is to define what is to be understood as an *error* (Ellis & Barkhuizen 2005:56). The compilers of the corpus have as far as possible restricted error annotations to *absolute* errors rather than *dispreferred* forms, as the latter inevitably involves subjective judgment. However, some degree of subjective interpretation is hard to avoid in determining the target structure attempted in certain cases and so the compilers encourage those who use CORYL to combine the tagging with their own independent judgments (Hasselgreen & Telstad Sundet forthcoming:2). In this regard, it has been pointed out that locating an error is not always straightforward as in (1) from CORYL, in which case it is clearly the preposition that is erroneous:

(1) But these things also find place at adults (p139-10).

(2) Just when I came on the gras it overturn and it was earth in the gras ... (p204-10).

However, in some cases the exact location of an error can be hard to detect, as there is more than one element that is not target-like e.g. in (2) where the verb *came* has been provided instead of *got* in addition to the wrong preposition (James 1998:93). In working with the data sample from CORYL I have relied on the annotations by the compilers, which have been carried out by a native speaker of Norwegian and have been checked by a native speaker of English (Hasselgreen & Telstad Sundet forthcoming:2). However, in certain cases I have found that the error is located in another sentence element resulting in a different target structure than a preposition, e.g. in (3) where the appropriate target structure seems to be the verb *watch* without a preposition and in (4) where the target structure is a verb in the infinitive rather than a preposition:

(3a) ... I put two slices in the toaster and went to se on TV (p127-10).

(3b) ... I put two slices in the toaster and went to watch TV.

(4a) ... I was delivered a new chair and ready for beginning the English ... (p139-10).

(4b) ... I was given a new chair and was ready to begin the English ...

Cases as the above have been left out in the analysis but are included in the total count in the category labeled “others”. I have excluded them from the analysis because, as we shall see in the next section, the categorization is based on the target structure, which in my view is not a preposition in the case of examples (3) and (4) and similar non-target structures.

(5)... ... we're out of here, in almost lightspeed, ravaging each planet ...

(6) ... find your books, page 55 and do the tasks forward to page 59.

Moreover, there are some cases where I have not been able to identify the target preposition. Examples include (5) and (6). These have also been left out in the forthcoming analysis and discussion of the data, although I have included them in the total count as well.

4.1.3 Describing errors

The aim at this stage is to identify how the IL of the learners differs from that of the target language and to approach the first research question: *Are there syntactic and semantic features of prepositions that are more prone to non-target use?* Following Ellis and Barkhuizen (2005:60), I have corrected all the non-target structures in the sample and established syntactic and semantic categories of prepositions that are *data driven*, i.e. they reflect the examples present in the data sample and are derived from a prescriptive grammar, in this case from Huddleston & Pullum (2002). I have established subgroups based on the syntactic function of the PP, e.g. adjunct, complement/modifier of verb, complement/modifier of noun, etc. as given in chapter 3.1.2, and based on the basic semantic meaning of the preposition, e.g. (static) position, source, goal, causality, etc. as given in chapter 3.1.3. The categories are established based on the target

structure rather than the actual structure that the learner has produced (Ellis & Barkhuizen 2005:60).

Furthermore, I have summarized the target structures that belong in each syntactic category in table 4.1, and the target structures that belong in each semantic category in table 4.2 below. The tables below are given here for the purpose of illustration and will be given anew and further discussed in chapter 5.2.1 and 5.2.2.

Table 4.1: Distribution of non-target prepositions in syntactic categories

Category	Frequency of errors	%
VP modifier	121	27.2
Adjunct	115	25.9
VP complement	80	18
NP post-head modifier	47	10.6
NP complement	28	6.3
Adj.P complement	18	4.1
Adj.P post-head modifier	10	2.3
Various functions	16	3.6
Others	9	2
Total	N=444	100

Table 4.2: Distribution of non-target prepositions in semantic categories

Category	Frequency of errors	%
position	159	35.8
goal	121	27.3
causality	44	9.9
aboutness	38	8.6
grammaticized prepositions	26	5.9
source	22	5
manner	14	3.2
various meanings	11	2.5
others	9	2
Total	N=444	100

The most frequent subgroups within syntax and semantics are established as separate categories. I have included occurrences of PPs with syntactic functions that are relatively infrequent in the “various functions” category e.g. PPs that occur as complements within other PPs, as complements/modifiers in adverb phrases, etc. Those where I have not been able to identify the syntactic function aimed at are included in “others”. All semantic meanings that do not fit any of the above categories are included in “others”. As the aim with the categories is to investigate which groups are more prone to non-target use, I do not extensively elaborate on the minor groups of various functions and meanings with regard to the first research question.

4.1.4 Explaining errors

Explaining the patterns in non-target usage constitutes the most important stage in Error Analysis in relation to the second research question: *How can the patterns observed in non-target usage of prepositions be explained?* Here, my aim has been to explain patterns observed in the data. In order to do so, I have analyzed the non-target prepositions in the corpus in terms of what mechanisms and strategies that seem to have caused them. Two major processes are traditionally distinguished in the literature and will be discussed further in the analysis in chapter 5. *Interlingual errors* refers to errors

that are caused by influence from the native language (Corder 1992:28). Although Ellis (2015:119) points out that the term *transfer* is somewhat problematic because of its behavioristic connotations, I adopt it here, to denote different aspects of how L1 influences the acquisition of L2. Transfer can be evident in errors but it can also be manifested in the overuse or avoidance of certain structures in L2, (Ellis 2015:119) as seen in Liao and Fukuyas' study in chapter 3.2.1.1.

When learners *systematically* use an L1 structure in their interlanguage variety, this is referred to as a case of transfer. *Borrowing*, on the other hand, involves temporary use of an L1 feature for communicative purposes (Corder 1992:28). Although there are most likely sociolinguistic factors like borrowing involved as well, these are not the main emphasis here and will only be commented on briefly if evident. Furthermore, some errors can also be explained in terms of *intralingual* processes, that is, factors that are products of general learning strategies and induced by features of L2 (Ellis & Barkhuizen 2005:65). Both of these have proven relevant in the present analysis and will therefore be addressed further in chapter 5.

In order to address the second research question, the data sample has been reorganized. In table 4.3 below, the prepositions are not differentiated according to syntactic or semantic characteristics but based on the (assumed) target preposition and all the different non-target versions of that preposition:

Table 4.3: Distribution of target and non-target prepositions

Target preposition	Occurrences	Non-target prepositions
<i>in</i>	59	<i>on</i> (30), <i>at</i> (15), <i>into</i> (3), <i>of</i> (2), <i>against</i> , <i>by</i> , <i>from</i> , <i>for</i> , <i>through</i> , <i>onto</i> , <i>to</i> , <i>with</i> , <i>i</i> (9)
<i>for</i>	47	<i>to</i> (21), <i>in</i> (14), <i>on</i> (6), <i>of</i> (2), <i>over</i> , <i>with</i> , <i>bye</i> , <i>after</i> (4)
<i>to</i>	45	<i>on</i> (19), <i>in</i> (9), <i>at</i> (5), <i>for</i> (4), <i>of</i> (2), <i>with</i> (2), <i>in to</i> (2), <i>towards/by</i> (2)
<i>at</i>	41	<i>on</i> (27), <i>in</i> (6), <i>to</i> (4), <i>into/by/of/off</i> (4)
<i>on</i>	35	<i>in</i> (12), <i>at</i> (10), <i>to</i> (7), <i>with</i> (3), <i>along/against/for</i> (3)
<i>about</i>	34	<i>for</i> (10), <i>of</i> (9), <i>on</i> (6), <i>in</i> (3), <i>to</i> (2), <i>with</i> (2), <i>off/over</i> (2)
<i>of</i>	21	<i>from</i> (5), <i>for</i> (3), <i>on</i> (3), <i>to</i> (3), <i>in</i> (2), <i>over</i> (2), <i>off/at/with</i> (3)
<i>by</i>	16	<i>with</i> (7), <i>at</i> (2), <i>in</i> (2), <i>of</i> (2), <i>from/on/about</i> (3)
<i>with</i>	12	<i>of</i> (2), <i>for</i> (2), <i>in</i> (2), <i>to</i> (2), <i>on</i> (2), <i>about</i> (2)
<i>into</i>	8	<i>in</i> (7), <i>to</i> (1)
<i>until</i>	8	<i>to</i> (6), <i>in/before</i> (2)
<i>during</i>	8	<i>in</i> (4), <i>at</i> (2), <i>under/on</i> (2)
<i>from</i>	7	<i>in</i> (5), <i>off/on</i> (2)
<i>across</i>	5	<i>over</i> (4), <i>up</i> (1)
<i>through</i>	3	<i>in</i> (3), <i>into/on/throughout</i> (3)
<i>against</i>	3	<i>with</i> (2), <i>on</i> (1)
<i>off</i>	2	<i>of/over</i> (2)
<i>above</i>	1	<i>over</i> (1)
<i>among</i>	1	<i>at</i> (1)
<i>because of</i>	1	<i>by</i> (1)
<i>below</i>	1	<i>under</i> (1)
<i>before</i>	1	<i>to</i> (1)
<i>behind</i>	1	<i>in</i> (1)

<i>down</i>	1	<i>down in</i> (1)
<i>in front of</i>	1	<i>before</i> (1)
<i>in order to</i>	1	<i>for</i> (1)
<i>look forward to</i>	1	<i>look for to</i> (1)
<i>miss out on</i>	1	<i>mis out of</i> (1)
<i>over</i>	1	<i>on</i> (1)
<i>regarding</i>	1	<i>to</i> (1)
<i>throughout</i>	1	<i>ower</i> (1)
<i>towards</i>	1	<i>against</i> (1)
<i>upstairs</i>	1	<i>up</i> (1)

Table 4.3 above summarizes all the target prepositions I have identified in the sample and the non-target uses of them. In the analysis in the next chapter I have mainly focused on the more frequent target prepositions as well as the most frequent non-target uses of them in order to be more certain that they are not arbitrary *mistakes* as a result of the fact that learners do not yet fully master the form. The aim is to reveal systematic and rule-governed *errors* and their sources, which can indicate general trends and patterns at this particular stage in development (Ellis & Barkhuizen 2005: 62–3). It is my belief that non-target structures that occur more frequently can better contribute to this goal. However, I occasionally discuss some infrequent non-target structures that are interesting for different reasons.

In the analysis of the data in relation to the second research question it is essential to keep in mind that an error can be traced to different sources and can be facilitated or impeded by a number of different factors. Consequently, I do not claim to have found the ultimate error sources in the next section; rather, I present and discuss what seem to be plausible explanations for given non-target uses and indicate different contributing factors where relevant (Ellis & Barkhuizen 2005:66).

4.2 General considerations

One weakness with categorizing learner data in terms of target language categories, as done here, is related to the view of interlanguage as systematic and rule-governed and as constituting a language, an idiosyncratic dialect, in its own right. The argument is that

by imposing target structure on learner structure this way, we fail to acknowledge that bilingual linguistic competence is different from the monolingual. Bilinguals are multi-competent language users. They have knowledge about two languages in their minds, and so the goal for second language teaching should be the fluent L2 user and not a native speaker (Cook 1991:114). In this regard, Cook states that: “L2 users have to be looked at in their own right as genuine L2 users, not as imitation native speakers” (1999:195). This problem is referred to as the *comparative fallacy* (Blev-Vroman 1983). However, by employing well-established grammatical and semantic categories my aim has been to ensure practical application and the possibility to further test results and hypotheses presented here.

Furthermore, distinguishing between absolute errors and dispreferred forms, as addressed in section 4.1.2 above, in a category such as prepositions has proven particularly challenging. Although the compilers have stated that they have taken absolute errors as starting point in tagging the corpus, prepositions are a particularly demanding category in this regard as there are often vague nuances of meaning, grammaticized uses, etc. This is further complicated by the fact that it is not always an easy task to detect from the context what the learners have intended to communicate. Thus, subjective judgment cannot be ruled out completely in the following analysis and discussion of the data sample.

5. Analysis

In the previous chapters, I have presented the relevant background for the present study in terms of theories and approaches to SLA in general. I have presented the target category investigated, English prepositions, in terms of their syntactic and semantic features as well as relevant previous research on prepositional elements in SLA. In the previous chapter, I presented the methodological framework applied in approaching the two research questions:

1. Are there certain syntactic and/or semantic subgroups of prepositions that are more prone to non-target usage than others?
2. How can we best understand and explain the patterns observed in non-target usage of prepositions by Norwegian learners? What mechanisms are involved in the choices they make in L2?

I mainly approach the research questions qualitatively, although I do discuss frequently occurring prepositions and prepositional phrases in terms of the trends and patterns they reveal. The chapter is subdivided into three sections: In Section 5.1, I provide an overview of the distribution of target as well as non-target prepositions in the corpus in order to establish which target/non-target prepositions occur more frequently, and which are not used. In section 5.2, I address the first research question specifically by presenting the distribution of non-target prepositions within the respective syntactic and semantic categories given in chapter 3. This distribution will be used as basis to indicate whether some syntactic and/or semantic categories seem to be specifically problematic for young learners. I briefly present some preliminary implications of the findings that are further developed in the next section.

In 5.3, I investigate the sources of the errors in order to indicate what mechanisms have caused them. As will be evident, I largely base the analysis and discussion on the theoretical framework and underpinnings of usage-based, cognitive linguistics presented in chapter 2.2.2.1. The data is presented in tables that include total number of occurrences of non-target prepositions, all target prepositions in each

category and all non-target uses for each target preposition. I have investigated the most frequent target prepositions separately along with the most frequent non-target versions of them. I also discuss some more sporadic examples that are interesting for some reason or other. The aim is to be able to explain non-target usage in terms of mechanisms and strategies employed by learners in L2 acquisition. In 5.4, I present the main findings, which are then discussed in more detail in light of theoretical perspectives and previous research in section 5.5.

5.1 Distribution of target and non-target prepositions

To give a general impression of the non-target prepositions in the sample in relation to the corpus more generally, table 5.1 provides an overview of all target and non-target prepositions that appear among the 15 and 16-year-olds in the corpus:

Table 5.1: Total occurrences of prepositions

Prepositions in corpus	Non-target prepositions	Total	%
<i>onto</i>	1	1	100
<i>on</i>	110	408	27
<i>against</i>	6	24	25.0
<i>under</i>	2	8	25.0
<i>towards</i>	1	5	20.0
<i>along</i>	1	6	16.7
<i>for</i>	34	228	14,9
<i>off</i>	6	35	17.1
<i>over</i>	11	87	12.6
<i>at</i>	36	328	11
<i>in</i>	90	872	10.3
<i>into</i>	5	59	8.5
<i>by</i>	5	74	6.8
<i>with</i>	23	253	9.1
<i>through</i>	1	13	7.7
<i>to</i>	49	736	6,7
<i>of</i>	31	655	4.7
<i>from</i>	6	190	3.2
<i>before</i>	2	56	3.6
<i>forward</i>	1	45	2.2
<i>after</i>	1	85	1.2
<i>about</i>	3	343	1.0
<i>up</i>	2	233	1.0
<i>out</i>	1	185	0.5
Total	N=435	N=4929	8,7

In table 5.1 above, the prepositions that appear among the 15 and 16-year-olds and their frequency in the error category are presented in the two left-most columns. In the two right-most columns, the total number of occurrences for each preposition is given as well as the error rate in percentage.

27% of all instances of *on* among the 15 and 16 year-olds in the corpus are non-target examples. Interestingly, it is only the third most frequently occurring preposition in the entire corpus with less than half as many tokens as *in* and about 30% less than *of*. *On* has thus the highest error rate among the more frequently occurring prepositions. The only preposition with a higher error percentage rate is *onto*. However, *onto* occurs once in the entire corpus, thus it cannot really be compared to *on* in this regard. It is, however, interesting to note that *onto* is hardly used by the learners. This could be arbitrary and simply a result of a small data sample or it could indicate avoidance of a feature that is cognitively complex and not a feature in the learners' L1. In the case of *on*, however, this indicates that it is one of the most challenging target prepositions for learners to master. What causes this will be explored further in section 5.3.

Furthermore, *for*, *at* and *in* are among the prepositions that have the highest percentage rates and occur most frequently. As evident from the number of total occurrences, *for* and *at* are more problematic than *in*. They are all quite frequently used wrongly as each of them has an error rate higher than 10%. All of these prepositions are among the 30 most frequent words in everyday English, in addition to *of*, *to*, *with*, *on*, *by* and *from* respectively (Saint-Dizier 2006:3). As they are very frequent they are also highly polysemous and most of them have grammaticized uses. Hence, the acquisition of all the uses of a single preposition constitutes a complex and challenging task for learners.

In this regard, it is interesting to note that *of* is not equally prone to errors with an error rate at only 5.7%, despite being among the most frequent prepositions in the corpus. This is somewhat striking as it is also one of the most grammaticised preposition in English (Huddleston & Pullum 2002:658). This suggests that the learners have acquired an essential understanding of its use.

While the prepositions mentioned above occur rather frequently in the corpus, the opposite is the case with *against*, *under*, *towards* and *along* although they follow *onto* and *on* with respect to error rate. *Against* has the highest number of total

occurrences of these but they are all relatively infrequent. In my view, there is no obvious reason to claim at this point that these prepositions are infrequent because learners tend to avoid them, as the spatial relations expressed here are encoded conceptually and linguistically in much the same way in Norwegian and English. My preliminary conclusion regarding these features is therefore that they are infrequent as a result of the size of the corpus.

The distribution of occurrences between the prepositions *from*, *about*, *up* and *out* are also interesting to note. What they have in common is that there are virtually no errors despite a large number of total occurrences in the corpus, which indicates that the learners have essentially acquired them. Hence, the usage of these prepositions has been acquired prior to e.g. the usages of *on*, *in* and *at*. While some reasons have already been hinted at above, I will explore this issue in more detail in section 5.3.

5.2 Non-target usage in syntactic and semantic categories

In the previous section, I discussed the distribution of the target and non-target prepositions in the data and discussed some preliminary hypotheses and conclusions drawn from the findings. In this section, I employ the categories established in chapter 3 in order to approach the first research question: *Are there certain syntactic and/or semantic subgroups of prepositions that are more prone to non-target usage than others?* As already established, the data is categorized into syntactic and semantic categories for the purpose of providing an answer to the research question above, and, more generally, to indicate whether syntactic or semantic features of prepositions cause difficulty for learners. Unfortunately, there was not enough time to analyze the corpus for the total number of each syntactic and semantic category in order to compare them to the number of non-target occurrences. This would have provided an even more complete picture of which categories are problematic but would have required a syntactic analysis of each and every PP in the corpus manually, which would have been a task too extensive and time-consuming for this project.

5.2.1 Syntactic categories

In table 5.2 below, I present the distribution of the non-target IL structures across the syntactic categories. This is the same table as the one presented in chapter 4.1.3:

Table 5.2: Distribution of non-target prepositions in syntactic categories

Category	Frequency of errors	%
VP modifier	121	27.2
Adjunct	115	25.9
VP complement	80	18
NP post-head modifier	47	10.6
NP complement	28	6.3
Adj.P complement	18	4.1
Adj.P post-head modifier	10	2.3
Various functions	16	3.6
Others	9	2
Total	N=444	100

Table 5.2 provides the total number of occurrences of non-target prepositions in each category as well as the percentage rate within a given syntactic category relative to the total number of non-target prepositions. The table above states that the majority of the non-target prepositional phrases function as modifiers in verb phrases. PPs that function as adjuncts in the sentence are almost as frequent, and verb phrase complements are the third largest category. Thus, there seems to be a trend that PPs that are optional are more prone to errors than obligatory PPs. One possible explanation is that obligatory PPs are more vital for successful communication than optional PPs. Hence, based on the findings here, I argue that learners operate with a strategy similar to *the first noun principle*, discussed in relation to IP theory in chapter 2.2.4, which I call *the obligatory first principle*. This principle predicts that L2 learners process and master obligatory elements before optional ones, as they are more vital and valuable for communication than optional elements.

Furthermore, the three most frequent syntactic categories are adjuncts and verb phrase complements and modifiers. These constitute some 70% of all the prepositional

errors in the sample. PPs that function as complements and modifiers in noun phrases and adjective phrases, on the other hand, are the clear minority with only 30% of the errors. This yields the hypothesis that adjuncts and complements of verbs are more prone to errors than complements/modifiers of nouns and adjectives. Consequently, to explore this further, I took a closer look into each category in order to find out whether there are some shared characteristics that can explain why this should be the case. I found that many of the non-target PPs that function as complements or modifiers of verbs occur in constructions like the following:

- (1) We young people also care a much of the environment ... (p207-10).
- (2) My view We doesn't think so much over it ... (p54-10).
- (3) I do not think I have ever seen a person past 40 years throwing rubbish on the streets ... (p247-10).

These examples have in common that they have an element intervening between the verb and its PP complement. In (1) it is an adverbial expression modifying the verb, whereas in (2) and (3) they are objects. These intervening elements might cause additional difficulty for the learners in processing and producing the correct preposition as there is distance between the internal dependent and the verb that licenses it. In noun phrase structure, on the other hand, internal dependents of the noun phrase normally precede potential modifiers and so follows the head noun directly, which eases the cognitive task of learners somewhat in processing and producing the target forms (Huddleston & Pullum 2002:454). The finding discussed here corresponds well with the predictions of *Processability Theory* given in chapter 2.2.5, that noun phrase procedures are acquired before verb phrase procedures, as the verb phrase is higher up in the processing hierarchy.

In the category labeled “various functions” I have included PPs such as the following:

- (4) I'm going out of the bed and down to the floor ... (p209-10)
- (5) Later on the school day I am going to have a homework test ... (p209-10)
- (6) ... so I look for to meet your all soon ... (p207-10)

In (4), the PP *to the floor* is embedded within another PP and functions as complement of *down* and in (5), the PP *on the school day* functions as modifier of the adverb *later*. In (6) the verb + PP constructions is fossilized. As presented in chapter 3.1.2.2.1, such constructions are not analyzed as syntactic constituents in the framework adopted here, and thus, they do not really belong in a separate syntactic category. However, they are included here because they require a separate discussion when it comes to acquisition. As pointed out in chapter 3.2.1.1, Liao and Fukuya (2004) found that Chinese learners avoid fossilized expressions in general and fossilized expressions with idiomatic interpretations in particular. Although it cannot be stated based on this sample alone whether learners actively avoid them or not, my findings support Liao and Fukuyas' in suggesting that Norwegian learners at this point in development also use fossilized expressions, especially idiomatic ones, sparingly.

5.2.2 Semantic categories

The distribution of non-target prepositions across the semantic categories established in chapter 3.1.3 is presented in table 5.3 below. This is also the same table as presented in chapter 4.1.3:

Table 5.3: Distribution of non-target prepositions in semantic categories

Category	Frequency of errors	%
position	159	35.8
goal	121	27.3
causality	44	9.9
aboutness	38	8.6
grammaticized prepositions	26	5.9
source	22	5
manner	14	3.2
various meanings	11	2.5
others	9	2
Total	N=444	100

The largest semantic category is *position*, which constitutes 35,8% of all the non-target structures in the sample, followed by *goal* with 27,3%. Both of these are subcategories of prepositions denoting *location*, as discussed in chapter 3.1.3.1. As evident from table 5.3, these two constitute more than half of all the non-target prepositions. Hence, they clearly stand out as the semantic categories most prone to errors in the sample, followed by *causality* and *aboutness*. Prepositions that are grammaticized constitute 5,9%. *Source* and *manner* prepositions are the two smallest semantic categories in the data with only 5% and 3,1% respectively. As previously pointed out, prepositional meaning is spatial in origin and has been extended to other domains through metaphorical processes. Hence, it should be kept in mind that those non-target structures that are clear cases of metaphorical extensions but have kept their *locative* meaning e.g. prepositions that locate events in *time*, have been included as *position*, *goal* or *source*. Considering that the locative categories are broader than the others in terms of what is included, it is not surprising that they are larger. Interestingly in this regard, *source* is one of the smallest categories, indicating that these are not nearly as challenging to master as the other locative senses.

5.3 Explaining non-target prepositions

In this section, I turn to the task of explaining the errors, which constitute the most important stage in error analysis, according to Ellis & Barkhuizen (2005:62). What is important here, is to establish which non-target prepositions are provided instead of a given target preposition in order to identify the motivation, strategies and processes behind the choices the learners have made. Bearing in mind that non-target structures can be influenced, motivated and constrained by a number of factors, I discuss the patterns observed from different perspectives. Table 5.4 below, gives an overview of the target prepositions and all the non-target prepositions that have been provided instead. I have summarized all the non-target prepositions used for the target preposition in the non-target column:

Table 5.4: Distribution of target and non-target prepositions

Target preposition	Occurrences	Non-target prepositions
<i>in</i>	59	<i>on</i> (30), <i>at</i> (15), <i>into</i> (3), <i>of</i> (2), <i>against</i> , <i>by</i> , <i>from</i> , <i>for</i> , <i>through</i> , <i>onto</i> , <i>to</i> , <i>with</i> , <i>i</i> (9)
<i>for</i>	47	<i>to</i> (21), <i>in</i> (14), <i>on</i> (6), <i>of</i> (2), <i>over</i> , <i>with</i> , <i>bye</i> , <i>after</i> (4)
<i>to</i>	45	<i>on</i> (19), <i>in</i> (9), <i>at</i> (5), <i>for</i> (4), <i>of</i> (2), <i>with</i> (2), <i>in to</i> (2), <i>towards/by</i> (2)
<i>at</i>	41	<i>on</i> (27), <i>in</i> (6), <i>to</i> (4), <i>into/by/of/off</i> (4)
<i>on</i>	35	<i>in</i> (12), <i>at</i> (10), <i>to</i> (7), <i>with</i> (3), <i>along/against/for</i> (3)
<i>about</i>	34	<i>for</i> (10), <i>of</i> (9), <i>on</i> (6), <i>in</i> (3), <i>to</i> (2), <i>with</i> (2), <i>off/over</i> (2)
<i>of</i>	21	<i>from</i> (5), <i>for</i> (3), <i>on</i> (3), <i>to</i> (3), <i>in</i> (2), <i>over</i> (2), <i>off/at/with</i> (3)
<i>by</i>	16	<i>with</i> (7), <i>at</i> (2), <i>in</i> (2), <i>of</i> (2), <i>from/on/about</i> (3)
<i>with</i>	12	<i>of</i> (2), <i>for</i> (2), <i>in</i> (2), <i>to</i> (2), <i>on</i> (2), <i>about</i> (2)
<i>into</i>	8	<i>in</i> (7), <i>to</i> (1)
<i>until</i>	8	<i>to</i> (6), <i>in/before</i> (2)

<i>during</i>	8	<i>in</i> (4), <i>at</i> (2), <i>under/on</i> (2)
<i>from</i>	7	<i>in</i> (5), <i>of/on</i> (2)
<i>across</i>	5	<i>over</i> (4), <i>up</i> (1)
<i>through</i>	3	<i>in</i> (3), <i>into/on/throughout</i> (3)
<i>against</i>	3	<i>with</i> (2), <i>on</i> (1)
<i>off</i>	2	<i>of/over</i> (2)
<i>above</i>	1	<i>over</i> (1)
<i>among</i>	1	<i>at</i> (1)
<i>because of</i>	1	<i>by</i> (1)
<i>below</i>	1	<i>under</i> (1)
<i>before</i>	1	<i>to</i> (1)
<i>behind</i>	1	<i>in</i> (1)
<i>down</i>	1	<i>down in</i> (1)
<i>in front of</i>	1	<i>before</i> (1)
<i>in order to</i>	1	<i>for</i> (1)
<i>look forward to</i>	1	<i>look for to</i> (1)
<i>miss out on</i>	1	<i>mis out of</i> (1)
<i>over</i>	1	<i>on</i> (1)
<i>regarding</i>	1	<i>to</i> (1)
<i>throughout</i>	1	<i>over</i> (1)
<i>towards</i>	1	<i>against</i> (1)
<i>upstairs</i>	1	<i>up</i> (1)

33 different target prepositions have been identified in the data sample. *In* is the most frequent among these with 59 occurrences. The by far most frequent non-target preposition replacing *in* is *on* with 30 occurrences. When taking a closer look at occurrences of *in* for *on*, most instances express the physical position of a trajector relative to a landmark and reflect L1 transfer. The clear majority of errors can be explained on the basis of differences in how Norwegian and English *construe* (see section 2.2.2.1) these situations differently. To illustrate this, I have provided

examples of non-target usage, the Norwegian translation of these as well as the English target structures below:

(7a) ... Now I lies on a hospital ... (p122-10)

(7b) ... 'nå ligger jeg på et sykehus ...'

(7c) ... Now I lie in a hospital ...

(8a) ... on some off the workingpleases they dumping poison ... (p160-10)

(8b) ... 'på noen av arbeidsplassene dumper de gift i vannet ...'

(8c) ... in some of the working places they dump poison into the water ...

(9a) ... (they) ... work on factories which is dangerous ... (p198-10)

(9b) ... '(de) jobber på fabrikker som er farlige for miljøet ...'

(9c) ... (they) ... work in factories that are dangerous for the environment ...

In these examples, the learners seem to have provided the non-target preposition *on* because of a difference in construal between English and Norwegian. Both *in* and *on* express *direct contact* between the trajector and landmark (see section 3.1.3). More specifically, *in* expresses the landmark as a three-dimensional container in which the trajector is placed, whereas *on* denotes that the trajector is supported by the landmark. These spatial concepts are available conceptually and linguistically to both speakers of English and Norwegian but in different contexts. Consequently, English and Norwegian construe this relation differently as both are plausible interpretation of the physical relation depicted in (7), (8) and (9), that is, the landmark is both a container and a horizontal and vertical surface. This seems to be a good illustration of the statement (see e.g. section 3.2.2) that the human mind is capable of viewing spatial relations in a variety of ways and that this is reflected in different linguistic expressions for the same relation.

The target preposition in English is *in* as users of English perceive and express the landmark *hospital* as a container (Huddleston and Pullum 2002:649–50). Conversely, when landmarks denote institutions, Norwegian tends to view the relation as *horizontal contact* using the Norwegian *på*, which generally means 'on' (Faarlund, Lie & Vannebo 1997:420). Hence, these are examples illustrating that learners "plug" the corresponding lexical items in English onto the Norwegian underlying conceptual

structure meaning that they “think” in the first language and use words from the second language” (Dulay, Burt & Krashen 1982:110–1).

On is also used for *in* when it serves to locate the trajector in *time*, as in the following examples:

(10a) The clock was twenty past eight on the morning (p57-10)

(10b) ‘Klokken var ti på halv ni på morgenen.’

(10c) It was twenty past eight in the morning.

(11a) On the afternoon Lisa came up to my house (p127-10)

(11b) ‘På ettermiddagen kom Lisa opp til huset mitt’.

(11c) In the afternoon, Lisa came up to my house.

(12a) On the evening, when I so gone sleep ... (p254-10)

(12b) ‘På kvelden da jeg hadde gått og lagt meg ...’

(12c) In the evening when I had gone to sleep ...

The same distinction between Norwegian and English construals applies in the examples above. Norwegian tends to use *på* i.e. ‘on/at’ when locating the trajector to a certain part of the day such as *morning*, *afternoon* and *evening* (Faarlund, Lie & Vannebo 1997:430). Hence the non-target preposition *on* is used as this corresponds to the Norwegian *på*. English, on the other hand, uses *in* to refer to periods that are longer or shorter than a day and thus viewing them as containers, when they are not perceived as *points of time* in which case *at* is used (Quirk & Greenbaum 1985:688).

I argue that the differences between Norwegian and English in the *time* domain are caused by how Norwegian and English differ in the corresponding construal of spatial relations, as the former is a *metaphorical extension* of the latter. A metaphor in the cognitive linguistic view is to understand “one conceptual domain in terms of another” and “... a conceptual domain is any coherent organization of experience” (Kovecses 2010:4). Hence, if the experience of the *source domain*, i.e. the conceptual domain from which linguistic expressions are derived in order to understand another domain, in this case *space*, is differently structured in L1 and L2, it is expected that this will be reflected in the structuring of the experience of the *target domain*, i.e. *time* in L1 and L2 as well (Kovecses 2010:4). Consequently, I hypothesize that it will be even

more challenging to acquire metaphorically extended meaning than spatial meaning of prepositions in L2, as acquirers first have to trace metaphorical extensions to their origin, which is spatial conceptual structure before they can map these structures on to the proper linguistic expressions in L2. This prediction is not reflected in the present analysis in that locative temporal prepositions are more frequent in the sample.

However, it would be interesting to investigate whether the acquisition of temporal aspects take longer than the acquisition of spatial aspects, which would provide insight to this hypothesis.

There are a few usages of non-target prepositions that do not seem to be traceable to the L1 of the learners. Among them there are two examples where the learners have provided *of* instead of *in*:

(13a) ... inside an huge mountain troll. The troll is carved of stone (p80-10).

(13b) '... inni et digert fjell troll. Trollet er skjært ut i stein'

(13c) ... inside a huge mountain troll. The troll is carved in stone

(14a) ... see no harm in telling you about some funny moments of my life (p145-10).

(14b) '... jeg ser ingen problemer med å fortelle deg om noen morsomme historier fra livet mitt.'

(14c) ... see no harm in telling you about some funny moments in my life

In both *of* has been used instead of *in*, reflecting an *intralingual error* (see chapter 4.1.4). The non-target structure in (13a) might have been induced by another target structure *made of* because of the similarity in meaning and structure between the two. James (1998:185) labels this intralingual error *false analogy*, which means that the learner wrongly assumes that one target language item behaves like another. In (14a), on the other hand, the corresponding target preposition in Norwegian is *fra*, which means 'from' and in English *in*. The non-target preposition used here invokes two different readings: if the error *of* is read as L1-induced, the learner has used *of* to indicate the *source* of the trajector *moments*, which is the landmark *my life*. Under this reading, *from* would be the suitable translation from Norwegian. If, however, the non-target structure is seen as L2-induced, it is an example of an overgeneralization "caused by the learners' failure to observe the boundaries of a rule" (Larsen-Freeman & Long 1991:58). More precisely in this case, it is an overgeneralization of the grammaticized

usage of the *of*-construction denoting a partitive relationship between *moments* and *my life*.

FOR

<i>for</i>	47	<i>to</i> (21), <i>in</i> (14), <i>on</i> (6), <i>of</i> (2), <i>over</i> , <i>with</i> , <i>bye</i> , <i>after</i> (4)
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The second most frequently occurring target preposition identified in the data is *for*, which is the most polysemous prepositions in English (Huddleston & Pullum 2002:655). Hence, there are many different varieties of *for*, for learners to acquire. *To* and *in* most frequently replace *for* with 21 and 14 occurrences respectively. In the following examples from the corpus, *to* is used instead of *for* to indicate that the landmark is *beneficiary* of the trajector:

(15a) ... but she did not have any kebab to me (p276-10).

(15b) '... men hun hadde ingen kebab til meg.'

(15c) ... but she did not have any kebab for me.

(16a) There you buy things to your dog ... (p100-10)

(16b) 'Der kjøper du ting til hunden din ...'

(16c) There you can buy things for your dog

(17a) ... and it has amuch to offer to evrybody. (p207-10)

(17b) '... og det har mye å tilby til alle'

(17c) ... and it has much to offer for everybody

This beneficiary relation is conceptually close and so presumably an extension of the relation (intended) *recipient*, which in turn stems from the semantic spatial category *goal/destination* previously discussed (see chapter 3.1.3.1). Furthermore, the equivalents of both *for* and *in* can express this *beneficiary* relation in Norwegian (Faarlund, Lie & Vannebo 1997:439). In English, *intended goal/beneficiary recipient* is usually expressed by *for*. *To*, on the other hand, usually denotes *actual* recipient (Quirk & Greenbaum 1985:697). Interestingly, there are only six instances of non-target *for* used for target *to*:

- (18a) After jumping up and down for a while, I thought for my self ... (p151-10)
 (18b) 'Etter å ha hoppet opp og ned en liten stund, tenkte jeg for meg selv ...'
 (18c) After having jumped up and down for a while, I thought to myself ...

- (19a) ... I muttered for myself (p21-10)
 (19b) '... mumlet jeg for meg selv'
 (19c) ... I mumbled to myself,

Contrary to English, Norwegian prefers *for* to denote a *known* recipient in the situations above, and that the landmark actually receives the thoughts (18) and hears the mumbling (19). English uses *to* in equivalent situations. Thus, it is clear also in these cases that the learners are influenced by their L1 when making choices in L2.

Non-target *in* is used for target *for* in 14 instances in the data sample, examples include the following:

- (20a) He's been in WWE ... in 15 years. (p104-10).
 (20b) 'Han har vært i WWE ... i 15 år.'
 (20c) He was in the war ... for 15 years.

- (21a) I even tried to stay awake in several days ... (p17-10).
 (21b) 'Jeg prøvde til og med å holde meg våken i mange dager ...'
 (21c) I even tried to stay awake for several days ...

in is used in both (20a) and (21a) by the learners to denote *duration of time*. These non-target uses are clearly facilitated by the fact that Norwegian predominantly denotes *duration of time* by means of the preposition *i*, which is the Norwegian equivalent of English 'in', when referring to long time frames such as weeks, months and years (Faarlund, Lie & Vannebo 1997:431). In English, on the other hand, *duration* is usually expressed by *for* (Quirk & Greenbaum 1985:689). In my view, it is hard to detect any substantial difference in the mental scenes construed in Norwegian in examples like (20b) and (21b), and in English in examples like (20c) and (21c).

Some intralingual features might also have facilitated this error: *in* is used to denote duration in English when measuring time from the present and into the future as in the following example:

(22) *We'll meet in three months from now* (Quirk & Greenbaum 1985:688).

The knowledge about how *duration* is expressed in Norwegian along with the (potential) observation that *in* can be used to denote a nuance of the same relation might have contributed to consolidate the learners' hypothesis that L1 and L2 express *duration* in a similar manner here.

Furthermore, we can account for all but four of the instances of *to* for *for* by comparing them to Norwegian. What is striking about the four examples that do not reflect Norwegian is that the target preposition in English is the equivalent to the target preposition in Norwegian used in the same contexts:

(23a) ... when we get old, we can blame them to not care ... (p204-10).

(23b) '... når vi blir gamle kan vi skylde på dem for at de ikke brydde seg ...'

(23c) ... when we get old we can blame them for not caring

(24a) ... because he is a great rolemodel to young people (p266-10).

(24b) '... fordi han er en rollemodell for unge mennesker.'

(24c) ... because he is a great rolemodel for young people.

(25a) That can be very dangerous to the other people in the traffic (p24-10).

(25b) 'Det kan være veldig farlig for andre folk i trafikken.'

(25c) That can be very dangerous for other people in the traffic.

In all of the four learner varieties above, *for* would be the most accurate preposition to use in Norwegian rather than *to*. In these cases it seems we have to do with errors stemming from what Selinker (1972:216–7) refers to as a *strategy* in second-language acquisition. The fact that *for* is a cognate, that is, it has the same meaning and form in Norwegian and English, might have led learners to hypothesize that it is a *false friend* i.e. similar in form but different in meaning, which has generated the non-target prepositions above (Escribano 2004:94).

TO

<i>to</i>	45	<i>on</i> (19), <i>in</i> (11), <i>at</i> (5), <i>for</i> (5), <i>of</i> (3), <i>with</i> (3), <i>in to</i> (2), <i>towards/by</i> (2)
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One of the basic meanings of *to* is to denote the *endpoint* or *goal* of physical motion (Huddleston & Pullum 2002:660). The Norwegian equivalent is *til* (Faarlund, Lie & Vannebo 1997:425). As evident from the table above, there are 19 instances of *on* as non-target preposition of *to* in the sample. The overall majority of the occurrences can again be explained by consulting the equivalent structure in Norwegian. Also here, the target and native language of the learners share the underlying concepts but situations are construed differently depending on context:

(26a) ... and went down on the kitchen to make some coffee ... (p207-10)

(26b) ... ‘og gikk ned på kjøkkenet for å lage litt kaffe ...’

(26c) ... and went down to the kitchen to make some coffee ...

(27a) ... so I ran out on the kitchen ... (p127-10)

(27b) ... ‘så jeg løp ut på kjøkkenet ...’

(27c) ... so I ran out to the kitchen ...

In the situation depicted in both (26) and (27) *to* is used in English to indicate that the destination of the movement denoted by the verb was completed (Quirk & Greenbaum 1985:677). Although *til* is the Norwegian equivalent usually denoting the destination of a movement as pointed to above, there are certain cases where prepositions usually denoting *position* come to express a *goal* when they occur in PPs that are dependents of verbs of movement (Faarlund, Lie & Vannebo 1997:425). When *position* prepositions denote a *goal* they also often occur as complements of a *goal* preposition such as *down* and *out* in the examples above (Faarlund, Lie & Vannebo 1997:426). The goal of the movement of the verb is a *position* and so the position is a “state” achieved when having reached the destination. Hence, when this goal/state is achieved the preposition usually denoting this static *position* can be used. This is what is reflected in the examples above and in equivalent examples where non-target *in* is used for *to* e.g. in (28a) below:

(28a) ... when I got down in the livingroom ... (p42-10)

(28b) ‘ ... Da jeg kom ned i stua ... ’

(28c) ... when I got down to the livingroom ...

The only difference in (28) is that *stua*, which means ‘the livingroom’, the static *location* in this case, is expressed by using the equivalent of *in*, contrary to in (27a), where the static position *kjøkkenet* ‘the kitchen’, is expressed by using the equivalent of *on* in Norwegian. While English highlights the *motion* and *path* involved in the movement towards the landmarks in situations like the above, Norwegian highlights the *contact* achieved when having reached the destination and the notion of *containment* when having reached *the livingroom*. Following the cognitive perspective, this reveals that languages have a limited set of ways to encode characteristics of experienced reality and that these differ from one linguistic system to another. The differences hence reflect differences in thinking for speaking (Slobin 1991). In this context, as we have seen elsewhere as well, the Norwegian users have conventionalized one certain way of viewing a spatial scene from a variety of options, which is reflected in the linguistic structure they use to express it. English users view and express the same relation differently.

There are a few non-target uses of *to* that cannot be explained, at least not fully, in terms of L1 influence, one of which is the following:

- (29a) ... thought about how she made a big different on the world today (p188-10)
(29b) ‘... tenkt på hvordan hun utgjorde en stor forskjell for/i verden’
(29c) ... thought about how she made a big difference to the world

In (29a), the Norwegian equivalent would read either *for verden* or *I verden*, which means ‘for the world’ or ‘in the world’ but not *på verden*, which means ‘on the world’. Thus, this non-target preposition seems to have been facilitated by other factors than L1. One possible explanation might be that the learner has been exposed to *on* selected in the complementation of nouns, verbs and adjectives when denoting, similar to *to*, that the trajector is “inflicted” upon the landmark, and thus caused by intralingual analogy.

AT

<i>at</i>	41	<i>on</i> (27), <i>in</i> (6), <i>to</i> (4), <i>into/by/of/off</i> (4)
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Of all the 41 examples that have been identified as target *at*, there are 27 occurrences of *on*. In all the examples studied so far, non-target uses reflect how Norwegian and English construe spatial scenes and concepts differently although the underlying concepts are present in both languages but applied in different contexts. In this case, however, English uses two different prepositions: *at* and *on*, to denote spatial relations that are all covered by *på* in Norwegian. The most basic meaning of *at* is to express that two entities are located at the exact same place by construing them both as *points* (Huddleston & Pullum 2002:650). *På* covers both of these senses in Norwegian. An obligatory distinction made in the target language is not made in L1. Not surprisingly, this leads to difficulty as reflected in the numbers above. Furthermore, one would expect that there would be a similar number of non-target *at* used for *on* as, if following the Norwegian construal, these can be used interchangeably. However, out of 35 instances there are only 11 occurrences of non-target *at* in the sample, hence, the learners seem to have a preference for *on*. This preference might stem from the learners taking *on* to be a *cognitive prototype* (see section 2.2.2), as they have frequently observed it being used to denote relations of *support* and *contact*.

One non-target example is product of a different mechanism previously touched upon:

(30a) We decided not to tell you more about the place by now ... (p42-10)

(30b) ‘Vi bestemte oss for å ikke å fortelle noe mer om stedet (for) nå ...’

(30c) We decided not to tell you more about the place for now ...

The Norwegian equivalent structure in this case does not even necessarily use a preposition, as shown in (30b) and must be explicable in terms of other sources. In this particular example it might be the case that the learner is familiar with the English temporal expression “by now” which marks “the completion of the time required or assigned for the performance of an action” (Oxford English Dictionary 2000. Accessed: 5 March 2017. s.v. *by now*, p). The learner has then misinterpreted the meaning of the expression or he has overgeneralized its use and meaning to also denote “for the present

time” (Oxford English Dictionary 2000. Accessed: 5 March 2017. s.v. *for the time being*, p). As these temporal expressions are conceptually similar, the learner seems to have reasoned that the expression covers them both.

ON

<i>on</i>	35	<i>in</i> (11), <i>at</i> (11), <i>to</i> (7), <i>with</i> (3), <i>along/against/for</i> (3)
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As discussed in the previous section, Norwegian does not discriminate between the meanings of *at* and *on* in terms of two different prepositions, instead *på* covers both of them. Hence, as we have seen, many of the Norwegian learners provide *on* where the target preposition is *at*. Not as frequently, they provide *at* instead of *on* as reflected in the data above. The most frequent *non-target* preposition used for *on* is *in*, which occurs 11 times. In the former discussion of *on* as non-target preposition for *in*, we saw that Norwegian construe spatial relations differently than English by highlighting the *contact* and *support* relations involved by using *on*, whereas English favors the notion of *containment* through the use of *in*. In these examples, however, the opposite seem to be the case.

ABOUT

<i>about</i>	34	<i>for</i> (10), <i>of</i> (9), <i>on</i> (6), <i>in</i> (3), <i>to</i> (2), <i>with</i> (2), <i>off/over</i> (2)
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The first observation concerning non-target uses of *about* is that, unlike the other non-target prepositions considered so far, most examples do not seem to be traceable to the Norwegian conceptualization of spatial relations. Rather, most seem to be intralingual errors reflecting overextension and/or blending of the meaning of similar expressions in English.

For is the most frequent non-target preposition occurring for *about* with ten examples, followed by *of* with nine examples and *on* with six. In eight of the examples where *for* is provided, it is selected by the verb *care* yielding the fossilized expression

care for, which indicates *provide for* or *take care of* (Oxford English Dictionary 2000. Accessed: 15 April 2017. s.v. *care for* n). Thus, these non-target uses seem to be the result of confusion between the meanings of the fossilized expression *care for* and the verb + PP construction where *care* selects *about*, either interpreting them as similar in meaning or confusing the meaning of the former with the latter. As these expressions are relatively similar in meaning and both prepositions are to some extent grammaticized, it is not surprising that the difference between them is hard to detect for learners. The major share of non-target uses of *about* are thus intralingual errors.

Of is provided for *about* in similar contexts as the above, i.e. where the verb in the given context selects *about*, but may in other contexts select the preposition *of* as with the verb *think*. In addition to *for*, *of* is also used with the verb *care*, yielding the expression *care of*. In my view, both interlingual and intralingual features might have contributed to non-target structures such as these. (31a) below serves as an example:

(31a) That proves that rich people cares of other people (p144-10).

(31b) 'Det beviser at rike mennesker bryr seg om andre. '

(31c) This proves that rich people care about others.

When considering the Norwegian equivalent, it becomes apparent that as direct translation, *about* is a more suitable alternative than *of*. However, in certain contexts in English, *of* expresses meanings very similar to *about*, i.e. indicating subject matter of thought, feeling or action as in the following example from the Oxford English Dictionary:

(32) He'd been notified of the locations and activities of his various submarines (Oxford English Dictionary 2000. Accessed: 15 April 2017. s.v. *of* p).

This, in connection with the orthographic similarity to the Norwegian preposition *om* which means 'about', seems to have consolidated the hypothesis that *of* is the proper preposition to use in this context. The non-target prepositions most obviously influenced by L1 among these are the cases where *on* is used for *about* generating examples like (33a):

- (33a) We young people have other things to think on ... (p100-10).
 (33b) ‘Vi unge mennesker har andre ting å tenke på ...’
 (33c) We young people have other things to think about ...

Here, Norwegian *tenke*, ‘think’, selects *på* to express the same meaning as the English equivalent *think about* and so this is very likely a case of transfer.

OF

<i>of</i>	20	<i>From</i> (5), <i>on</i> (3), <i>to</i> (3), <i>in</i> (2), <i>over</i> (2), <i>for</i> (2), <i>off/at/with</i> (3)
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Of is the most grammaticized preposition in English and is used to express a broad variety of meanings and functions (Huddleston & Pullum 2002:658). This is reflected in the data, which reveals that several different non-target structures are used in a number of different contexts. The most frequent non-target preposition for *of* is *from*. In most of these examples *from* is used to express the *source* of movement where English uses *of* to express a less semantic more functional *part-whole* relation:

- (34a) ... I woke up of the annoying sound from the alarm clock (p171-10).
 (34b) ‘... Jeg våknet opp av den irriterende lyden fra/av alarmklokken.’
 (34c) ... I woke up of the annoying sound of the alarm clock

- (35a) ... sound of laughter and the screaming from the weal on a bike (p198-10).
 (35b) ‘... lyden av latter og skrikingen fra hjulet på en sykkel’
 (35c) ... sound of laughter and the screaming of the weal on a bike

The non-target prepositions used here also reflect differences in thinking for speaking between Norwegian and English. Where English expresses the relationship between the trajector *sound* as a part of the landmark *alarm clock* by means of *of*, the mental image created in Norwegian bears more resemblance to a *source* relation where the trajector originates in the landmark by using *fra*, which means ‘from’ (Faarlund, Lie & Vannebo 1997:427) In contexts like (34) however, Norwegian can also depict the scene as a *part-whole* relation by using the preposition *av* i.e. ‘of’ (Faarlund, Lie & Vannebo 1997:440).

(34) and (35) are good illustrations of how difficult it can be to determine what counts as an error. In my view, although they are tagged as errors, the above examples are not instances of *absolute errors*, rather, they are less natural alternatives, hence *dispreferred forms* (see section 4.2.1). The differences in meaning between prepositions are often nuanced and hard to detect, and so they are a particularly challenging category in this regard.

BY

<i>by</i>	16	<i>with</i> (7), <i>at</i> (2), <i>in</i> (2), <i>of</i> (2), <i>from/on/about</i> (3)
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There are seven occurrences of *with* as non-target preposition of *by*. In four of these, *with* is used to denote *instrument*. The equivalent meaning is expressed by means of *med*, the equivalent of which is ‘with’ in English, and thus the examples clearly reflect transfer here as well:

(36a) He went home with the buss. (p205-10).

(36b) ‘Han dro hjem med bussen.’

(36c) He went home by bus

Furthermore, in one example *with* is seemingly used to denote spatial proximity, a relation that is usually expressed by the preposition *ved* in Norwegian:

(37a) I jump over a bush and then I were with the busstation (p284-10)

(37b) ‘Jeg hoppet over en busk og så var jeg ved busstoppet.’

(37c) I jumped over a bush and then I was by the bus station.

In this regard, Jarvis and Pavlenko state that: “ ... conceptual representations of lexical, grammatical and discursive structures are not necessarily identical within the same speech community ... ” (2008:117). This idea seem to be reflected in the non-target structures above, as in certain parts of western Norway *med* ‘with’ is used to denote spatial proximity, which is usually expressed by *ved*, ‘by’ (Faarlund, Lie & Vannebo 1997:422). One plausible explanation for the non-target preposition above is thus that the learner is from an area where this dialectal feature is prominent and has mapped this

conceptual structure onto the English equivalent of the word *med*, which is *with*, resulting in the non-target structure above.

IN FRONT OF/IN ORDER TO

in front of	1	before (1)
in order to	1	for (1)

Two non-target prepositions in the corpus seem to be attempts at fossilized expressions somewhat different from the verb + preposition constructions discussed in section 5.2.1 above. In (38) the target is a fossilized preposition + noun + preposition construction (Huddleston & Pullum 2002:618). In (39), the fossilized *in order* licenses an infinitival (Huddleston & Pullum 2002:623):

(38a) I running in to the bathroom, but right before the bathroom it's a carpet on the floor ...

(38b) 'Jeg sprang inn på badet, men rett foran badet ligger det et teppe på gulvet ...'

(38c) I ran to the bathroom, but right in front of the bathroom there's a carpet on the floor ...

(39a) ... But ther shud be a Frontier for how old you shud be for having driving license

(39b) ' ... men det burde være en grense for hvor gammel man må være for å kunne ha førerkort'

(39c) ... but there should be a limitation for how old one has to be in order to have a driver's license

In (38), the non-target constructions might have been facilitated by a number of factors. First, the main preposition used in order to express intention in Norwegian is *for* 'for' (Faarlund, Lie, Vannebo 1997:446). Furthermore, *for* is used in English to indicate related senses like purpose and reason e.g. *for some reason*. Hence this error might have been induced both by features of L1 and L2. In addition, the fact that the target constructions in these examples are complex and, in the case of (39), highly idiomatic, might make the acquisition of these even more challenging.

5.4 Summary of findings

In approaching my first research question, I have discussed the data sample from a syntactic and semantic point of view in order to establish whether there are certain subgroups that are more prone to errors than others. In relation to syntax, my analysis suggests that optional elements are more prone to errors than obligatory ones. PPs functioning as modifiers in verb phrases and adjuncts in the clause are far more frequent in the sample than PPs functioning as complements in verb phrases. I speculated that this might reflect a learner strategy in the processing of L2 input, similar to *the first noun principle* in IP theory, which I called *the obligatory first principle*. That is, the learners have realized that certain features are more essential for communication than others and so these are processed before more redundant features.

Moreover, the sample establishes that PPs functioning as adjuncts and complements of verbs are more prone to non-target uses than PPs functioning as dependents of nouns and adjectives. Interestingly, this reflects the prediction made by *Processability Theory* that noun phrase procedures must be processed and mastered before the verb phrase because the latter is higher up in the processing hierarchy. Thus, this finding provides evidence in support of the claim that developmental sequences observed in language acquisition studies are a result of the learner's current processing skills and generates the hypothesis that at one stage in the development learners make more errors with elements related to the clause or the verb phrase than to the noun phrase.

When analyzing the same data sample in terms of semantic content, I found that prepositions that express (static) *position* are by far the largest semantic non-target category followed by *goal*. Hence, these are more prone to non-target usage than the other semantic categories. I emphasized that the large number of non-target prepositions in the semantic domain of *position* might reflect that this category is broad in terms of what is included. Interestingly in this regard, *aboutness* is very narrowly defined but is still the fourth largest semantic category included, suggesting that learners struggle with mastering this preposition. Locative prepositions denoting *source*, on the other hand, constitute one of the smallest categories, which suggests that they are not as hard to process.

The analysis of the second research question states quite clearly that the overall majority of non-target uses of prepositions are *interlingual errors*, i.e. they are induced by knowledge acquired in and about L1. As pointed out, the majority of the non-target uses can be explained in terms of how English and Norwegian differ in their construal of spatial relations. We have seen many examples where non-target prepositions reflect how Norwegian and English differ in expressing nuances of meanings within *locative* senses. In the non-target uses of *position on* for target *in*, we saw that Norwegian tends to conceptualize institutions as *horizontal/vertical objects* that the trajector is in *contact* with, whereas English uses *in* to emphasize that the trajector is *contained* within the landmark *institution*. However, there are also cases where English prefers the horizontal/vertical *contact* sense induced by *on* and Norwegian *containment* induced by *in*. In addition, we have seen that Norwegian may use the *position* preposition *on/in* with a verb of motion to indicate achievement of the *goal/destination*, whereas English generally uses *to* in such cases.

Moreover, there are some nuances of meaning that are present in L2 but not in L1, such as the distinction between *point location* expressed by *at* and *fixed position* expressed by *on* in English. In Norwegian *på* generally covers most senses of *contact* that is not *containment*, and so the *point* versus *horizontal/vertical contact* distinction is not as highlighted, if present at all. Following the cognitive framework, most non-target prepositions generally reflect a Norwegian conceptualization i.e. “way of thinking” about spatial relations, where the underlying conceptual structure is Norwegian and is mapped onto the closest English equivalents. This kind of transfer, referred to as *conceptual transfer*, will be addressed and discussed in relation to the data in more detail in the upcoming section.

5.5 Crosslinguistic influence (transfer) in non-target production

Based on the analysis presented above, we can conclude that most non-target prepositions in the sample reflect L1 influence. Hence, L1 knowledge is undeniably an important explanatory factor for non-target prepositions at the present stage in the development, and in the acquisition of English prepositions more generally.

There are different accounts of the role of L1 in SLA theory. *Behaviorism* and *Monitor Theory* (see chapter 2.1) represent two extremes on a scale in this regard. While *Behaviorism* regarded L1 as the main source of everything that went wrong in L2, *Monitor Theory* emphasized innate knowledge in L2 acquisition and the role of L1 was believed to be relatively minor in comparison. In most contemporary SLA approaches and theoretical frameworks, however, L1 is incorporated as an important factor due to compelling evidence of its influence.

Generative approaches tend to emphasize the interaction between UG and L1, and suggest different accounts of second language acquirers' access to UG in SLA. Those who believe learners have access to UG have proposed models for how the acquisition of L1 constrains this access, e.g. in the sense that UG parameters have been set according to the input of L1 and need to be reset as to fit the input of L2 (see section 2.2.1). Usage-based approaches, on the other hand, hold that language learning essentially takes place through general cognitive mechanisms such as the ability to identify patterns in frequent input, making generalizations and categorizations, etc. as discussed in section 2.2.2. Approaches within this theoretical framework therefore often account for the role of L1 in SLA by suggesting that language learning is shaped by *experience*. Thus, the knowledge acquired through the acquisition of L1 constrains the analyses and hypotheses made in the acquisition of L2.

The influence of *transfer*, or *crosslinguistic influence*, is thus fairly established and more or less theory neutral within the field of SLA. Traditionally, scholars have emphasized transfer of structural linguistic features from L1 into L2 (Jarvis & Pavlenko, 2008:112). However, recent developments within SLA have expanded its scope in terms of topics investigated, e.g. directionality of *transfer* (also from L2 to L1), the number of languages acquired and how they influence each other, areas of language use where transfer is found and which processes are involved (Jarvis & Pavlenko, 2008:13). One relatively recent development is crosslinguistic influence in semantic domains within the framework of cognitive linguistics. As we have seen in section 2.2.2.1, this view emphasizes the relevance of *linguistic relativity*, *Sapir-Whorf hypothesis*, which suggests that structural differences between languages result in cognitive differences among speakers of different languages. Furthermore, there is convincing evidence that these assumed differences in cognition are relevant in relation

to SLA research, as they are believed to cause transfer of conceptual structures acquired in L1 into L2 production. This phenomenon is referred to as *conceptual transfer* (Jarvis & Pavlenko 2008:120). Conceptual transfer is a result of differences in conceptual categories in L1 and L2. Hence, in order to acquire the L2, the underlying conceptual categories that have been conventionalized in L1 must be altered where they differ from L2.

In the analysis in 5.3, I have demonstrated that the overwhelming majority of non-target prepositions are due to differences in the conceptual structuring of spatial relations between English and Norwegian and that the examples reflect “a Norwegian way of thinking”. Hence, I argue that most non-target prepositions in the sample that have been identified as L1 induced are cases of conceptual transfer as they reflect differences in the underlying “view” of spatial scenes (Jarvis & Pavlenko, 2008:119). In order to acquire the prepositions in L2, these underlying conceptual structures must be altered.

The analysis has shown that non-target prepositions among the Norwegian learners generally reflect conceptual transfer and that it occurs at different levels of representation. Norwegian and English generally share the conceptual structure of *space* in terms of *frames* of reference. Both languages generally favor an *intrinsic* frame, using the features of the object in question as reference (Jarvis & Pavlenko, 2008:142). However, as pointed out in chapter 2.2.2.1, they differ in terms of thinking for speaking. This is evident in the non-target usage of e.g. *on* for target *in*, in which case the sub-senses of position, *support* and *containment*, are encoded linguistically in both English and Norwegian, but apply in different contexts. The non-target examples from the corpus seem to reflect how the Norwegian learners mentally view the relation as *support*, whereas speakers of English view the same relations as *containment*. Following the cognitive perspective, this reveals that languages have a limited set of ways to encode characteristics of experienced reality and that these differ from one linguistic system to another (Bowerman 1989:150).

Another example include instances where learners have provided prepositions that express stative *position* like *on/in*, where English requires the dynamic *goal/destination* preposition *to*. The notion of *goal* is encoded linguistically in Norwegian as well but in other contexts. In these examples, Norwegian emphasizes the

state that is achieved when the goal is reached by construing it as a support relation with *on*, whereas English emphasizes the *path* involved by construing it as such, using *to*.

Furthermore, we have seen that English makes a distinction between *point* location expressed by *at*, and *position* expressed by *on*. This distinction is not made in Norwegian, and hence the target and native language “... differ in the internal structures of conceptual categories linked to partial translation equivalents” (Jarvis & Pavlenko 2008:143). Consequently, the large number of non-target uses of *on* for *at* in the corpus also reflects transfer, in a broad sense, in that acquiring this distinction is more difficult because it is not made in L1.

To sum up, Norwegian and English are similar in terms of spatial concepts that are available in conceptual and linguistic structure and how these are framed. They mainly differ in the internal structure of these concepts. The vast majority of non-target prepositions in the sample can thus be explained in terms of how the spatial configurations are applied in Norwegian in similar contexts.

As has been pointed out in chapter 2.2.2.1, one of the main principles in cognitive linguistics is that the language we speak affects our cognition and not solely the other way around. This principle provides an explanation for why prepositions are such a difficult area to acquire. The construals of spatial concepts and relations in Norwegian, “force” speakers to focus on those features of reality that are encoded in Norwegian, at the expense of other alternatives. The result is differences in thinking for speaking that evidently are hard to dispose of (Evans 2011:83).

Moreover, in cognitive accounts of what factors facilitate transfer, it has been proposed that learners’ perception of the distance between the native and the target language is crucial as well as their intuitions about language-neutral and language-specific elements. Hence, it has been hypothesized that learners will more likely transfer a feature from L1 if they perceive the target language to be similar to the native language and the language feature to be language-neutral rather than language-specific (Kellerman, 1977). As Norwegian and English are conceptually and structurally similar in relation to prepositions, this theory seems to account well for the finding that there is a substantial amount of conceptual transfer from L1 within this domain and, generally, that prepositions are hard, if at all possible, to acquire fully in L2.

5.6 Structural considerations in non-target production

Although it seems that most non-target usage of English prepositions are due to conceptual and semantic differences, I have also found that certain syntactic categories involving prepositions are more prone to errors than others. In investigating this further, I found that many non-target prepositions occur in constructions where the PP does not directly follow the verb, but where another element, e.g. the object, intervenes between the two. In this regard, I speculated that such constructions cause additional difficulty for the learner because they force him to pay attention to other sentence elements in addition to the verb and PP. Hence, structural characteristics might not explain these non-target uses, per se, but rather facilitate, or in this case impede, the production of the target form.

In relation to syntax more generally, the observation that grammaticized prepositions is not a large non-target category is interesting as it indicates that learners generally master the usage of these. In relation to IP theory this speaks contrary to the prediction that learners initially in input processing, focus their primary attention on meaning rather than function and so the expectation is that learners will tend to make more errors with relation to functional properties. However, as the pupils in the corpus are 15 and 16 years old and have been exposed to English for a long time their proficiency level might be at a different stage where different principles, e.g. the *obligatory first principle*, might constrain their input processing.

6. Conclusion

In this study my aim has been to contribute to the general field of second language acquisition. More specifically it has been to explore young learners' understanding and usage of prepositions in English. The observation that prepositions is a notoriously difficult area to acquire in L2, illustrated e.g. by the fact that prepositions are the largest category of errors in the corpus, intrigued my curiosity as to why this is the case. Within the framework of error analysis, I have therefore sought to investigate the following two research questions:

1. Are there certain syntactic and/or semantic subgroups of prepositions that are more prone to non-target usage than others?
2. How can we best understand and explain the patterns observed in non-target usage of prepositions by Norwegian learners? What mechanisms are involved in the choices they make in L2?

In order to address these two research questions I have analyzed a data sample collected from the young learner corpus CORYL. The compilers of the corpus have collected texts written by Norwegian school pupils, and have identified and categorized the most common errors.

In connection with the first research question I have analyzed and summarized the data in terms of syntactic and semantic features in order to state whether there are subgroups within them that are more prone to non-target usage. The analysis revealed that within the syntactic categories, PPs that function as adjuncts or complements/modifiers of verbs are the largest error categories and so are more prone to errors. The categories adjunct and modifier in verb phrase are significantly larger than complements, which indicates that optional elements are more prone to non-target usage. Moreover, non-target usage seem to occur more often with PPs functioning as adjunct or modifier/complement of verb, as these three categories are the largest and

PPs functioning as complement/modifier of a noun, adjective or adverb are significantly smaller. Furthermore, I found that *location* and *goal* prepositions are the two semantic categories most prone to errors in the sample.

Research question two sought to explain the patterns of non-target usage of prepositions observed among the learners. Here, I have summarized all the different non-target uses for one particular target preposition and discussed the patterns evident from this. The most notable finding was that the clear majority is explicable in terms of conceptual transfer from Norwegian to English. In these cases, the target and source language share the overall concepts that underlie the prepositions but differ in terms of the internal structure within the concepts, which results in non-target productions that reflect “a Norwegian way of thinking”. Some non-target structures, most notably those related to the preposition *about* are not traceable to Norwegian conceptualization. Here, most non-target structures seem to have been induced by features of the target language that are similar both in terms of structure and meaning, referred to in the literature as intralingual errors.

6.1 Outlook

There are a number of potential points of improvement and extensions of the present study that can contribute to increase the strength of the arguments presented here as well as generate further hypotheses and ideas to be tested. One of the weaknesses of the present study is that it only investigates interlanguage at one point in time, disregarding how mechanisms and strategies involved might alter and operate differently from one stage to another during the course of development. In this regard, a natural extension of this work is to investigate non-target usage of prepositions within other age groups in a similar fashion. Both younger and older learners would be interesting to investigate in order to find out whether patterns change significantly over time and, from the point of view of linguistic relativity, if the acquisition process *fossilizes* at one point i.e. the development stops before the learner has achieved native-like competence (Han&Odlin 2006:4). If so, this would indicate that language-specific spatial relations acquired in L1 shape our general perception of space to such an extent that many L2 learners of English will never master them completely.

Furthermore, as addressed throughout the text, an inherent weakness of error analysis as methodological framework is that it does not test what the learners actually know and master in L2 only what they have not acquired. Consequently, in terms of the overall competence of the learners, findings in error analysis are more reliable if interpreted in connection with findings in methods that test what learners have actually acquired and the extent to which this has been acquired. *Obligatory occasional analysis* is one method to test this, which provides a framework for analyzing how accurately learners use target forms (Ellis & Barkhuizen, 2005:73). *Frequency analysis*, is another method, which investigates the different devices learners use to express a linguistic feature (Ellis & Barkhuizen 2005:93) Hence, the implications of the findings in this study should be tested further by employing methodological approaches such as the two above. This would enable us to gain a more complete picture of L2 learners' competence in relation to their production of English prepositions.

Another crucial point to keep in mind about this data sample is that it reflects the production of *written* preposition usage and so learners have had time to consider the options and make a decision, unlike tests of spontaneous speech production. Hence, it would be interesting to explore how spontaneous L2 production of English prepositions differ from written production and what theoretical implications this might have for the relationship between competence and production.

Last but not least, the findings in the present study encourage further research on the phenomenon of conceptual transfer, which is part of relatively recent developments in research on cross-linguistic influence (Jarvis & Pavlenko 2008:15). It would be interesting to explore, compare and contrast how conceptual transfer is reflected in different features of Norwegian L2 learners' English interlanguage, as well as in the interlanguages of learners with other L1 backgrounds.

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