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Learning of Definiteness by Belarusian Students of Swedish as a Foreign Language

(Svensk sammanfattning)

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Abstract

Through a series of studies, this thesis investigates the learning of definiteness in Russian-speaking students of Swedish. A communicative oral-production task elicited modified and non-modified noun phrases in indefinite and definite contexts. Study I describes the development of the morphosyntactic structure through which Swedish encodes definiteness, the association between this structure and its meaning, and the relationship between those two tasks over time. Using an English version of the elicitation task and a test of metalinguistic knowledge, Study II examines the relationship between the learners' explicit knowledge of article semantics and their actual use of English articles. Adding a test of language-learning aptitude, Study III then explores both the influence of second-language English and that of aptitude on the development of Swedish. Finally, Study IV discusses the role of complexity and input frequency.

The main findings include that, at the onset of Swedish study, the learners had minimal knowledge of the morphosyntactic structure but were generally sensitive to the meaning of definiteness. However, knowledge of form developed over time while knowledge of meaning did not, and the two learning tasks did not appear to be directly related to each other. In addition, the learners were seldom aware that choosing between indefinite and definite articles requires the speaker to take the hearer's perspective, but this lack of metalinguistic understanding did not seem to affect their use of articles. Further, previous knowledge of English appeared to facilitate the development of a Swedish morpheme that is structurally similar to its English counterpart, while aptitude was associated with the development of a morpheme whose English counterpart is structurally different. Finally, the learners used high-frequency morphemes more consistently than low-frequency ones, and morphemes were more likely to be supplied in frequent constructions than in infrequent ones. These findings are discussed in relation to a modular, cognitive framework for language learning and use.

KEYWORDS: second-language acquisition, third-language acquisition, Russian, English, Swedish, definiteness, noun phrase, implicit and explicit knowledge, cross-linguistic influence, language-learning aptitude, complexity, input frequency

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Lund, April 2021
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Dedicated to Lo, Mattis and Edith

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1. Introduction

Learning a new language is an arduous endeavour that most people undertake once or several times throughout their lives. It basically involves acquiring new forms (e.g., phonological and morphosyntactic structures) and establishing associations between these forms and certain meanings (cf. Sharwood Smith & Truscott 2014). This process may be affected by a variety of linguistic and cognitive factors. For example, the learners' new language may be shaped by frequency-based regularities in the linguistic input received (cf. N. Ellis 2002). Forms may be complex and redundant; meanings may be abstract; and form–meaning mappings may be opaque, like when one form encodes several meanings or when one meaning is encoded by several forms (cf. DeKeyser 2005). Learners may draw upon knowledge of previously acquired languages (cf. Jarvis & Pavlenko 2008); they may be more or less aware of what they are learning (cf. Truscott 2015a); and they may be more or less skilled at different aspects of language learning (cf. Wen, Biedroń & Skehan 2017).¹ Eventually, the new language will make up a dense mental network of form–meaning associations that can be employed in various contexts for a wide range of communicative and cognitive purposes.

In this thesis, I explore the learning of a second language (L2) from a broad linguistic and cognitive perspective. Through a series of four studies, I investigated the development of a specific morphosyntactic form, the association between this form and its meaning, and a number of factors that may influence this development. Specifically, I report on a research project that focused on

¹ Other psychological and social factors, such as motivation, may also affect language learning (cf. Darvin & Norton 2015; Dörnyei 2014).

the acquisition of articles and definiteness in an L2. This topic is theoretically interesting because articles are “the most frequent forms that are available to learners in input” (Young 1996:136) and because the meaning they encode is “highly abstract” (DeKeyser 2005:5).

Languages that have articles, such as English, typically require them to be used (Lyons 1999), as shown by the fact that the nouns in (1) are not allowed to be bare. These articles indicate whether a noun phrase (NP) has indefinite or definite reference, that is, whether or not the referent is unique within some context shared by the speaker and the hearer (Hawkins 1991). By contrast, as shown in (2), in languages that lack articles, such as Russian, NPs are typically bare and may be interpreted as either indefinite or definite, depending on a number of linguistic and contextual factors (Brun 2001; Sussex & Cubberly 2006). Hence, native speakers of languages like Russian learning languages like English not only have to figure out that NPs require articles but must also associate articles with an abstract meaning which is not expressed by dedicated morphology in their first language (L1).

- (1) a. *white cat is sitting on car
b. {a/the} white cat is sitting on {a/the} car
- (2) belyj kot sidit na mašine
white cat sit on car
'{a/the} white cat is sitting on {a/the} car'

It is clear from the vast literature on articles and definiteness produced within the field of Second Language Acquisition (SLA) that both of those learning tasks – developing the form and associating it with its meaning – pose challenges to L2 learners whose L1 does not have articles (e.g., Avery & Radišić 2007; Chaudron & Parker 1990; Goad & White 2004; Huebner 1985; Ionin, Ko & Wexler 2004; Jarvis 2002; Pongpaiboj 2008; Robertson 2000; Schönenberger 2014; Sharma 2005; Snape 2006; Thomas 1989; Trenkic 2000). However, little is known about the relationship between the two tasks. In particular, to my knowledge, nobody has investigated whether *learning the form* is somehow related to *learning the meaning of the form*. It may be speculated that learners who are relatively susceptible to the form (i.e., articles) are also, in general, more sensitive to the abstract meaning of definiteness, and vice versa, but it is also possible that the two learning tasks rely on separate mental mechanisms that are only indirectly related to each other. I believe that finding this out is crucial for a better understanding of how languages are learned. One reason why this question has not been addressed previously may be that disentangling form from meaning in learner data is a complicated matter. As pointed out by

Kupisch (2006b:168), “the absence of a form may be due to the absence of the associated function, and vice versa”. In other words, when learners drop articles, it is difficult to tell whether they do so because they lack the morphosyntactic structure or because they fail to recognise the need to express the definiteness status of referents.

In the first study included in this thesis, I approached this form–meaning problem by investigating the development of definiteness in Russian-speaking learners of Swedish, a language that encodes definiteness using an NP structure which is more complex than the English one (e.g., Teleman et al. 1999). As shown in (3a–b), Swedish has an indefinite article (*en*) at the left edge of the NP, just like English. By contrast, definiteness is marked by a nominal suffix (*-en*), as shown in (3c). Moreover, adjectivally pre-modified, definite NPs require not only this definite nominal suffix but also a definite adjectival-agreement marker (*-a*) and a definite left-edge article (*den*), as shown in (3d). This is often referred to as the *double-definiteness* structure (e.g., Delsing 1993; Julien 2005; Lohrmann 2011).²

- (3) a. en katt
 INDEF cat
 ‘a cat’
 b. en vit katt
 INDEF white cat
 ‘a white cat’
 c. katt-en
 cat-DEF
 ‘the cat’
 d. den vit-a katt-en
 DEF white-DEF cat-DEF
 ‘the white cat’

Numerous studies have reported that L2 learners of Swedish (and Norwegian, which is similar to Swedish with respect to definiteness and NP structure), even at advanced proficiency levels, have difficulty with this structure (e.g., Axelsson 1994; Eriksson & Wijk-Andersson 1988; Jin 2007; Kołaczek 2018; Kowal 2011; Lahtinen 1993a,b; Nordanger 2017; Nyqvist 2013, 2015, 2018; Sundman 1995; Wijk-Andersson 1993, 1995). Indeed, it is often considered one of the most difficult components of Swedish grammar (e.g., Bolander

² When glossing, I use the following abbreviations: ACC=*accusative*; Adj=*adjective*; DEF=*any definite morpheme*; DEM=*demonstrative*; F=*feminine*; GEN=*genitive*; IMPERF=*imperfective*; INDEF=*indefinite article*; N=*noun*; NOM=*nominative*; PERF=*perfective*; SG=*singular*.

2012; Ekberg 2013; Ekerot 2011; Philipsson 2013). However, as noted by Ekerot (2011:150), the complexity and redundancy of that structure enables L2 learners to express – although in a non-target-like manner – the meaning of definiteness before they have acquired a complete representation of the grammatical structure that encodes this meaning in the target language. In my first study, I exploited this fact to tease apart knowledge of form and knowledge of meaning. In this way, I was able to examine the relationship between the two types of knowledge in an evolving language.

Specifically, to describe the initial L2 development of the form and meaning of definiteness, I followed a group of native speakers of Russian who were learning Swedish as a foreign language in Minsk, Belarus, during their first two terms of study. To obtain an idea of what longer-term development might look like, I also recruited a more advanced group of Swedish-learners in Minsk. This means that the study is both longitudinal and cross-sectional. Further, while most previous research into definiteness and NP structure in L2 Swedish drew upon free-production data (often written), I collected my data using a structured, communicative oral-production task that elicited a considerable number of NPs – adjectivally modified and non-modified ones in indefinite and definite contexts – from each participant. This enabled me to describe and analyse statistically the development of the four structures in (3) at an individual level and in a fairly detailed manner.

As mentioned above, the research project not only investigated the relationship between the development of a complex form and the association between this form and its abstract meaning, but also explored some linguistic and cognitive factors that may influence the growth of a new language: explicit knowledge, previously learned languages, language-learning aptitude, complexity and input frequency. When it comes to explicit knowledge, considerable attention has been devoted to L2 learners' *beliefs* about the meaning of articles and to the effects of explicit instruction on L2-article use (e.g., Abumlihah 2016; Akakura 2012; Butler 2002; Lopez 2015, 2019; Lopez & Sabir 2019; Master 1994, 1995, 2002; Sheen 2007; Snape & Yusa 2013; Yang & Ionin 2009). Some of these studies presented evidence suggesting that explicit instruction may have positive effects on article use. At the same time, experimental research has suggested that article semantics *can* be learned without an awareness of what is being learned (Chen et al. 2011; Leung & Williams 2012, 2014; Williams 2005). It is thus unclear what role explicit knowledge plays in L2 acquisition of articles and definiteness. In the second study included in the thesis, I explored this issue further by testing the Russian-speaking learners' explicit

knowledge of article semantics and by examining the relationship between this knowledge and their use of articles in a communicative situation.

Regarding cross-linguistic influence, there is clear evidence of L1 influence on L2 acquisition of articles and definiteness (e.g., Eriksson & Wijk-Andersson 1988; Jarvis 2002; Nordanger 2017; Pongpairaj 2008; Schönenberger 2014; Snape 2006). However, only a few studies have looked at the role of an L2 in the acquisition of articles and definiteness in a third language (L3) (cf. Aribaş & Cele 2021; Heikkilä 2008; Jaensch 2009; Lahtinen 2010; Leung 2005) and the results remain inconclusive, not least because possible confounding factors such as language-learning aptitude were not controlled for. In fact, only few studies have examined the relationship between cross-linguistic influence and language-learning aptitude (cf. Bokander 2021; Tolentino & Tokowicz 2014). Further, to my knowledge, Sheen (2007) is alone in having looked at the role of language-learning aptitude in the acquisition of articles and definiteness. In the third study included in the thesis, which I conducted together with Susan Sayehli, we examined the impact of both the Russian-speaking learners' use of L2-English articles and their language-learning aptitude on their evolving use of Swedish definiteness marking in the communicative oral-production task. In particular, by analysing separately the indefinite article (*en*), which is structurally similar to its English counterpart (*a/an*), and the definite nominal suffix (*-en*), which is structurally different from its English counterpart (*the*) and so new to the learners, we were able to explore the interplay between cross-linguistic influence and language-learning aptitude in L3 acquisition of definiteness marking.

Finally, regarding the role of structural complexity and frequency-based regularities in the linguistic input, numerous studies have shown that L2 learners from article-less L1 backgrounds are generally more likely to omit articles in adjectivally modified NPs (Art + Adj + N) than in non-modified ones (Art + N) (e.g., Pongpairaj 2007, 2008; Jaensch 2009; Snape 2006; Trenkic 2000, 2007). This has been accounted for both in terms of complexity and in terms of input frequency. Since modified NPs are more complex than non-modified ones, less attentional resources are left for producing the article when the NP includes an adjective. In the same time, since modified NPs are relatively infrequent in input, articles will be more strongly associated with nouns than with adjectives (cf. Austin, Pongpairaj & Trenkic 2015; Trenkic 2009). In the last study included in the thesis, I exploited some peculiarities of the Swedish NP structure to shed light on this issue. In particular, I investigated whether the Russian-speaking learners' production of the indefinite article (*en*) and the definite nominal suffix (*-en*) was differently affected by adjectival modification.

On the one hand, Swedish indefinite modified NPs (INDEF Adj N) are less complex than definite modified ones (DEF Adj-DEF N-DEF). On the other hand, the indefinite article is separated from its noun by an adjective (*en* Adj N) while the definite nominal suffix is not (Adj N-*en*). These facts enabled me to discuss the relative importance of linguistic complexity and probabilistic regularities in the linguistic input in L2 acquisition of functional morphology.

1.1 General aims

The aim of the research project was theoretical in nature. By exploring the development in an L2 of a complex morphosyntactic structure that encodes an abstract meaning, I wanted to fill those knowledge gaps mentioned above. In particular, I sought to advance our understanding of processes involved in L2 acquisition of definiteness and the Swedish NP structure. In the same time, I also sought to shed light on some linguistic and cognitive mechanisms underpinning L2 acquisition of grammatical form and meaning more generally.

Note that the thesis does *not* come with direct practical implications for L2 teachers or learners. Following Sharwood Smith (1994:5), I pursued my investigations “without paying attention to the concerns of teachers”. Nevertheless, I believe that the thesis may provide insights that can, in the long run, contribute to improving teaching methods used in language classrooms. Since many L2 learners of Swedish come from article-less L1 backgrounds and since almost every utterance includes an NP that forces a speaker or writer to make complicated pragmatic and grammatical decisions, it is important that teachers, like myself, are aware of the challenges that the form and meaning of definiteness entail.³ For example, language pedagogy should consider how learners’ use of articles is affected by their explicit knowledge of article semantics, by their previous linguistic knowledge and other individual factors, and by the nature of the target language itself.

Above all, I hope that both researchers and teachers, as well as language learners, will find the thesis interesting. In the end, it is intended primarily to take its readers on a voyage of discovery into the minds of people striving to master a fascinating grammatical phenomenon.

³ Common article-less L1s among L2 learners of Swedish include Armenian, Bosnian-Serbian-Croatian, Chinese, Finnish, Kurdish and Turkish (Källström 2012:59).

1.2 Terminological and conceptual notes

A few notes on central terms and concepts are warranted. As is standard, *second language*, or *L2*, is used as an umbrella term for all sorts of non-native languages, including foreign and third languages (L3s). Swedish is thus usually referred to as an L2, meaning only that it is not a native language. The exception from this rule concerns Study III, which investigated the effect of L2 English on the development of Swedish. In that case, Swedish is referred to as an L3. However, that does not exclude the possibility that Swedish was actually an L4 or L_n (cf. Hammarberg 2014). Importantly, by using the terms *second* and *foreign language* interchangeably, I do not exclude the possibility that the development of definiteness and NP structure may look different in “real” second-language learners (cf. Håkansson & Norrby 2010).

The distinction otherwise commonly made between second and foreign languages is related to the distinction between *acquisition* and *learning*, well known from Krashen’s work (e.g., Krashen 1982). Paradis (2004:234) has suggested *appropriation* as a term covering both notions. However, in this thesis, as in much of the SLA literature, *learning* and *acquisition* are used synonymously, not least since the two processes are difficult to distinguish empirically.

Regarding the grammatical phenomena investigated, I use the term *noun phrase*, or *NP*, without excluding the possibility that an NP may actually be better described as *determiner phrase* (DP), as suggested by Abney (1987), or a *definiteness phrase* (also DP), as suggested by Lyons (1999) – the DP analysis is widely accepted in contemporary generative linguistics. Further, the English words *a* and *the* are referred to as *indefinite* and *definite articles*, without excluding the possibility that indefinite articles should actually be seen as *cardinal* articles (Julien 2005; Lyons 1999). Regarding Swedish, *indefinite article* refers to the word *en* in (3a–b); *definite nominal suffix* refers to the morpheme *-en* in (3c–d); *definite adjectival suffix* refers to the morpheme *-a* in (3d); and *definite left-edge article* refers to the word *den* in (3d).⁴ Finally, it is unclear whether the term *definite NP* refers to an NP with definite reference or to an NP that is marked as definite, which is not necessarily the same thing in L2 data. Therefore I speak of *definitely marked NP* and *NP with definite reference*, respectively, at least when discussing learner data. The same applies to indefinite NPs.

⁴ The definite form of the adjective is traditionally referred to as the *weak* form (w). However, I follow Julien (2005) in glossing the adjectival-agreement marker *-a* as DEF, as mentioned.

1.3 Outline

This thesis is structured as follows. Chapter 2 provides a background to the project: it introduces a theoretical framework, discusses the notion of definiteness, reviews previous research on L2 acquisition of articles and definiteness, and finally presents the research questions of the project and the four studies included in the thesis. Chapter 3 describes the methods used throughout the four studies, and Chapter 4 then summarises those studies. Finally, Chapter 5 discusses the results and draws some conclusions.

2. Background

This chapter gives a background to the research project. First, I introduce a broad theoretical framework for language learning and use (Section 2.1). Second, with this framework as a backdrop, I discuss the notion of definiteness, both as a category of meaning and as a grammatical category in languages with and without articles (Section 2.2). Third, I review previous research into L2 acquisition of articles and definiteness (Section 2.3). Finally, I conclude the chapter by presenting the research questions of the project as well as the four studies included in the thesis (Section 2.4).

2.1 Theoretical framework

Language is both a social and a mental phenomenon (e.g., Hulstijn et al. 2014). The research project reported in this thesis focused on language as a mental phenomenon and consequently leaned towards cognitive linguistic theory. To simplify matters greatly, cognitive linguistic theories can be divided into empiricist and nativist ones. Empiricist theories are typically holistic and constructivist (e.g., Bates & MacWhinney 1989; Behrens 2009; N. Ellis 2002; O’Grady 2018). They explain language learning and use as the result of the individual’s experience (e.g., linguistic input) in combination with human social needs and domain-general cognitive abilities (e.g., general learning mechanisms). By contrast, nativist theories are typically modular and generative (e.g., Gil, Marsden & Tsoulas 2018; Rothman & Slabakova 2018; Towell 2004; White 2003). Without denying either the existence of general learning mechanisms or the importance of linguistic input, they hold that knowing a language is not like

knowing anything else, and that, for this reason, language learning and use must be explained in terms of domain-specific mental mechanisms.¹

In my work, I have employed a broad theoretical framework that brings together different cognitive and linguistic approaches: the Modular Cognition Framework (MCF; Sharwood Smith 2017; Sharwood Smith & Truscott 2014; Truscott & Sharwood Smith 2004; Truscott & Sharwood Smith 2019).² While MCF is closely linked to the nativist tradition, it also incorporates central notions from empiricist theories, such as *activation*, *association*, *competition* and *entrenchment*. It is intended to be wide and flexible rather than to generate falsifiable hypotheses (Sharwood Smith & Truscott 2014:4–5; cf. Slabakova 2008:90–92). Even so, it has enabled me to conceive of the distinction between linguistic form and meaning, the distinction between explicit and implicit knowledge, the ways in which cross-linguistic influence may be exerted, and the role of structural complexity and probabilistic regularities in the linguistic input.³ In essence, MCF allows me to express my research questions and account for my results in a coherent manner.

Of central importance to MCF is the notion of *modularity*, which refers to the idea that “mental phenomena arise from the operation of multiple distinct processes rather than a single undifferentiated one” (Barrett & Kurzban 2006:628). This view is most strongly associated with Fodor (1983, 1985), who identified several characteristic features of modular systems. For example, they are typically domain-specific, fast, automatic, unavailable to consciousness and informationally encapsulated, and their output is underdetermined or “shallow” (Fodor 1983:86). As an illustration, consider the Müller-Lyer illusion shown in Figure 2.1 (cf. Fodor 1983:66; Sperber 2001:51). Even if you *know* that the two horizontal lines are equally long, you can hardly prevent yourself from immediately perceiving the lower one as longer, and you cannot determine the reason for this perceptual illusion simply through introspection. This indicates that the mental processes generating the visual representation are fast, automatic, unconscious and informationally encapsulated: the visual system pays no heed to your declarative knowledge that the lines are in fact equally

¹ Gil et al. (2018:55) wrote that “the nativist view does not for a moment deny the existence of learning mechanisms, the statistical nature of learning or the fact that language acquisition is input/data driven (as some criticisms of the nativist approach have accused).”

² MCF may be better known as the Modular On-line Growth and Use of Language (MOGUL) framework, but “MOGUL is now the name of the research programme applying the MCF to any aspect of language cognition” (Sharwood Smith 2019:169).

³ However, not much has been said about language-learning aptitude within this framework (cf. Sharwood Smith & Truscott 2014:336).

long. The output of the visual system – the visual representation – is shallow in the sense that it does not account for all possible interpretations of the input data. Importantly, illusions like this are no peculiar exceptions. Instead, they inform us about the ways of the mind (cf. Sharwood Smith 2017:33).

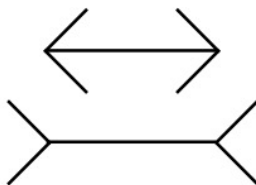


FIGURE 2.1: *The Müller-Lyer illusion*

MCF assumes that the mind, including language, is modular through and through. The framework, illustrated in Figure 2.2, is based on Jackendoff’s (2002, 2007) tripartite *Parallel Architecture*, according to which language comprises three separate but interconnected generative systems, or modules: Phonological Structures, Syntactic Structures and Conceptual Structures. Phonological Structures and Syntactic Structures together constitute the purely linguistic system. By contrast, Conceptual Structures represents both linguistic meaning, including semantics, pragmatics and discourse, and non-linguistic meaning, that is, *encyclopaedia* or “world knowledge” (Jackendoff 2002:123). In other words, the conceptual system is what enables us to think, reason and make sense of the world – Fodor (1975) called it *the language of thought*. Further, a central component of MCF is Perceptual Output Structures, which is an umbrella term for the various modules generating perceptual representations. All modules are informationally encapsulated: each of them stores and processes structures using its own code and in accordance with its own principles. However, modules communicate via interfaces, represented by arrows in the figure. Those interfaces allow structures in separate modules to be co-indexed (i.e., associated) with and co-activated by each other.⁴

⁴ Note that Conceptual Structures, Syntactic Structures, etc., are labels for mental modules. The terms *structure* and *representation* are used synonymously for anything stored and processed in these modules. Note also that Jackendoff (2002:125) assumed the existence of an interface directly between Conceptual Structures and Phonological Structures. This idea is incorporated in Sharwood Smith and Truscott (2014). In Sharwood Smith (2017), however, co-activation of conceptual and phonological structures is assumed to happen via Perceptual Output Structures.

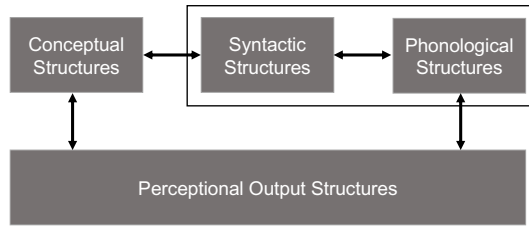


FIGURE 2.2: *The Modular Cognition Framework*

One characteristic of modular systems is their unavailability to consciousness. In principle, any piece of structure in any module could rise into awareness if it received a certain amount of activation, but most mental structures never reach that level. This is an effect of modules being specialised, efficient and informationally encapsulated systems. In practice, only perceptual representations ever receive the amount of activation needed to reach the awareness threshold. In other words, only perceptual representations, such as shapes, colours, sounds, smells and sensations, are available to consciousness. This is in line with the claim by Paradis (2009:37) that one can be aware only of “perceivable input”. In other words, we think through perception. However, thanks to the conceptual–perceptual interface, conceptual representations can be “projected into conscious awareness” (Sharwood Smith 2017:125). For example, when acquainting yourself with a new, abstract concept – say *MIND* – you cannot think of this concept without concretising it. You might recall for instance the auditory or visual form of the word *mind* or a visual representation of something associated with the concept, such as a brain or a model like the one in Figure 2.2. However, once that concept has eventually become strongly associated with a plethora of perceptual and other conceptual representations, you can think of it without resorting to a particular visual or auditory representation (cf. Sharwood Smith 2017:55, 83). This yields “an experience of fringe consciousness” of the concept itself (Sharwood Smith & Truscott 2014:292) – it *makes sense*.

Let us have a more detailed look at another example. When the perceptual system receives input consisting of a certain sequence of sounds, say those making up the word *cat*, it generates an auditory (i.e., phonetic) representation, [kæt], which is available to consciousness. This representation co-activates other perceptual structures, for example a visual representation of a cat, an auditory representation of the sound of a cat or an olfactory representation of

the smell of a cat, which are also available to consciousness. However, each of these representations gives meaning only by their co-activation of the conceptual structure CAT, which is *not* directly available to consciousness. It should be mentioned that, as far as the perceptual system is concerned, there is no difference between the auditory representation [kæt] and those of any other sound sequences. What is special about [kæt] is that the phonological module can match it by generating the phonological structure /kæt/, which is also unavailable to consciousness. Finally, the conceptual structure CAT and the phonological structure /kæt/ co-activate the syntactic category N (i.e., *noun*), which is also unavailable to consciousness. Importantly, these processes are incremental and bidirectional: a sound may simultaneously co-activate an image and a concept, just like a concept may simultaneously co-activate a sound and an image. And just like the processes that resulted in the visual illusion in Figure 2.1, language processing is rapid and uncontrolled: when hearing a language you know well, you cannot prevent your mind from generating phonological, morphosyntactic and conceptual structures.

Syntactic and phonological structures are thus unavailable to consciousness. Nevertheless, since language in a broad sense exists in the world, and since the conceptual system seeks to make sense of the world, language is also represented in the conceptual system. For example, there might be a concept like WORD despite the fact that, in MCF, there is no such thing as a word: what we call a *word* is an auditory or visual structure (or, in the case of tactile signing and Braille, a somatosensory structure) co-indexed with conceptual, phonological and syntactic structures (cf. Truscott & Sharwood Smith 2019:111). Likewise, we might have a conceptual representation of the Swedish NP structure, which can be projected into consciousness thanks to perceivable structures such as diagrams or syntactic trees. However, those diagrams and syntactic trees are not the *same* structures that would be found in the syntactic module: diagrams and syntactic trees are written in visual code while syntactic structures are written in syntactic code. Because such conceptual representations of language represent the output of the linguistic core system, they may be referred to as *metalinguistic*. There is no doubt that L2 learners can use metalinguistic knowledge to produce grammatical sentences in a language that they do not know well yet. Such metalinguistic knowledge can be more or less sophisticated. In theory it could be so effective as to mimic the output from the linguistic core system (cf. Paradis 2009).⁵ Moreover, conscious knowledge of language (i.e., metalin-

⁵ Note that metalinguistic knowledge is used not only by L2 learners. We all use it when we seek the right words in a conversation on a delicate topic, when we struggle to obey prescrip-

guistic knowledge) may contribute to the growth of the core linguistic system in interesting and important ways, although only indirectly (Sharwood Smith & Truscott 2014:286).

In MCF, “[a]cquisition is the lingering effect of processing” (Sharwood Smith & Truscott 2014:93). In other words, learning and processing are basically the same thing. Although all modules – or *processing units* – use their own codes, they share some basic processing principles. Figure 2.3 depicts two modules (which might be syntax and phonology or any other pair of interconnected modules in the mind) (cf. Sharwood Smith & Truscott 2014:18). Each of those two modules comprises a memory store and a processor. In the store can be seen simple structures, *primitives*, and complex structures built from such primitives. The processor can *activate* the structures, and when they are activated it can *manipulate* them. Activation means that the structure is raised to the top of the store – to the store’s *working memory*. Manipulation means that structures are combined in new ways. When structures in the two modules are simultaneously activated, the interface assigns an index to them (index “8” in the figure); this process is referred to as *co-indexation* (and could also be called *association*). Each module strives to match whatever input it receives from its interfaces by activating co-indexed structures or, if there are no ready-made structures with that specific index, generating new structures by combining existing structures in new ways. Thus, whenever a structure is activated in one module, all co-indexed structures are co-activated throughout the system; this process is called *spreading activation*. When a structure, simple or complex, is no longer used, it sinks back towards its *resting level* in the lower parts of the store – to *long-term memory*. Resting levels are relative: frequently used structures obtain relatively high resting levels as a result of what can be called *entrenchment*. In the perpetual *competition* between structures for being selected, a relatively high resting level together with a high degree of co-indexation increases the likelihood that a given structure will be selected by its processor. Hence, each time a structure is used, the likelihood that it will be used again increases. In sum, processing and learning involves creating new structures, co-indexing these structures with others, and raising their resting levels (e.g., Truscott & Sharwood Smith 2019:45).

Let us have a look at another example. Imagine that you see a green-coloured cat-formed shape (i.e., a green cat). Since green cats are rare, it is unlikely that

tive grammatical rules, or when we wish to give clear expression to a complex thought in a scientific paper, regardless of whether we are using an L1 or an L2. The core linguistic system is completely ignorant of such real-world difficulties.

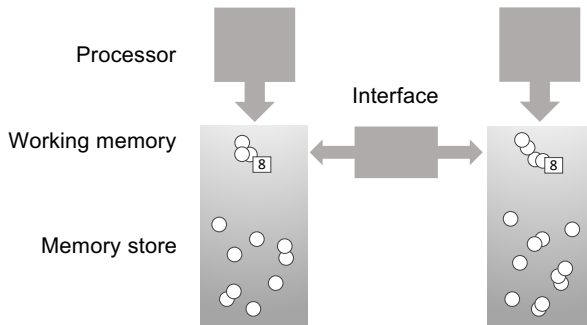


FIGURE 2.3: *Processing units*

your mind has a conceptual structure with which it can match this visual representation. However, spreading activation will cause existing concepts such as GREEN and CAT to be activated, and the conceptual processor can match the items of input from the visual system by combining them into a new complex concept (or thought): GREEN CAT. When this conceptual structure is no longer used, it sinks towards the bottom of the conceptual store. Provided that green cats do not begin to show up more regularly, the new structure will rest at a very low activation level, and eventually the memory may fade away completely. However, if the green cat continues to turn up, the conceptual structure GREEN CAT will have to be generated again, and eventually it will rest at such a high level of activation (and will also be extensively co-indexed with and co-activated by other structures) that it can be activated as a whole. As a result of processing, the conceptual system has grown, and you as an individual have “learned” something. Note that it has all happened automatically: upon seeing the green cat, you had no way to prevent the conceptual system from generating the new conceptual structure GREEN CAT.

In MCF, language is learned in the same way. If a speaker of English hears someone say *frag*, his or her perceptual system will automatically generate an auditory representation, [fræg], which the phonological system will match by generating a phonological representation, /fræg/. The phonological system does not know that *frag* is not an English word – it just seeks to match whatever input it receives and has no clue that the conceptual and syntactic modules fail

to match that input.⁶ Now, imagine instead that someone points to a strange animal – say, a green cat – and utters: “Do you see that frag over there?” In this scenario, the visual representation of the green cat will be co-indexed with the auditory representation [fræg], these perceptual structures will be co-indexed with the new concept (generated as described above), and syntax will successfully co-index the new phonological structure /fræg/ with the syntactic representation N thanks to the syntactic pattern – or *construction* – activated. The individual has learned a new word.

Note that when the word *frag* is added to the linguistic repertoire, the syntactic and phonological modules have no clue whether this word belongs to English or to some other language. In fact, they are not aware that there are different languages, or even that there is such a thing as language (well, they are not aware at all) – they are just highly efficient, specialised, informationally encapsulated processing units striving to match whatever input they receive. From this follows that all languages in a multilingual mind are simultaneously active, and that structures from different languages compete with each other for selection in language use (cf. Bates & MacWhinney 1981, 1989; MacWhinney 1997). This theoretical prediction has been found to hold true in experimental studies on cross-linguistic syntactic priming, which have shown that activation of a syntactic structure in one language primes corresponding structures in other languages (e.g., Chen, Jia, Wang, Dunlap & Shin 2013; Hartsuiker, Beerts, Loncke, Desmet & Bernolet 2016; Loebell & Bock 2003). In some sense, then, MCF is compatible with claims put forward under notions such as *multi-competence* (e.g., Cook 2016) and *translanguaging* (e.g., Otheguy, García & Reid 2015; Wei 2018) that reject the psycholinguistic validity of separate languages in an individual’s mind. For example, Otheguy et al. (2015:281) wrote: “The two named languages of the bilingual exist only in the outsider’s view. From the insider’s perspective of the speaker, there is only his or her full idiolect or repertoire, which belongs only to the speaker, not to any named language.” Nevertheless, in MCF, phonological and syntactic structures that are consistently co-activated constitute dense mental networks that can reasonably be conceived of as separate languages. This is in line with the statement by Jarvis and Pavlenko (2008:18) that “while it is true that in some contexts linguistic codes may not be easily separable [...] we view an L2 user’s languages as more or less separate (though permeable) entities, not only as a linguistic reality but also as a psychological one”. In other words, if the new word *frag*

⁶ Johan Segerbäck pointed out to me, however, that the word *frag* may have a meaning to some speakers of English.

is consistently used together with English words, in English structures, and in contexts where English is used, it will become a part of a mental network – the English language – that is not only a social construction but a psychological reality (cf. Paradis 2004).

To recapitulate, by incorporating central insights from both modular and constructionist approaches, MCF offers a coherent view on language learning and use. It shares some ground with contemporary developments in generative acquisition theory, such as the micro-cue model of Westergaard (2019:21), where “language acquisition is learning by parsing”, and with the “neo-constructivist approaches” discussed by Grimstad, Riksem, Lohndal and Åfarli (2018:202). At the same time, it also shares some ground with empiricist theories, such as the emergentism of O’Grady (2018:50), where language learning is shaped by “processing pressure”. As was mentioned above, in this thesis, MCF enables me to conceive coherently of the distinction between grammatical form and meaning, the distinction between explicit and implicit knowledge, the ways in which cross-linguistic influence can be exerted, and the role of frequency-based regularities in the linguistic input.⁷ In the next section, I use MCF as a backdrop to a description of *definiteness* as a conceptual representation co-indexed with a syntactic one.

2.2 Definiteness

In line with the Modular Cognition Framework (MCF) presented above, I distinguish between definiteness as a *category of meaning* and definiteness as a *grammatical category* (cf. Lyons 1999). Definiteness as a category of meaning is assumed to be an abstract, universal component of human conceptualisation (Section 2.2.1). Some languages – including English and Swedish, the target languages of the learners investigated in this project – encode this meaning morphosyntactically, typically using articles (Section 2.2.2). By contrast, the native languages of those learners – Russian for all of them and Belarusian and Ukrainian for some of them – do not have articles, like the majority of the world’s languages. These languages express the meaning of definiteness without articles, and it is unclear whether they encode definiteness morphosyntactically (Section 2.2.3).

⁷ However, it should be pointed out that the research project reported has not used data that can actually reveal how Swedish NPs are generated in the minds of Russian-speaking learners.

2.2.1 Definiteness as a category of meaning

The natural approach in order to investigate the meaning of definiteness is to examine in what contexts indefinite and definite articles are used. Typical uses of the English definite article are given in (4–7), which are adapted from Lyons (1999:3).

- (4) An elegant dark-haired woman, a well-dressed man and two children entered the compartment. I immediately recognised *the woman*.
- (5)
 - a. Just give *the shelf* a quick wipe, will you, before you I put the vase on it.
 - b. Put these clean towels in *the bathroom* please.
 - c. I hear *the prime minister* behaved outrageously today.
 - d. *The moon* was bright last night.
- (6)
 - a. I had to get a taxi from the station. *The driver* told me there was a bus strike.
 - b. They just got in from New York. *The plane* was five hours late.
- (7) *The bloke Ann went out with last night* phoned a minute ago.

A widespread misconception among non-linguists is that the definite article is used if the NP refers to a specific referent, not just to anyone. This is not completely unreasonable given that all NPs emphasised in (4–7) do indeed refer to specific referents: a specific woman, a specific shelf, a specific bathroom, etc. However, example (4) clearly demonstrates that the concepts of DEFINITENESS and SPECIFICITY are not the same thing: the woman is first referred to with an indefinite NP – “an elegant dark-haired woman” – although the speaker undoubtedly refers to the same specific woman both with this indefinite NP and with the definite NP “the woman”. Nevertheless, DEFINITENESS and SPECIFICITY are related concepts, and the role of specificity is often discussed in the literature on L1 and L2 acquisition of articles and definiteness (e.g., Ionin 2003; Ionin et al. 2004; Ionin, Zubizarreta & Philippov 2009; Karmiloff-Smith 1981; Kupisch 2006a; Schönenberger 2014; Svartholm 1978; Trenkic 2008; Tryzna 2009; Zdorenko & Paradis 2008). Some notes on specificity are therefore warranted here.

The distinction between specific and non-specific reference can be thought of in (at least) two different ways (Lyons 1999:165–178; Teleman et al. 1999:169–176; Trenkic 2008:2–3). In the first sense, the difference between specific and non-specific reference lies in whether or not the NP presupposes the existence of a particular referent, or, put differently, whether the speaker has a particular referent in mind. In languages like English and Swedish, NPs occurring in non-affirmative and modal sentences are often ambiguous in this respect. For example, the sentence in (8a) does not necessarily presuppose the

existence of a green cat: it could be either that the speaker wants to see a certain green cat or that the speaker just wants to see *any* green cat.⁸ In the second sense, “the crucial aspect is not whether the speaker has a particular referent in mind, but whether he intends to refer to it” (Trenkic 2008:3). As the distinction here relates to whether the NP introduces a new discourse referent, Trenkic (2008:3) suggested the term *discourse specificity*; others speak of *referentiality*, as the distinction also lies in whether the speaker intends to *refer* (Lyons 1999:173). For example, the NP “a thief” in (8b) is specific in the first sense above – it presupposes the existence of a particular referent – but maybe not in the second sense: it might be the case that the speaker has no intention of introducing a new referent in the discourse but only wants to report what happened during the previous night.⁹

- (8) a. I want to see *a green cat*.
 b. We had *a thief* here last night.

I will not delve further into the interactions between these two types of specificity here; suffice it to say that Lyons (1999) drew two conclusions from his survey of the world’s languages. First, languages that use dedicated morphology to mark the distinction between referentiality and non-referentiality also mark the distinction between specificity and non-specificity (while the opposite does not hold true). Second, no languages make a distinction between specific and non-specific reference (in either sense) in definite NPs. In other words, while there are languages that have an indefinite specific article, like the Samoan *le*, there are no languages that have a definite non-specific article. Thus, the two types of specificity are related to each other, and it seems that human languages treat specificity as a type of indefiniteness. The main point here, however, is that definiteness and specificity are different things: if (4) were translated into Samoan, the specific article *le* would have been used in both NPs referring to the elegant dark-haired woman.

⁸ This phenomenon is often referred to as *scope ambiguity*: the existential quantifier *a* can be within the scope of the logical operator *want* or vice versa. To dissolve the ambiguity, (8a) can be rephrased as (i) or (ii) (cf. Lyons 1999:166–170; Trenkic 2008:2).

- (i) There is a green cat that I want to see.
 (ii) I want there to be a green cat, and I want to see it.

⁹ In this context, it should be pointed out that language does not refer to the world but to “the world as conceptualized by the language user” (Jackendoff 2002:304). In other words, what is crucial is how the speaker conceptualises of the referent.

Linguists thus agree that the definite article does not express specificity (at least not *only* specificity). However, there is little by way of consensus on how to define its meaning. Whereas semanticists and logicians often define the meaning of definiteness in terms of *uniqueness*, pragmatists prefer to speak about *familiarity* or *identifiability*. In Russell's (1905) well-known analysis, the sentence *The king of France is bald* is true only if (i) there is a king of France, (ii) this person is unique, and (iii) this person is bald. On this view, the definite articles in (4–7) are felicitous because there is one unique woman entering the compartment, one unique shelf to put the vase on, one unique bathroom where towels are kept, one unique moon orbiting the Earth, one unique driver of the taxi, etc. It should be noted that Russell's analysis accounts only for singular count nouns, but definite articles are used with plural nouns and non-count nouns as well. For this reason, Hawkins (1978) introduced the term *inclusiveness* as a more accurate alternative to *uniqueness*: “a definite NP involves reference to the totality of entities or mass that satisfy the description of the NP” (Hawkins 1991:409). For example, the sentences in (9) are true only if the speakers have corrected *all* the exams and taken care of *all* the laundry. If the totality of entities is one singular, countable entity, this entity is unique; in other words, uniqueness is a special type of inclusiveness (cf. Lyons 1999:12).

- (9) a. I corrected *the exams* yesterday night.
 b. I've taken care of *the laundry*.

By contrast, on the *familiarity* or *identifiability* view, an NP is definite if its referent is in some sense familiar or identifiable from the hearer's point of view. This would explain the alternation between the indefinite and the definite articles in (4): the indefinite article is used to introduce a new referent, unfamiliar to the hearer, and the definite article is then used when that referent has been introduced and so has become familiar to the hearer. This is reflected, for example, in Heim's (2003) file-change semantics, where each discourse referent is represented by a file card: the indefinite article instructs the hearer to put a new card in the file, while the definite article instructs the hearer to find and update an existing file card, representing a familiar discourse referent. However, Lyons (1999:6) argued that the notion of identifiability characterises the use of definite articles better than the notion of familiarity does. For example, in (5a), use of the definite article is felicitous even if the hearer is unaware of the existence of a shelf before the sentence is uttered, meaning that the shelf is unfamiliar. On this view, the definite article does not instruct the hearer to search for a familiar referent but rather signals that the hearer is in a position to identify a referent.

There is obviously some overlap between the concepts of uniqueness (or inclusiveness) and identifiability (or familiarity): something that is unique is typically identifiable because of its uniqueness. However, there are cases where only one of the two concepts can account for the use of the definite article. For example, in a room with three doors, one of which is open, it makes perfect sense to utter the sentence in (10a). This is not because the door is unique – the NP does not refer to the totality of objects satisfying the description *door* – but because the hearer is in a position to identify which door the speaker refers to (Lyons 1999:9). By contrast, for the sentences in (6) above, the hearer is probably not in a position to identify the taxi driver or the plane. Rather, the use of the definite articles there seems to be felicitous because a taxi comes with a unique driver and because there was probably one unique plane that was five hours late, respectively. This is even more evident in (10b): there can be only one unique winner of the competition, but this winner is certainly not identifiable *before* the race.

- (10) a. Can you close *the door*, please?
 b. After the race I want to speak to *the winner*.

Some avoid dealing with the uniqueness–identifiability distinction by resorting to the term *uniquely identifiable* (e.g., Teleman et al. 1999:155). However, according to Lyons (1999:15), this terminology adds nothing to our understanding of definiteness as “it either represents a failure to appreciate the difference between uniqueness and identifiability, or is merely equivalent to ‘identifying’, or ‘identifying unambiguously’.” The solution offered by Lyons (1999:274–278) to the uniqueness–identifiability problem is simple and attractive. In his view, there is no reason to assume that the definite article, seen as representing a grammatical category, is associated necessarily only with a *single* semantic concept. In support of this, he begins by pointing out that, from a historical perspective, the grammatical category of definiteness is the grammaticalisation of the concept of IDENTIFIABILITY, just like the grammatical category *tense* is the grammaticalisation of TIME. However, the grammatical category of tense has come to be co-indexed not only with the concept of TIME but also with those of POLITENESS and MOOD, as can be seen in sentences like *Could you open the door, please?* and *If I were you ...*, where the past-tense forms express politeness and subjunctive mood, respectively. Hence it is perfectly reasonable that the grammatical category of definiteness could have come to be co-indexed not only with the concept of IDENTIFIABILITY but also with that of UNIQUE-

NESS.¹⁰ This solution is highly compatible with MCF, where the relationship between syntax and meaning is quite loose.

Others have sought to unite the notions of *uniqueness* and *identifiability* by relativising uniqueness to context. The work by Hawkins (1978, 1991) represents the most influential attempt to do so. Hawkins strove to bridge the gaps between syntactic, semantic and pragmatic accounts of definiteness by incorporating Russell's (1905) uniqueness claim in a psycholinguistically plausible model (Hawkins 1991:406), arguing that the definite article implies that the referent is unique within a context – a *pragmatic set* – which is mutually manifest on-line to the speaker and to the hearer. That something is *mutually manifest* here refer to the situation when both the speaker and the hearer are able to mentally represent it and conceive of it as possibly existing (cf. Wilson & Sperber 2012). By *on-line*, Hawkins means that the pragmatic set need not necessarily be manifest to the hearer *before* the definite article is uttered, but when it is, the hearer must be able to construct the set immediately. In other words, a definite article signals that the referent is *unique* within an *identifiable* – or *conceivable* – context (referred to as *frame of identification* in Teleman et al. 1999:156).¹¹

If we apply Hawkins's (1991) analysis to the definite articles in (4)–(7), we see that the referent of the NP in (4) has been mentioned in previous discourse, which thus constitutes the shared context. Here, the definite article is used *anaphorically*. This is the prototypical use of definite articles, often emphasised in L2 textbooks (cf. Kołaczek 2018; Nyqvist 2013). However, it is not their most common use in authentic language use (e.g., Fraurud 1990), where *situational* uses such as those in (5) are more frequent. Here, the use of the definite article does not depend on previous discourse but on the *deictic* context, which constitutes the shared context. The deictic context can be immediate, as in (5a) where the referent is right in front of the interlocutors as they speak. But it can also be wider, as in (5b) where the speaker presumably refers to the bathroom of the present house, in (5c) where the speaker refers to the prime minister

¹⁰ In languages like Samoan, the grammatical category of definiteness has even lost its association with the concept of IDENTIFIABILITY and has instead become co-indexed with the concept of SPECIFICITY (Lyons 1999).

¹¹ “The merit of [Hawkins's] work”, Trenkic (2004:37) wrote, “is that he brought the different traditions together and made them benefit from each other. Perhaps the most important contribution is that he formalised the intuitively appealing but vague pragmatic notion of identifiability into ‘mutual manifestness of the existence and uniqueness of a referent within a [pragmatic set].’” For more discussion of Hawkins's theory, see Lucas (2011:162–173), Lyons (1999:260–265) and Trenkic (2000:29–50).

of the present country, and in (5d) where the speaker refers to the moon of the present planet. To some extent, such uses depend on *world knowledge*: the hearer is assumed to know that there is a bathroom in the house, a prime minister in the country, and a moon in the sky. Further, anaphoric and situational use of definite articles can be combined, as in the (6) examples, where the definite NP *the driver* is licensed by the previous mention of a taxi, and the definite NP *the plane* is licensed by the previous mention of coming in from New York. Here, the hearer is assumed to know that a taxi includes a driver and that travelling from New York may involve a plane. Hawkins (1978, 1991) speaks of *associative uses*; another commonly used term is *bridging*; and Teleman et al. (1999) speak of *indirect* reference. In (7), finally, the use of the definite article is licensed by the modifying relative clause following the noun, which enables the hearer to construct a pragmatic set – a frame of identification – on-line.

Given all the mindpower that has clearly been devoted to pinpointing the meaning of definiteness, one may well wonder exactly what it is about this concept that makes it so abstract. In this context, it should be noted that the definite article only *implies* that the referent is unique within a shared set. Hawkins (1991) here leaned on Grice's (1975) notions of *conventional* and *conversational implicatures* by pointing out that the definite article *conversationally* implicates that the referent is unique within the *most accessible* pragmatic set but *conventionally* implicates that the referent is *unique* (within some shared set). *Conversationally* means that the implicature is cancellable; *conventionally* that it is not. For example, while it would be expected that the hearer in (11a) assumes that the referent is unique within the most accessible context (i.e., the circus), there would be nothing odd about the speaker actually thinking about another context that the two of them share (say, the party they talked about recently) – the implicature that the referent is unique within the most accessible set was cancelled. By contrast, as shown in (11b), it does not make sense to speak of *the clown* if there were in fact several clowns in the circus – the implicature that the referent is unique is *not* cancellable.

- (11) a. “What did you do today?”
 “I took Amanda to the circus. And then I called *the clown*.”
 “The clown in the circus?”
 “No! The clown we were talking about hiring for Amanda’s party of course.”
- b. “What did you do today?”
 “I took Amanda to the circus. Guess what, she spoke to *the clown*.”
 “Amanda must have been happy that there was a clown!”
 “Yes! In fact there were many clowns.”

Yet, the definite article does not *explicate* that the referent is unique, meaning that the speaker’s use of the definite article in (11b) does not render the ut-

terance *false*. This is in line with Jackendoff's (2002:394) suggestion that Conceptual Structures are divided into a descriptive tier that encodes propositions, which have truth value, and a referential tier, which does not affect the truth value of an utterance. Articles are co-indexed with the referential tier, meaning that they do not affect the truth value of an utterance. On a similar note, Lucas (2011) suggested that articles are *procedural* rather than *conceptual* words: they do not encode any phenomenal content but instruct the hearer how to construct a conceptual representation of the referent (cf. Žegarac 2004). In MCF, all of this together readily explains the abstractness of the meaning of definiteness. Specifically, since the meaning of definiteness is not co-indexed with any perceptual representation, it cannot be projected into consciousness through the perceptual system. In other words, the meaning of definiteness is unavailable to consciousness and inherently abstract.

Finally, a few notes on the meaning of the indefinite article are also warranted. According to Lyons (1999), the indefinite article does not encode indefiniteness: it does not signal that the hearer must *not* search for a unique referent within a shared set (at least not directly). Instead, the indefinite article, just like the definite one, conversationally implicates that the referent is to be found within the most available shared context (Hawkins 1991). This implicature is of course cancellable, as in the case of the definite article: it is natural that the hearer in (12a) thinks that the speaker refers to a clown in the circus (the most available context), but there is nothing odd about this interpretation turning out to be wrong. With regard to uniqueness, the indefinite article is typically neutral: the use of the indefinite article in (12b) does not imply that there were several clowns in the circus. Interestingly, however, there seem to be cases where the indefinite article does actually imply uniqueness, as shown by the fact that (13a) is felicitous while (13b) is odd (Hawkins 1991:430–431). There are also cases like (14), where the definite article cannot be used (unless the speaker is looking for a particular mushroom) despite the fact that the referent is both unique and identifiable on-line. And finally, there are cases like (15) where it appears to make no difference whether the indefinite or definite article is used. It thus seems that the indefinite article does not carry an indefinite meaning. Instead, the indefinite article simply does *not* signal that listener must find a mutually manifest pragmatic set and construct a mental representation of a referent that is unique within it.

- (12) a. “What did you do today?”
 “I took Amanda to the circus. And by the way, I spoke to *a clown*.”
 “A clown in the circus?”
 “No! A clown in the subway. About Amanda’s party.”

- b. “What did you do today?”
 “I took Amanda to the circus, and guess what, she spoke to *a clown*.”
 “Wow! Were there many clowns?”
 “No, just that one.”
- (13) a. Sweden has *a king*.
 b. # Sweden has *a member of parliament*.
- (14) a. Look, I found *a mushroom*!
 b. # Look, I found *the mushroom*!
- (15) a. Look at the car with *a cat* on it!
 b. Look at the car with *the cat* on it!

To summarise this section, definiteness and specificity are different things, but it could be that these two notions are related in the sense that the distinction between specific and non-specific reference is relevant only for indefinite referents. Further, definiteness can be conceived of in terms of either uniqueness or identifiability. Lyons (1999) argues that definiteness, as a grammatical category, is the grammaticalisation of the concept of IDENTIFIABILITY, but that it can also be associated with other concepts, such as UNIQUENESS. In Hawkins (1978, 1991), identifiability pertains to the context – the pragmatic set – while uniqueness pertains to the referent within this context. Further, the meaning of definiteness is assumed to be unavailable to consciousness (i.e., inherently abstract). Finally, the indefinite article seems to be neutral with regard to definiteness. In the next section, I will discuss how definiteness as a category of meaning is co-indexed with a syntactic category in languages with articles, such as English and Swedish.

2.2.2 Definiteness as a grammatical category

The previous section focused on the *meaning* of definiteness. Here, I turn instead to definiteness as a grammatical category – the *form* of definiteness in a sense. As mentioned above, Lyons (1999) defined definiteness as a purely grammatical category. According to him, this grammatical category is instantiated in languages that have articles, such as English and Swedish. Whether it may also be instantiated in languages without articles, such as Russian, will be discussed in the next section.

There are at least three reasons for taking definiteness to be a grammatical category (i.e., to be represented in syntax) in languages that have articles (referred to below as *article languages*). First, as shown in (1) in the Introduction, the use of articles is obligatory in such languages. There cannot be a communicative reason for this. Articles are indeed found in languages all over the world,

not least in many European languages (in most Germanic and Romance languages, some Balkan languages and Celtic languages, and Basque), but the majority of the world's languages do not have them (Dryer 2013a,b; Haspelmath 1998). This indicates that the mandatory use of articles cannot be explained in terms of communicative needs. In fact, Trenkic (2000:100) demonstrated that “the ‘identifiability’ status of referents is often easily computed without the help of the articles”. The conclusion must be that speakers of article languages use articles because their grammars *require* them to do so.

Second, the fact that articles have their own dedicated position in the NP – normally at the left edge (Dryer 2013a,b) – also indicates that they are treated as a separate category in syntax. In the English NP, adjectives appear directly to the left of the noun, quantifiers directly to the left of the adjective, and articles at the left edge, as shown in (16). Even though there are regularities in languages that need not necessarily be explained in syntactic terms, the ordering of English NP constituents is so strict that it is reasonable to assume that articles, quantifiers, adjectives and nouns represent different grammatical categories (cf. Adger 2003).

- (16)
- a. the few green cats
 - b. *the green few cats
 - c. *few the green cats
 - d. *few green the cats
 - e. *green few the cats
 - f. *green cats few the
 - g. *few green cats the
 - h. *the cats green few

Third, the use of articles is highly restricted (cf. Adger 2003:250). For example, the English definite article cannot be used together with demonstrative and possessive pronouns, as shown in (17). It could be speculated that this is because such combinations would render the phrase tautological, but that argument does not hold with regard to possessive pronouns, because they are *not* inherently definite (although they might appear to be so to speakers of English and Swedish). This can be demonstrated by comparing the two constructions in (18): when the possessive stands to the left of the noun (*my cat*), it precludes both the indefinite and the definite article, and the phrase must be interpreted as definite. By contrast, when the possessive stands after the noun (*cat of mine*), either the indefinite or the definite article is felicitous. The fact that there is nothing odd about the phrases *a cat of mine* and *the cat of mine* suggests that the phrases *a my cat* and *the my cat* are disqualified not for semantic but for grammatical reasons. This is even more evident if we look at the Italian NP

in (19), where the pre-nominal possessive does in fact combine with articles, indefinite or definite ones (just like any adjective). Clearly, there is no inherent relationship between the semantic concepts of POSSESSION and DEFINITENESS (Lyons 1999:22–26; Trenkic 2000:82).

- (17) a. *the {that/my} cat
 b. *{that/my} the cat
- (18) a. *{a/the} my cat
 b. {a/the} cat of mine
- (19) {un/il} mio gatto
 {INDEF/DEF} my cat
 ‘{a/the} cat of mine’

Regarding demonstratives, it may seem at first sight that the tautology argument makes some sense in that demonstratives, unlike possessives, are indeed inherently definite: since they “point to” their referents, those referents are by definition identifiable to the hearer. However, considering that human languages overflow with redundancy and tautology (not to mention superfluity and surfeit), the argument still does not hold. For example, as can be seen in (20), there is nothing odd about a Swedish demonstrative (*den här*) co-occurring with the definite nominal suffix (*-en*), despite the fact that the meaning generally associated with the suffix is already expressed by the demonstrative. Hence there seems to be no reason why tautology should be what precludes the co-occurrence of demonstratives and definite articles in (17).

- (20) den här katt-en
 this cat-DEF
 ‘this cat’

Taken together, the facts that articles are obligatory, that they can appear only in a certain position and that they find themselves in complementary distribution with other determiners suggest that, in languages with articles, the meaning of definiteness is co-indexed with a syntactic position that must be filled with lexical material for the NP to be interpreted as definite. In English, both demonstratives and pre-nominal possessives are found in this position, whereas in Italian, possessives are not. This means that articles, in the words of Lyons (1999:290), are merely “meaningless fillers” – they are “pleonastic” words that give a phonological realisation to the grammatical category of definiteness when the NP does not include any other lexical item capable of doing that. Hence, the reason why the English phrase *my cat* is interpreted as definite is not that possessives are semantically definite, but that English pre-nominal possessives stand in this position.

In phrase-structure grammar, articles were traditionally taken to occupy the specifier position of the NP (cf. Culicover & Jackendoff 2006). Since Abney (1987), however, mainstream generative linguistics has generally assumed that articles are heads in a phrasal projection, the determiner phrase (DP), which takes the NP as its complement (e.g., Adger 2003; Julien 2005; Lyons 1999; Salzmänn 2020). Salzmänn (2020) reviewed a number of arguments put forward in the NP–DP debate over the years, and he found weaknesses in every one of them.¹² However, for the present purposes, it is not crucial to take a stand with respect to the exact nature of the syntactic representation of definiteness. Suffice it to say simply that there *is* a syntactic position, D, at the left edge of the NP (or DP).

Let us now turn to the English indefinite article (*a/an*). It should come as no surprise that indefinite and definite articles do not co-occur, as shown in (21). However, it is not perfectly clear whether this is because the two articles compete for the same syntactic position, because they are semantically incompatible, or because some phonological rule precludes two weak (unstressed) forms from co-occurring at the left edge of the phrase (Lyons 1999). As shown in (22), the indefinite article cannot co-occur with a quantifier such as *one* while the definite article can do so. This indicates that the indefinite article is not found in the same syntactic position as the definite one, D, but in the quantifier position directly to the right of D. Indeed, Lyons (1999) argued that the indefinite article does not actually encode indefiniteness, but cardinality. This idea is supported by the fact that indefinite articles seem to be neutral with respect to definiteness to some extent, as shown in the previous section. The idea is also supported by the fact that the indefinite article, contrary to the definite one, cannot be used with plural and mass nouns, as shown in (23). Further, the idea that indefinite and definite articles are found in different positions resonates with the suggestion that definite articles are meaningless fillers in that they bring no meaning to the phrase, but simply impose a definite reading onto an NP by filling the D position. On this view, indefinite NPs are characterised by their empty D position (or by their *lack* of a D position).

¹² Salzmänn (2020) himself put forward a new argument in favour of the DP hypothesis. In Slavic languages, there is sometimes a mismatch between grammar and semantics with regard to gender, to the effect that a noun referring to a male person may have female gender. In colloquial language, determiners of such nouns are sometimes inflected based on semantic rather than grammatical gender. When this happens, a predicative adjective will agree with the determiner rather than with the noun, indicating that the determiner is actually the head of the phrase.

- (21) a. *the a cat
 b. *a the cat
- (22) a. *a one cat
 b. the one cat
- (23) a. *a {laundry/exams}
 b. the {laundry/exams}

Like Lyons (1999), Julien (2005) assumed that indefinite and definite articles originate in different positions. However, she went on to argue convincingly that indefinite articles then move upwards, ending up in the same position as definite articles (i.e., D). In her analysis, this is necessary for the phrase to be able to refer. For the present purposes, again, it is not crucial whether the definite and indefinite articles are in the same position or in adjacent ones. Suffice it to say that, for a count singular noun to be able to refer indefinitely, there has to be a weak quantifier – by default the indefinite article – at the left edge of the NP.

Now I will turn to the grammatical encoding of definiteness in Swedish (and in Norwegian, which is similar to Swedish in the relevant respects).¹³ In the Swedish NP, like in the English one, adjectives are placed directly to the left of the noun, quantifiers to the left of the adjective, and determiners at the left edge (Teleman et al. 1999:13).¹⁴ What the present research project has investigated is L2 acquisition of some basic properties of adjectivally modified and non-modified NPs in indefinite and definite contexts. Specifically, the thesis focuses on the four structures exemplified in (3) in the Introduction, repeated in (24) below. As shown in (24a–b), Swedish has an indefinite article (*en*) at the left edge of the NP, just like English. Unlike English, however, Swedish encodes definiteness primarily by using a definite nominal suffix (*-en*), as seen in (24c).¹⁵ Further, when a definite NP is adjectivally modified, the nominal definite suffix is accompanied by a definite adjectival-agreement marker (*-a*) and by a definite article at the left edge of the NP (*den*), as seen in (24d). As mentioned, this structure is often referred to as double definiteness.

¹³ It should be pointed out that dialectal variation is not considered in the following presentation; see, e.g., Dahl (2015) and Delsing (1993).

¹⁴ Just like in English, there is also a position for pronouns expressing *totality*, for example *alla* ‘all’ and *bela* ‘the whole’, to the left of the determiner position.

¹⁵ That the indefinite article and the definite nominal suffix are homophones is a coincidence. Like most indefinite articles, *en* has developed from the numeral ‘one’, and like most definite articles, *-en* has developed from a (post-nominal) demonstrative, *hinn* ‘that’ (e.g., Lohndal 2007; Delsing 1993; Stroh-Wollin 2015).

- (24) a. *en katt*
 INDEF cat
 ‘a cat’
- b. *en vit katt*
 INDEF white cat
 ‘a white cat’
- c. *katt-en*
 cat-DEF
 ‘the cat’
- d. *den vit-a katt-en*
 DEF white-DEF cat-DEF
 ‘the white cat’

The double-definiteness structure has received much interest in the linguistic literature (e.g., Börjars, Harries & Vincent 2016; Coppock & Engdahl 2016; Dahl 2004, 2015; Delsing 1993; Julien 2005, 2011, 2016; Lohndal 2007; Lohrmann 2011; Santelmann 1993; Stroh-Wollin 2015, to mention a few). One of the most influential models of the Scandinavian NP structure is found in Julien (2005). To simplify greatly, she suggested that the noun with its definite nominal suffix moves to D (at the left edge of the phrase), which must be filled for the phrase to be interpreted as definite. However, when the phrase includes an adjective, it blocks this movement. Hence D has to be phonologically realised by the definite left-edge article, yielding the double-definiteness structure.

It should be acknowledged that, in focusing on L2 acquisition of the four structures in (24), I have tried to abstract away from much of the variation and syncretism that characterises the Swedish NP. First, each of the four grammatical morphemes investigated – the indefinite article (*en*), the definite nominal suffix (*-en*), the definite adjectival suffix (*-a*) and the definite left-edge article (*den*) – has two or more allomorphs. The choice between these allomorphs depends on number (singular/plural), gender (common/neuter), the noun’s declension class and the referent’s natural sex. Specifically, the indefinite article has two allomorphs: the common-gender *en* and the neuter-gender *ett*. The definite nominal suffix has several allomorphs. For singular NPs, there is the common-gender *-en* and the neuter gender *-et*. If the noun ends in a vowel, the suffix is not syllabic (e.g., *flicka-n* ‘the girl’). For plural NPs, the form of the definite nominal suffix, which is added to a plural suffix, depends on the noun’s declension class: for most common-gender nouns, it is *-na* (e.g., *katter-na* ‘the cats’), and for most neuter-gender nouns, it is *-a* (e.g., *äpple-n-a* ‘the apples’) or *-en* (e.g., *hus-en* ‘the houses’). The definite adjectival suffix has two allomorphs: the default form *-a* is optionally replaced with *-e* if the referent

is singular, animate and male (e.g., *den lill-e pojke-n* ‘the little boy’). The definite left-edge article, finally, has three allomorphs: the common-gender *den*, the neuter-gender *det* and the plural *de*.

Second, each of the four grammatical morphemes in (24) has homonyms. The indefinite article (*en/ett*) is distinguished from the homonymous numeral (‘one’) only by stress. The singular, common-gender, definite nominal suffix (*-en*) is homonymous with the plural, neuter-gender definite article (as can be seen from the account in the previous paragraph). The definite adjectival suffix (*-a*) is homonymous with the adjectival plural marker, which is used regardless of definiteness status (e.g., *några vit-a katter* ‘some white cats’). Finally, the definite left-edge article (*den/det/de*) is homonymous with personal pronouns (e.g., *Det är fint* ‘It is nice’) and is distinguished from the demonstrative only by stress (e.g., *DEN vit-a katt-en* ‘THAT white cat’) – in other words, *den* in (24d) could just as well be a demonstrative.

Third, each of the four grammatical morphemes in (24) can or must sometimes be dropped. As shown in (25), indefinite NPs often appear without the indefinite article (*en*) if the NP is non-referential. Importantly, since a bare NP, such as *ny telefon* ‘a new phone’ in (25b), does not introduce a new discourse referent, it cannot be referred to anaphorically (Julien 2005:20). The definite nominal suffix (*-en*) is never used when the NP begins with a possessive pronoun or a genitival attribute, as shown in (26a). The same structure is found in NPs with the determiners *samma* ‘the same’ and *nästa* ‘the next’, as shown in (26b).¹⁶ The definite suffix is optional when the noun is modified by a restrictive relative clause and headed by the demonstrative *den*, as shown in (26c); if such an NP has generic reference, it is highly likely that the suffix is dropped (e.g., Delsing 1993:119). And the definite suffix must be dropped in non-referring NPs with an absolute superlative, like in (26d) (cf. Coppock & Engdahl 2016).

- (25) a. Hon är lärare
 she is teacher
 ‘She’s a teacher’
 b. Hon ska köpa ny telefon
 she will buy new phone
 ‘She’s going to buy a new phone’

¹⁶ The same structure applies to NPs with participles functioning as adjectives: *föregående dag(*-en)* ‘the previous day’ and – at least in formal language – to NPs with the demonstrative *denna*: *denna vackr-a dag(*-en)* ‘this beautiful day’.

- (26) a. {Annas/hennes} vit-a katt(*-en)
 {Anna's/her} white-DEF cat(*-DEF)
 ‘{Anna's/her} white cat’
- b. {samma/nästa} vit-a katt(*-en)
 {same/next} white-DEF cat(*-DEF)
 ‘{the same/next} white cat’
- c. den katt(-en) som du såg
 DEM cat(-DEF) that you saw
 ‘The cat that you saw’
- d. Jag har inte (den) minst-a aning(*-en)
 I have not (the) slightest-DEF idea(*-DEF)
 ‘I havn’t the slightest idea’

The definite left-edge article, finally, is not used in proper names, as shown in (27a). Interestingly, it is also often dropped when the NP includes an inherently definite adjective (or adjective-like word). These are adjectives that “themselves pick out a unique referent” (Julien 2016:80): superlatives, ordinal numerals and words like *vänstra* ‘left’ and *sista* ‘last’, as shown in (27b). Dahl (2004:153) named these words *selectors* since, by virtue of their semantic content, they enable identification (or selection) of the referent of the phrase.¹⁷ In fact, the definite left-edge article is sometimes dropped even with ordinary adjectives, if the NP refers deictically to a referent that is present in the immediate context and/or is familiar to both the speaker and the hearer, as in (27c), which is a variant of (24d). It may be speculated that the adjective becomes a selector in such contexts, as it enables identification of the referent.

- (27) a. (*det) Vit-a hus-et
 (DEF) White-DEF house-DEF
 ‘the White House’
- b. (det) {bästa/tredje/vänstra} huset
 (DEF) {best/third/left} house-DEF
 ‘the {best/third/left} house’
- c. ?(den) vit-a katt-en
 (DEF) white-DEF cat-DEF
 ‘the white cat’

However, omitting the definite left-edge article is illicit when the adjective is preceded by a cardinal numeral, as shown in (28). Such a numeral can introduce an indefinite NP but not a definite one. Julien (2016:80) suggested

¹⁷ This phenomenon is found also in other Germanic languages, including English (e.g., *next year*, *last night*), but it is more systematically applied in Scandinavian languages (Dahl 2004:153).

that, just like a definite noun cannot move to D when an adjective intervenes between the noun and D, an inherently definite adjective (i.e., a selector) cannot move to D when a cardinal numeral intervenes between the adjective and D. Interestingly, unlike ordinary adjectives, selectors can precede cardinal numerals, as shown in (29a–b) (Teleman et al. 1999:18). To my ears, it may also be possible to omit the definite left-edge article if the inherently definite adjective precedes the numeral – compare (28b) and (29c) – but that judgement is probably affected by the fact that omitting the definite left-edge article with inherently definite adjectives is generally not as felicitous in plural NPs as in singular ones: the article is more likely to be omitted in (30a) than in (30b). According to Delsing (1993:119), this may be because a *group* of referents may not be “uniquely identified” by an adjective, even if the adjective is inherently definite. Nevertheless, these peculiarities of the Swedish NP structure together strengthen the idea that there is a syntactic position at the left edge of the NP which needs to be filled with certain lexical material in order for the NP to be interpreted as definite.

- (28) a. två bra vänn-er
two good friend-PL
'two good friends'
- b. *(de) två bästa vänn-er-na
(DEF.PL) two best friend-PL-DEF
'the two best friends'
- (29) a. de {två bra/*bra två} vänn-er-na
DEF.PL {two good/good two} friend-PL-DEF
'the two good friends'
- b. de {två bästa/bästa två} vänn-er-na
DEF.PL {two best/best two} friend-PL-DEF
'the two best friends'
- c. ?(de) bästa två vänn-er-na
(DEF.PL) best two friend-PL-DEF
'the two best friends'
- (30) a. (den) bäst-a vänn-en
(DEF.SG) best-DEF.SG friend-DEF.SG
'the best friend'
- b. ?(de) bästa vänn-er-na
(DEF.PL) best friend-PL-DEF
'the best friends'

Finally, it should be pointed out that, while the indefinite article (*en*) is not required in all indefinite NPs and the definite nominal suffix (*-en*) and the

definite left-edge article (*den*) are not required in all definite NPs, the definite adjectival suffix (*-a*) is almost never omitted. As can be seen in many examples above, if a definite NP includes an adjective, this adjective is definitely marked.¹⁸ Hence the definite adjectival suffix appears to be a relatively reliable definiteness marker in adjectivally modified singular NPs.

To conclude, definiteness is syntactically represented in English and Swedish. While the two languages differ in many respects when it comes to the grammatical encoding of definiteness, there are some fundamental similarities, meaning that knowledge of English may to some extent be facilitative to L2 learners of Swedish. In the next section, I will discuss what knowledge of definiteness speakers of article-less Slavic languages may bring with them when acquiring an article language.

2.2.3 Definiteness in article-less Slavic languages

This thesis is about L2 acquisition of definiteness by Russian-speaking learners of Swedish (and English). Some of the learners were also native speakers of Belarusian and one of them was a native speaker of Ukrainian. These three Slavic languages (including Belarusian dialects; see Sussex & Cubberly 2006:514–517) all lack articles.¹⁹ Hence nouns are typically bare, as seen in the Russian example in (2), repeated as (31a). However, note that Russian (like other Slavic languages) is highly inflectional. For example, nouns and their pre-posed modifiers inflect for gender, number and case, as shown in (31b). This might possibly facilitate L2 acquisition of Swedish inflectional morphology and adjectival agreement for learners with a Slavic L1 (see Section 2.3.3).

¹⁸ To my knowledge, there are only two exceptions to this generalisation. First, there are adjectives that do not inflect at all, in particular adjectives ending in a vowel, including participles (e.g., *en sårande kommentar* ‘a hurtful comment’; *den sårande kommentar-en* ‘the hurtful comment’). Second, there is the adjective *egen* ‘own’, which – unlike other adjectives – may take the indefinite form after a possessive pronoun (e.g., *min egen/egn-a katt* ‘my own cat’) (cf. Lohrmann 2011).

¹⁹ Some Slavic languages do have articles. Bulgarian, Macedonian and some North Russian dialects have a definite article attached to the leftmost constituent of the NP (Sussex & Cubberly 2006:235, 357). Such a “Wackernagel article” is rather a common phenomenon among the world’s languages; for example, it is also found in Albanian and Romanian (Lyons 1999:73–74). Further, some South-Slavic languages have preserved an adjectival inflection that encoded definiteness in Proto-Slavic (Sussex & Cubberly 2006:266) but today rather encodes specificity (Trenkic 2004) – such a “weakening” of definite articles is in fact commonplace (e.g., Dahl 2015; Lyons 1999). Moreover, in Polish, Upper Sorbian and Czech, demonstrative pronouns may be in the process of developing into articles (Sussex & Cubberly 2006:237).

- (31) a. *belyj kot sidit na mašine*
 white cat sit on car
 ‘{a/the} white cat is sitting on {a/the} car’
- b. *ona kupila odn-u krasn-uju mašin-u*
 she bought one-ACC.F.SG red-ACC.F.SG car-ACC.F.SG
 ‘she bought one red car’

That Russian lacks articles does not imply that speakers of Russian do not conceive of NP referents as indefinite or definite. In this section, I will first show how article-less Slavic languages indirectly express definiteness and indefiniteness using inherently indefinite and definite lexical items, word order, verbal morphology and certain syntactic constructions. Then I will discuss whether the syntactic category D may be instantiated in these languages, despite their lack of articles.

Article-less Slavic languages can express definiteness indirectly using certain inherently indefinite or definite quantifiers and determiners, such as numerals and demonstratives (Brun 2001; Cho & Slabakova 2014; Lyons 1999; Sussex & Cubberly 2006; Trenkic 2004). The Russian examples in (32), adapted from Brun (2001:120), show that an NP introduced by the indefinite pronoun *kakoj-to* ‘some’ (plural: *kakie-to*) must be interpreted as indefinite while an NP introduced by the demonstrative pronoun *èto* ‘this’ (plural: *èti*) must be interpreted as definite. It can be shown that such words are actually interpreted as indefinite or definite using the *existential construction* (Lyons 1999:236–246; White 2008; White, Belikova, Hagstrom, Kupisch & Özçelik 2011). The English version of that construction begins with a reduced, non-referential *there is*, as in *There is a fly on the wall*. This construction typically does not allow definite NPs: **There is the fly on the wall*. Indeed, this “definiteness effect” has been “widely regarded as defining for definiteness” (Lyons 1999:237, but see the discussion below). The Russian version of the existential construction uses the verb form *est’* ‘[it] exists’ (Lyons 1999:238). Examples (33a–b), from White et al. (2011:268), shows that NPs with the indefinite pronoun are compatible with the existential construction while demonstratives and possessives are not. In addition, the example in (33c), from my own Russian- and Belarusian-speaking informants, shows that personal pronouns and proper names are also excluded from that construction. This presumably confirms that some Russian words are definite while others are not.²⁰

²⁰ Interestingly, White et al. (2011:268) pointed out that definite NPs can be used in the Russian existential construction if it is negated: *V ofise net tvoego košel’ka* ‘There isn’t your purse in the office’. (Note that negation here entails that the verb *est’* is replaced by the negation *net*.)

- (32) a. *Kakie-to cvety* vjanut
 some flowers wither
 ‘Some flowers are withering’
 b. *Èti cvety* vjanut
 these flowers wither
 ‘These flowers are withering’
- (33) a. V ofise est’ *kakoj-to košlek*
 in office exist some purse
 ‘There is {a/some} purse in the office’
 b. *V ofise est’ {*ètot/tvoj*} *košelek*
 in office exist {this/your} purse
 ‘There is {this/your} purse in the office’
 c. *V ofise est’ {*ona/Anna*}
 in office exist {she/Anna}
 ‘There is {she/Anna} in the office’

Article-less Slavic languages also express definiteness using word order. According to Brun (2001), Russian word order is grammatically free but relatively fixed with respect to information structure: the topic (i.e., given information) always precedes the focus (i.e., new information) in a sentence with neutral intonation; in the middle may be discourse-neutral material. Her examples in (34) show that an initial, topic NP is typically perceived of as definite; a medial, discourse-neutral NP is ambiguous with respect to definiteness; and a final, focus NP is typically perceived of as indefinite. Further, what matters is not only the linear word order but also the syntactic structure. The examples in (35), adapted from Cho and Slabakova (2014:168), show that an object following the verb is ambiguous with respect to definiteness while an object preceding the verb, and so resisting the canonical SVO word order, is likely to be perceived of as definite. It should be underscored, however, that word-order effects may be overridden by contextual factors, stress and the use of inherently indefinite and definite words such as those mentioned above (Brun 2001; Cho & Slabakova 2014). For example, a personal pronoun such as *ona* ‘she’ is definite regardless of its syntactic position.

- (34) a. Po *doroze* on prošel neskol’ko mil’
 on road he walked several miles
 ‘It was on the road that he walked several miles’
 b. On prošel po *doroze* neskol’ko mil’
 he walked on road several miles
 ‘He walked several miles on {a/the} road’

- c. On prošel neskol'ko mil' po *dorože*
 he walked several miles on road
 'He walked several miles on a road'
- (35) a. Sobak-a ukusila *mal' čik-a*
 dog-NOM bit boy-ACC
 'The dog bit {a/the} boy'
- b. *Mal' čik-a* ukusila sobak-a
 boy-ACC bit dog-NOM
 'A dog bit the boy'

Finally, article-less Slavic languages can express definiteness using verbal morphology and certain syntactic constructions. First, in (36), from Brun (2001:121–122), the object NP *pis'mo* 'letter' is interpreted differently when combined with different complex verbs derived from the simple verb *pisat'* 'write'. When combined with the perfective verb *napisat'*, where the prefix *na-* can be seen as expressing only perfectivity, it is typically perceived of as indefinite: 'a letter' (36a). When combined with another perfective verb, *dopisat'*, whose prefix besides perfectivity also denotes the completion of the event, it is perceived of as definite: 'the letter' (36b). Note that this interpretation holds even if a secondary imperfective verb, *dopisyvat'* (derived from *dopisat'*) is used (36c), meaning that verbal aspect (perfective–imperfective) alone is not decisive (cf. Slabakova 2008). Second, in (37a), where a woman is (indirectly) referred to using a possessive adjective (the rough structural equivalent of *womanly* in English), the referent must be interpreted as indefinite. By contrast, in (37b), where a woman is referred to using a noun in the genitive case, the reference can be perceived as either indefinite or definite (Brun 2001:121).

- (36) a. On napisal *pis'mo*
 he has-written.PERF letter
 'He has written {a/?the} letter'
- b. On dopisal *pis'mo*
 he has-written-to-the-end.PERF letter
 'He has finished the letter'
- c. On dopisyval *pis'mo*
 he was-writing-to-the-end.IMPERF letter
 'He was finishing the letter'
- (37) a. Za dverju slyšalsja *ženskij golos*
 behind door heard woman.Adj.NOM voice.N.NOM
 'A woman's voice was heard behind the door'
- b. Za dverju slyšalsja *golos ženščiny*
 behind door heard voice.N.NOM woman.N.GEN
 'The voice of {a/the} woman was heard behind the door'

There are thus means by which speakers of article-less Slavic languages express whether NPs have indefinite or definite reference, but those means are all *indirect*, meaning that they also “have some other, primary grammatical meaning (semantic feature) to express” (Cho & Slabakova 2014:162). In other words, the inherently indefinite and definite quantifiers and determiners above do not “replace” articles in languages like Russian. Even though articles have typically developed from such words historically, their functions are different from those of their ancestors (e.g., Dahl 2015; Lyons 1999). For example, the primary function of a demonstrative is to point out a referent that is directly identifiable – deictically or anaphorically – and which is therefore automatically definite. By contrast, a definite article presupposes the existence of a unique referent within some shared (or conceivable) context; this includes indirectly definite referents, to which demonstratives cannot refer, as shown in (38), adapted from Dahl (2015:31). Russian demonstratives do not differ from English or Swedish ones in this respect (Averintseva-Klisch & Consten 2007). In fact, Trenkic (2004:1407–1408) used corpora to show that demonstratives are not used more often in languages without articles than in languages with them, which would have been the case if demonstratives were somehow used to compensate for the lack of a definite article in such languages.

- (38) I have to fix my computer.
- a. There is some problem with *the hard disk*.
 - b. *There is some problem with *that hard disk*.

When it comes to the existential construction and word order, they both have as their primary function the *structuring of information*, not the expression of the definiteness status of a referent. While information structure and definiteness overlap, they are “by no means the same” (Lyons 1999:232). For instance, Trenkic’s (2004) Serbian example in (39) nicely demonstrates that a sentence-initial, pre-verbal, thematic, nominative NP (*student* ‘student’) may very well be interpreted as indefinite, and, inversely, that a sentence-final, post-verbal, rhematic, accusative NP (*prvu nagradu* ‘first prize’) can be interpreted as definite. As illustrated in Table 2.1, adapted from Trenkic (2004:1404), definiteness pertains to *knowledge* while information structure pertains to *consciousness* or *mental activation*. Activated referents are by definition both definite and thematic, while inaccessible (i.e., unknown) referents are by definition both indefinite and rhematic. However, referents that are known but not activated (i.e., accessible) are definite *and* rhematic – in such cases, information structure and definiteness clash. As pointed out by Lyons (1999:239), this may also explain why definite NPs can sometimes appear in the existential construction.

- (39) *Student sa naše katedre je osvojio prvu nagradu*
 student from our department won first prize
 ‘A student from our department won (the) first prize’

TABLE 2.1: *Consciousness and knowledge (Trenkic 2004)*

The referent’s cognitive status:	Activated	Accessible	Inaccessible
Category of consciousness:	Theme	Rheme	
Category of knowledge:	Definite		Indefinite

To recapitulate, while NPs are interpreted as indefinite or definite by speakers of article-less Slavic languages, those languages seem not to have dedicated morphology or any other grammatical tools whose *primary function* is to encode definiteness. The fact that speakers ascribe meanings to NPs does not necessarily mean that each meaning is represented in syntax. In other words, the fact that speakers of Russian interpret NPs as indefinite or definite does not entail that D is instantiated in Russian grammar: “[i]t may be that identifiability is an element in interpretation in all languages, but in many languages, it is not grammaticalized” (Lyons 1999:278). That not every meaning associated with linguistic structures must be syntactically represented is a cornerstone in MCF and in Jackendoff’s (2002) *Parallel Architecture*: “semantics can have more-elaborate structure than the syntax that expresses it” (Culicover & Jackendoff 2006:413). However, this view does not exclude the possibility that there exist abstract elements in syntax. Take, for example, the sentence *Sheep are cute*. Given the plural form of the verb, it is reasonable to assume that syntax assigns a plural feature to the noun *sheep*, despite the fact that this feature has no phonological realisation (cf. Sharwood Smith 2017:106). If we return to the topic of the present thesis, the interesting question is whether there is any rationale for assuming that D is instantiated in Russian, despite the fact that there is no article whose primary function is to fill this position.

In fact, many syntacticians argue that D *is* instantiated in article-less Slavic languages (e.g., Bailyn 2012; Pereltsvaig 2007; Progovac 1998; Rutkowski 2002; Salzmann 2020). There are two major arguments for this. First, in article-less Slavic languages, just like in article languages such as English and Swedish, quantifiers and determiners are typically placed at the left edge of the NP, and they rarely co-occur. This suggests that they compete for a certain position, presumably D (e.g., Bailyn 2012; Pereltsvaig 2007). On this view, the difference between an article-less Slavic language such as Russian and an article language such as English is that Russian allows D to be silent whereas English does not. However, in contrast to English and Swedish, article-less Slavic languages al-

low quantifiers and determiners to be placed elsewhere in the NP, as shown by the examples in (40) from Trenkic (2004; cf. Bailyn 2012:45). Trenkic (2004:1412) did acknowledge that these examples are “stylistically marked” but maintained that they are not ungrammatical, as they would undoubtedly have been in English and Swedish. Moreover, Trenkic (2004:1413) demonstrated that Serbian-Bosnian-Croatian allows quantifiers and determiners to co-occur in a way that would be impossible in English and Swedish; her example in (41) would mean something like “I do not know who he is, I only know that he is her friend from Argentina”. From this, Trenkic (2004) concluded that quantifiers and determiners in article-less Slavic languages are represented syntactically as ordinary adjectives – they are definite only by their meaning.

- (40) a. lepe ove misil
 nice these thoughts
 ‘these nice thoughts’
 b. moje ove misil
 my these thoughts
 ‘these nice thoughts of mine’
 c. misil ove
 thoughts these
 ‘these thoughts’
- (41) Došao joj *lje taj neki prijatelj iz Argentine*
 Came to her that some friend from Argentina
 ‘That friend of hers from Argentina has arrived’

However, the strongest argument for taking D to be instantiated in article-less Slavic languages comes, according to Progovac (1998:165), “from noun/pronoun asymmetries, where the pronouns precede, and nouns follow, certain intensifying adjectives” (cf. Bailyn 2012; Rutkowski 2002). In her Serbo-Croatian examples in (42), the intensifying adjective *sam* ‘alone’ precedes the noun (*Marija*) but follows the pronoun *nju* ‘her’. This indicates that the pronoun and the noun are in different syntactic positions. Specifically, the pronoun is at the left edge of the NP, presumably in D. Typologically, personal pronouns are not always semantically definite, but in article-less Slavic languages they are. In other words, it appears that they are definite because they are in D. Lyons (1999) and Trenkic (2004) agreed that this is strong evidence that there is a D position in article-less Slavic languages, but they argued that this position is found only in pronominal NPs, not in lexical ones. Indeed, Lyons (1999:280) divided the world’s languages into three categories: those without D, those with D in pronominal NPs only, and those with D in both

pronominal and lexical NPs. Russian and other article-less Slavic languages without articles would belong to the second category.

- (42) a. I *samu Mariju* to *nervira*
and alone Mary that irritates
'That irritates even Mary'
b. I *nju samu* to *nervira*
and her alone that irritates
'That irritates even her'

To conclude, while it is evident that the abstract meaning of definiteness is associated with a syntactic position (i.e., D) in languages with articles, such as English and Swedish (the target languages of the learners investigated in this research project), it remains unclear whether D is also instantiated in article-less Slavic languages such as Russian, Belarusian and Ukrainian (the learners' native languages). For the present purposes, it is not crucial to take a stand on this issue. Suffice it to say that the learners had to figure out that English and Swedish NPs include a certain syntactic position, D (be it novel to them or not), and that this position has to be phonologically realised (which, for Swedish, is rather a complex matter). Further, they had to figure out that D is co-indexed with the meaning of definiteness. However, it should be noted, as pointed out by Slabakova (2008:183–184), that the *meaning* of definiteness is not new to the learners although "its morphological expression" may be so. The meaning of definiteness is assumed to be a universal component of Conceptual Structures – the language of thought – which is language-independent. In the same vein, but perhaps more provocatively, Fodor (1998:9) claimed that a language "has no semantics". In other words, "[l]earning English isn't learning a theory about what its sentences mean, it's learning how to associate its sentences with the corresponding thoughts." In the next section, I will present the challenges that articles and definiteness actually pose to L2 learners.

2.3 L2 acquisition of definiteness

This section reviews previous research into L2 acquisition of definiteness and NP structure. As mentioned in the Introduction, the literature is vast, so the review cannot be exhaustive. Although I will cite research involving a range of languages, I will focus on the Scandinavian context. Topics covered are L2 acquisition of the form and the meaning of definiteness (Section 2.3.1), L2 learners' explicit and implicit knowledge of article semantics (Section 2.3.2), and the role of cross-linguistic influence (Section 2.3.3) and language-learning

apptitude (Section 2.3.4). Finally, the role of linguistic complexity and input frequency will be discussed in relation to work by Trenkic and colleagues dealing with the impact of adjectival modification on article production in L2 learners from article-less L1 backgrounds (e.g., Austin et al. 2015; Trenkic 2007, 2008, 2009) (Section 2.3.5). I will conclude each section by pointing out knowledge gaps that this thesis is intended to fill.

2.3.1 Form and meaning

Learners of article languages have to figure out that NPs require articles and that the choice between the indefinite and the definite article has certain semantic and pragmatic consequences. In other words, they have to acquire a morphosyntactic form and associate this form with a given meaning. Most L2 research on the form and the meaning of definiteness is based mainly on English production data. To simplify somewhat, two types of errors are of interest in that context: substitution errors (i.e., suppliance of definite articles in indefinite contexts and vice versa) and omission errors (i.e., absence of articles in obligatory contexts). Substitution errors can be said to show that learners have ascribed some non-target meaning to articles, while omission errors can be seen to indicate that learners lack a target-like morphosyntactic structure. In reality, however, disentangling form from meaning in learner data is a complicated matter, as was mentioned in the Introduction (cf. Kupisch 2006b:168).

It is crucial for any analysis of L2-article production to take into account both omission and substitution errors, because it is not necessarily the case that a learner who is good at producing a certain morpheme is also good at supplying it in accurate contexts, and vice versa (cf. Parrish 1987; Pica 1983a; Trenkic 2002). In fact, numerous studies have reported that L2 learners whose L1 does not have articles are more likely to supply the definite article than the indefinite one in obligatory contexts, but also more likely to overgeneralise it (e.g., Chaudron & Parker 1990; Goad & White 2004; Huebner 1985; Jaensch 2009; Master 1997; Nordanger 2017; Parrish 1987; Thomas 1989; Trenkic 2000, 2002; White 2008; Young 1996; but see Leung 2005). For instance, Huebner (1985:148), who tracked the developing use of the definite article in a Hmong-speaking learner of English, observed an initial “flooding” of the definite article, which was used in all contexts. At that point, an analysis of omission errors only would have yielded the conclusion that this learner was a more accurate user of the definite article than of the indefinite one, while an analysis of substitution errors only would have yielded the opposite result.

With time and increasing proficiency, the rates of both omission and substitution errors tend to decrease (e.g., Huebner 1985; Jaensch 2009; Jarvis 2002;

Kořaczek 2018; Nordanger 2017; Trenkic 2000, 2002; Young 1996). For example, after the above-mentioned initial *the* flooding, Huebner's (1985) learner steadily supplied the definite article more often in definite contexts and less often in indefinite contexts.²¹ However, an important point, underscored by Trenkic (2007:292), is that general error rates cannot reveal the underlying mechanisms causing the errors. Research therefore has to explore *specific patterns* of article omission and substitution (cf. Trenkic 2009). In the following, I will discuss some such patterns.

Regarding article-omission errors, learners whose L1 does not have articles typically drop them more frequently in topic/subject NPs than in focus/non-subject NPs (e.g., Huebner 1985; Jarvis 2002; Sharma 2005; Trenkic 2000, 2002). For example, Trenkic (2000:181), who elicited oral-production data from Serbian-speaking learners of English, reported that learners at a lower proficiency level dropped articles in 82 per cent of subject NPs but in only 23 per cent of non-subject NPs. Typologically, definiteness marking in the object position implies definiteness marking with topical subjects, but not the other way around (Lyons 1999:335). In other words, an object NP with an article is more marked than a subject NP with an article.²² Since L2 difficulty has been claimed to be related to markedness (e.g., Eckman 1977, 2011), the fact that articles are dropped more often with subjects than with objects might come as a surprise. Trenkic (2000:182) speculated that articles are dropped in this context precisely because of the "obviousness" of topics being definite. This idea is supported by the fact that article-omission rates also tend to be higher when the referent has previously been mentioned than when it is mentioned for the first time (Avery & Radišić 2007; Sharma 2005; Trenkic 2000, 2002; Źegarac 2004; but see Chaudron & Parker 1990 who observed the opposite pattern), and also tend to be higher when the referent is present in the immediate context (Robertson 2000) and is relatively salient (Trenkic & Pongpairoj

²¹ Not all studies report development towards the target norm, however. With regard to article production, no development over time was seen in Goad and White's (2004) Turkish-speaking learner of English; the authors concluded that she had reached a steady state. Similarly, no development was reported between the two data points in Axelsson's (1994) study of definiteness and NP structure in Finnish-, Polish- and Spanish-speaking immigrants learning Swedish; she speculated that the time separating the two data points – five months – was too short. Further, Nyqvist's (2013) Finnish-speaking learners of Swedish made fewer meaning-related errors over time but more form-related errors, probably because they produced an increasingly elaborate language and so encountered more opportunities to make errors.

²² Note, however, that some languages, such as Turkish, use object-case inflection only with definite NPs. In other words, such languages *indirectly* express definiteness for objects but not for subjects (Croft 2003:132; cf. Lyons 1999:199–207).

2013). Trenkic (2007) and Žegarac (2004) explained these patterns in terms of Relevance Theory (e.g., Wilson & Sperber 2012) and the Gricean Maxim of Quantity (Grice 1975): as speakers avoid providing more information than the communicative situation demands, articles are more likely to be dropped when the referent's identifiability status is contextually given – as when the referent is referred to using a topic/subject NP, has already been introduced in discourse, is present in the immediate context or is salient in some other way. In a similar vein, Robertson (2000:163) suggested that “the article may be dropped if the information it encodes is recoverable from the context” (see also Young 1996). Building on this, Robertson (2000:169) speculated that, when learners start using articles independently of contextual redundancy – just like native speakers of article languages do – this might indicate that they have moved from a “discourse-oriented” grammar to a “syntax-oriented” one.

Numerous studies have also reported that L2 learners whose L1 does not have articles drop them more frequently in adjectivally modified NPs (Art + Adj + N) than in non-modified ones (Art + N) (e.g., Goad & White 2004; Jarvis 2002; Pongpairaj 2008; Snape 2006; Trenkic 2000, 2002, 2007). Trenkic (2009:130) argued that “we need more than just a pragmatic principle” to account for this pattern of article omission. Leaning towards Almor's (1999) Informational Load Hypothesis and Bates and MacWhinney's (1989, 1989) Competition Model, she suggested that different patterns of article omission – articles being dropped both in contextually redundant contexts and in adjectivally modified NPs – should be explained in terms of processing constraints and competition for attentional resources (cf. Austin et al. 2015; Trenkic & Pongpairaj 2013). I will discuss this further in Section 2.3.5.

Regarding article-substitution errors, many studies have reported that L2 learners whose L1 does not have articles appear to confuse the concepts of DEFINITENESS and SPECIFICITY (cf. Section 2.2.1), resulting in overgeneralisation of definite articles in specific contexts and – possibly – of indefinite articles in non-specific contexts (e.g., Huebner 1985; Ionin 2003; Ionin et al. 2004, 2009; Kim & Lakshmanan 2009; Snape 2006; Thomas 1989; Tryzna 2009; Zdorenko & Paradis 2008). In fact, the same pattern has been observed in L1 acquisition (e.g., Karmiloff-Smith 1981; Kupisch 2006a; Svartholm 1978), in which case it is readily explained in terms of maturation: article choice based on definiteness, unlike article choice based on specificity, requires an ability to take the hearer's perspective (cf. Ionin et al. 2009). When it comes to adult learners, however, maturation cannot be the explanation. Instead, Ionin (2003) postulated an innate Article-Choice Parameter with two values: SPECIFICITY and DEFINITENESS (see also Ionin et al. 2004). According to her Fluctuation

Hypothesis, L2 learners without articles in their L1 did not set this parameter when acquiring their L1 and therefore “fluctuate” between the two values until they have received enough input to set the parameter at its accurate value of DEFINITENESS. This would account for the overuse of definite articles in specific contexts and of indefinite articles in non-specific contexts.

The Fluctuation Hypothesis was criticised by Trenkic (2008), who argued that Ionin’s way of operationalising SPECIFICITY did not control for a potential confounding factor, namely whether or not the speaker has concrete knowledge of the referent. Using a modified version of Ionin et al.’s (2004) forced-choice elicitation task, Trenkic showed that Chinese-speaking learners of English did not overuse the definite article with specific referents in general but only when the speaker explicitly stated that he or she had some concrete knowledge about the referent. Since explicitly stated knowledge has little to do with the universal concept of SPECIFICITY, Trenkic (2008) concluded that, while articles are associated with an abstract, procedural meaning in native speakers, L2 learners from article-less L1 backgrounds ascribe a concrete, conceptual meaning of *familiarity* to them. This conclusion is well in line with Trenkic’s previous observation that Serbian-speaking learners of English associate definite articles with *concreteness* (Trenkic 2002). At a more general level it is also compatible with the suggestion discussed above that article production might be pragmatically rather than syntactically driven in L2 learners from article-less L1 backgrounds (cf. Robertson 2000). In MCF terms, all of this would suggest, first, that the reasons why learners from article-less L1 backgrounds produce articles is not that a syntactic representation (i.e., D) requires them to do so; and, second, that articles are not co-indexed with the inherently abstract concept of DEFINITENESS – they are rather treated as lexical words which are associated with some concrete concept capable of being projected into consciousness and which are used intentionally for communicative reasons (cf. Trenkic 2007).

When it comes to L2 acquisition of Swedish (and Norwegian), definiteness is often considered to be one of the most difficult components of the grammatical system (Bolander 2012:121; Ekberg 2013:265; Ekerot 2011; Philipsson 2013:126), apparently owing to its complex form and abstract meaning. According to DeKeyser (2005), grammar can be difficult for a range of reasons: abstractness of meaning, complexity, redundancy and novelty of form, and opacity of form–meaning mapping. As was discussed in Section 2.2, the meaning of definiteness is inherently abstract and in some sense novel to learners lacking articles in their L1; the Swedish NP structure is complex and redundant; and the mapping between the meaning and the form is to some extent opaque (cf. Nyqvist 2018). Therefore it is not surprising that the Swedish NP structure

poses a severe challenge to L2 learners. Indeed, this has been shown to be the case not only for learners whose L1 lacks articles: Chinese (Jin 2007; Jin, Åfarli & van Dommelen 2009a,b), Finnish (Axelsson 1994; Heikkilä 2008; Latomaa 1992; Nyqvist 2013, 2015, 2018; Lahtinen 1993a,b, 2010; Sundman 1995), Polish (Axelsson 1994; Eriksson & Wijk-Andersson 1988; Kołaczek 2018) and Russian (Nordanger 2017) but also for learners whose L1 does have articles: Arabic (Salameh, Håkansson & Nettelbladt 1996), English (Jin 2007; Jin et al. 2009a,b; Nordanger 2017), German (Eriksson & Wijk-Andersson 1988) and Spanish and Italian (Jin 2007; Jin et al. 2009b; Latomaa 1992). See also Wijk-Andersson (1993, 1995), who investigated the development of definiteness and NP structure in L2-Swedish learners with a range of typologically different L1s. In the following, I will summarise the general findings from this body of research, but several of the studies will be discussed in greater detail in Section 2.3.3, which deals with cross-linguistic influence.

When it comes to the form of definiteness, Axelsson (1994), investigating the development of definiteness and NP structure in spontaneous oral-production data from Finnish-, Polish- and Spanish-speaking immigrants learning Swedish, found that synthetic constructions such as *bok-en* ('the book') were generally more difficult than analytical ones, such as *min bok* ('my book'), and that adjectivally modified NPs posed the greatest challenge to all learner groups. In particular, the double-definiteness structure (e.g., *den vit-a katt-en* 'the white cat') was produced correctly in only 22 per cent of all cases (Axelsson 1994:98–101). Her findings have been replicated in several studies (e.g., Nyqvist 2013, 2015, 2018; Nordanger 2017). Indeed, the double-definiteness structure poses a challenge even to very advanced L2 learners of Swedish (Hyltenstam 1988; Sundman 1995). Interestingly, Nyqvist (2013), who followed Finnish-speaking learners of Swedish for three years, reported that their rate of formal errors actually increased over time. This may of course have been a consequence of the fact that, as their mastery of Swedish increased, they produced increasingly more complex NPs.²³ While complexity of form appears to play a role, Nyqvist (2018) found that definite NPs that do *not* require the definite nominal suffix, such as NPs with possessive pronouns or the demonstrative *denna* 'this' (e.g., *min katt* 'min katt'; *denna katt* 'this cat'), posed a greater challenge than the double-definiteness structure. From this she concluded that complexity of form–meaning mapping may be a more important source of difficulty than complexity of form per se (cf. DeKeyser 2005).

²³ However, Nyqvist 2015 reported the opposite pattern for a group of somewhat older Finnish-speaking learners of Swedish.

Regarding the meaning of definiteness, Nordanger (2017) found – surprisingly – that both English- and Russian-speaking learners failed to supply definite morphology in definite contexts, at least to begin with; in other words, there was no *the* flooding to be seen (cf. Huebner 1985). However, in line with previous research (Chaudron & Parker 1990; Goad & White 2004; Huebner 1985; Trenkic 2000, 2002; Young 1996), she also found that both groups overgeneralised the definite suffix (i.e., used it in indefinite contexts) while the indefinite article was hardly ever overgeneralised. Further, Nyqvist (2013) and Kołaczek (2018) reported that Finnish- and Polish-speaking learners of Swedish were more likely to supply the definite article when the referent was directly identifiable (direct anaphoric reference) than when it was indirectly identifiable (associative uses, bridging); Young (1996) saw the same pattern in Czech-speaking learners of English. It should also be mentioned that Nyqvist (2013) and Kołaczek (2018) reported article-choice accuracy to increase over time (cf. Jaensch 2009; Trenkic 2002).

In sum, articles and definiteness have received much interest in the field of SLA. The body of research confirms that definiteness poses a challenge to L2 learners from article-less L1 backgrounds: articles are often omitted and substituted, even at high proficiency levels. Theoretical accounts for this difficulty include that L2 learners produce articles for communicative rather than structural reasons, and that they do not associate articles with the abstract, procedural meaning of definiteness (cf. Hawkins 1991; Lucas 2011) but with some concrete, conceptual meaning. Regarding L2 Swedish, several studies have shown that the double-definiteness structure in particular poses a severe challenge to L2 learners. However, it should be pointed out that most research into definiteness and NP structure in L2 Swedish and Norwegian has been based on free-production data, often written. Further, the data have typically been analysed at group level, meaning that individual variation has rarely been discussed. Moreover, most of the findings reported are not statistically supported.²⁴

The present thesis contributes to the research into definiteness and NP structure in L2 Swedish by reporting data collected in a strictly controlled manner. An oral-production task elicited a considerable number of pre-defined NPs from a considerable number of participants, enabling me to track the development of the double-definiteness structure in detail, to explore potential background factors, and to build statistical support for my findings. In particular,

²⁴ Here, Jin (2007), who investigated sensitivity to NP-internal agreement errors in three rather small group of L2 learners of Norwegian, is the exception that proves the rule. However, see also, e.g., Nordanger (2017) and Nyqvist (2018).

I sought to describe the development of the form and the meaning of definiteness separately by exploiting the fact that the Swedish NP presents L2 learners with a range of opportunities to express the meaning of definiteness even when they have not yet acquired a complete representation of the grammatical structure through which the target language encodes this meaning (cf. Ekerot 2011:150). Most importantly, while my data do not reveal much about exactly what meaning L2 learners ascribe to indefinite and definite forms, they did allow me to investigate whether the development of a form is somehow associated with the establishment of a form–meaning association over time, a question not addressed by previous research.

2.3.2 Explicit and implicit knowledge

A much-debated question in SLA is to what extent L2 acquisition – and, consequently, L2 knowledge – is explicit and to what extent it is implicit (cf. DeKeyser 2003; Paradis 2009; see contributions in Rebuschat 2015 and Sanz & Leow 2011). In CME, explicit knowledge is defined as mental representations available for conscious processing while implicit knowledge is defined as mental representations unavailable for conscious processing (cf. Truscott 2015a,b). Because of the largely abstract meaning of definiteness (cf. DeKeyser 2005; Lucas 2011; Žegarac 2004), it is interesting to look at L2 learners' explicit knowledge of article semantics and at the role this knowledge plays in their actual use of articles.

As pointed out by Andringa and Rebuschat (2015:187), our understanding of the explicit–implicit distinction “is largely determined by one’s views of how language is represented in our minds”. The literature often refers to a strong-interface position and an opposite non-interface position (e.g., DeKeyser 2003:328; Hulstijn 2005:137; Spada 2015:76). The former position implies that there is no principled distinction between explicit and implicit knowledge. Instead, knowledge is more or less explicit or implicit depending on the degree of proceduralisation (e.g., Anderson 1992; DeKeyser 2003). According to Schmidt (1990:132), *noticing* – a conscious experience that can be “operationally defined as availability for verbal report” – is a prerequisite for learning, while “subliminal language learning is impossible” (see also, e.g., Schmidt 2012). By contrast, the non-interface position takes explicit knowledge to be learned, declarative and controlled whereas implicit knowledge is acquired, procedural and automatic (e.g., Krashen 1982; Paradis 2009). On this view, explicit knowledge cannot *become* implicit, because explicit knowledge and implicit knowledge are different types of mental entities. It should be underscored, however, that the opposition between the two positions has often been exaggerated

(cf. Sharwood Smith & Truscott 2014:286–300). For example, anyone reading Schmidt (1990, 2012) carefully will find that no claim is made to the effect that abstract rules and meanings cannot be acquired implicitly; the only thing that the learner *has* to notice are “specific instances of language” (Schmidt 2012:32). Likewise, both Krashen (1982) and Paradis (2009) acknowledge a potential indirect effect of explicit processes on language acquisition.²⁵ This is in fact very much in line with R. Ellis’s (1993) notion of a *weak* interface between implicit and explicit knowledge, and possibly with N. Ellis’s (2005, 2011) notion of a *dynamic* interface: although explicit and implicit knowledge are different types of mental entities, enhancing explicit knowledge may *indirectly* influence the development of implicit knowledge. As mentioned in Section 2.1, this possibility is also incorporated in MCF (e.g., Sharwood Smith & Truscott 2014:286).

Numerous studies have found general positive effects of explicit instruction on language learning (see the meta-analyses by Norris & Ortega 2000, 2001, and by Spada & Tomita 2010). So have several intervention studies targeting different pedagogical approaches to teaching specific aspects of definiteness and articles (e.g., Abumlihah 2016; Akakura 2012; Master 1990, 1994, 1995, 2002; Sheen 2007), although some studies have failed to provide convincing evidence for positive effects of explicit teaching on definiteness and articles (e.g., Lopez 2015; Lopez 2019; Snape & Yusa 2013; see also the discussion in Lopez & Sabir 2019). However, in most of these studies, including the ones covered by the meta-analyses cited, the outcome of explicit teaching was measured using tasks which probably tapped primarily into explicit knowledge. In other words, these studies merely suggest that explicit teaching results in explicit knowledge. However, there are exceptions. For example, Abumlihah (2016) and Akakura (2012) measured the outcome of explicit instruction using tasks tapping into both explicit and implicit knowledge. Both types of measure revealed positive and durable effects of instruction, which clearly indicates that explicit teaching might boost the development of implicit knowledge of article semantics.

However, that explicit instruction yields positive effects on implicit knowledge by no means entails that explicit knowledge is a *prerequisite* for the development of implicit knowledge. A long tradition of research in experimental psychology has shown that implicit learning is indeed possible (e.g., Reber, Kassin, Lewis & Cantor 1980; see also the critique in DeKeyser 2003). Some studies in this tradition have dealt, albeit superficially, with article semantics. The best-

²⁵ According to Paradis (2009:98), “foreign language instruction has an unquestionable, though multiply indirect, influence on second language acquisition, whenever acquisition eventually occurs”.

known example is from Williams (2005), where an experiment involved participants reading sentences which included four artificial articles, two indefinite and two definite ones. The participants were not informed that one indefinite and one definite article were used only with animate referents while the other two were used only with inanimate referents. Afterwards, reaction-time tests showed that learners reacted to “inaccurate” use of the artificial articles, even though nothing in their verbal reports indicated that they had noticed the association between the articles and the semantic concept of ANIMACY. Interestingly, this result was replicated by Chen et al. (2011) and by Leung and Williams (2012, 2014), who also found that artificial articles were not implicitly associated with meanings that are not typically encoded by human grammars, such as relative size of referents and capitalisation of letters. In their discussion of these studies, Paciorek and Williams (2015:81–82) concluded that “[l]inguistic contexts make available a large amount of semantic information that remains implicit in our understanding of events, and which is available to guide inferencing, and, we would argue, participate in learning”.²⁶

That implicit knowledge of article semantics may be boosted by explicit instruction, as shown by Abumhah (2016) and Akakura (2012), but may also be learned implicitly, as shown by Williams (2005) and the follow-up studies, makes it an interesting question to find out what the relationship between explicit and implicit knowledge of article semantics actually looks like in L2 learners from article-less L1 backgrounds. Butler (2002) approached this question by administering an article cloze test to 80 Japanese-speaking learners of English and then interviewing them about their beliefs about article semantics that had caused them to make incorrect article choices. Her analysis revealed that the typical reason for choosing an incorrect article was that the learners paid attention to speaker knowledge instead of hearer knowledge – in other words, that they confused the concepts of DEFINITENESS and SPECIFICITY. The same result was reported in Yang and Ionin (2009), where the learners were not interviewed but had to write explanations for their article choice while performing the cloze test. Ionin et al. (2009) took these findings as support for the Fluctuation Hypothesis, according to which L2 learners without articles in their L1 fluctuate between the definiteness and specificity settings of the Article-Choice Parameter (see Section 2.3.1). However, since parameter setting is hardly a conscious process, perhaps it would be more appropriate to interpret those findings as evidence that L2 learners’ overgeneralisation of

²⁶ However, Hama and Leow (2010) and Leow and Hama (2013) have criticised Williams’s experiments, focusing mainly on his operationalisation of the construct of explicit knowledge.

definite articles in specific contexts is the result of an explicit hypothesis about article semantics (cf. Trenkic 2008).

Tests similar to the one used in Yang and Ionin (2009) were included in Kołaczek's (2018) and Nyqvist's (2013) studies of Polish- and Finnish-speaking learners of Swedish. Both studies found, just like Butler (2002) and Yang and Ionin (2009), that specificity was a dominant source of confusion. They also found that the learners were aware that the indefinite article is used to introduce new referents while the definite article is used to refer "back" to previously mentioned referents, which might explain why the learners in both studies were more likely to supply definite forms with direct anaphoric reference than definite forms with indirect anaphoric reference (cf. Young 1996). By contrast, the learners were typically not aware that the definite article signals that the referent is identifiable within a context shared by the speaker and the hearer. This lack of *accurate* explicit knowledge of article semantics might be explained by the fact that L2 textbooks rarely provide elaborate and correct explanations on this point (e.g., Ionin 2003; Kołaczek 2018; Nyqvist 2013; Pica 1983b; Trenkic 2000). For example, Kołaczek (2018:138–159) showed that a set of L2-Swedish textbooks – incidentally including the ones used by the learners that I followed in the present project: Levy Scherrer and Lindemalm (2007) and Nyborg and Pettersson (1991) – focus more on NP structure than on the meaning of definiteness. Moreover, they consistently exemplify the meaning of the definite article using direct anaphoric reference (NPs referring "back") although, as demonstrated by Fraurud (1990:395), "the most common function of definite NPs is *not* anaphoric but different types of first-mention uses" (*italics added*).²⁷ As demonstrative pronouns, which probably exist in all human languages (Lyons 1999), can also refer anaphorically (Averintseva-Klisch & Consten 2007), it is conceivable that L2 learners whose L1 does not have articles might gain the impression from those textbooks that definite articles have a demonstrative function.

Finally, in Nyqvist's (2013:81) Finnish-speaking learners of Swedish, there was a significant positive correlation between (accurate) metalinguistic knowledge of article semantics and article-choice accuracy on a grammar test (although they sometimes provided an accurate rule but nonetheless selected an incorrect form). Note that this positive correlation was expected, given that learners are likely to draw upon explicit knowledge in a traditional grammar test. As pointed out by Butler (2002:475), it cannot be taken for granted that

²⁷ Nyqvist (2013) observed the same tendency in L2-Swedish textbooks intended for Finnish-speaking learners.

the hypotheses about the meaning of articles entertained by L2 learners are actually employed in communicative situations. To my knowledge, however, nobody has tested the relationship between L2 learners' explicit knowledge of article semantics and their use of articles in tasks that can be assumed to tap mainly into implicit knowledge. The present thesis is intended to fill this research gap.

2.3.3 Cross-linguistic influence

When two or more languages exist in the same mind, they influence each other. This thesis explores such cross-linguistic influence in native speakers of Russian who had previously learned English and were now studying Swedish. The phenomenon is traditionally referred to as *transfer*, a term originating from the behaviouristic tradition and from Contrastive Analysis, according to which learning a language amounts to establishing new behavioural patterns (Lado 1957). The term *cross-linguistic influence* was suggested as an alternative by Kellerman and Sharwood Smith (1986), but, like many others, I use the two terms interchangeably (cf. Jarvis 2013; Ringbom 2007; Odlin 2003).

The major claim of Contrastive Analysis was that language-learning difficulties can be predicted by comparing the target language to the learners' L1 (Lado 1957). In the 1970s, this view was challenged by studies such as Dulay and Burt (1974), which showed that English grammatical morphemes were acquired in roughly the same order by Chinese- and Spanish-speaking children, despite their different L1 backgrounds. Nevertheless, the existence of cross-linguistic influence in L2 acquisition is widely acknowledged, and our understanding of this phenomenon has grown considerably deeper than it was half a century or so ago (e.g., Kellerman & Sharwood Smith 1986; Odlin 1989, 2003; Jarvis 2013; Jarvis & Pavlenko 2008; Ringbom 2007). Some recent theoretical advances highlighted by Jarvis and Pavlenko (2008:15–19) pertain to the renewed interest in the relationship between language and cognition in multilingual minds, to the insight that transfer is not uni-directional, and to attempts to account for cross-linguistic influence using psycholinguistic models where notions such as memory and processing are taken seriously. Researchers still focus on the role of differences and similarities between languages, but nowadays – in stark contrast to the tenets of Contrastive Analysis – *similarity* rather than *difference* is often assumed to be “the main driving force behind [cross-linguistic influence]” (Kellerman, 1995:137; cf. Ringbom 2007).

When it comes to L2 acquisition of articles and definiteness – the topic of the present thesis – it is well known that learners whose L1 has articles have an advantage over learners whose L1 does not have them. That has been

shown for L2 English by, for example, Jarvis (2002), who compared Finnish- and Swedish-speaking learners, Pongpairoj (2007, 2008), who compared Thai- and French-speaking learners, Schönenberger (2014), who compared Russian- and German-speaking learners, and Snape (2006), who compared Japanese- and Spanish-speaking learners. Jarvis (2002:406) concluded that “L1 influence thrives in this area of L2 acquisition”. To some extent, the same can be said about L2 acquisition of Swedish (and Norwegian). At least, it would appear that having an L1 with articles represents an advantage when it comes to the meaning of definiteness (i.e., the ability to choose between indefinite and definite forms in accordance with the pragmatic context), while the Swedish NP structure seems to pose a difficulty to learners regardless of whether their L1 has articles. This tendency can be discerned in Axelsson (1994), who compared Finnish-, Polish- and Spanish-speaking learners of Swedish, in Eriksson and Wijk-Andersson (1988), who compared German- and Polish-speaking learners of Swedish, in Jin (2007), who compared Chinese-, English- and Spanish-/Italian-speaking learners of Norwegian, and in Nordanger (2017), who compared English- and Russian-speaking learners of Norwegian (see also Latomaa 1992).

When it comes to meaning, Eriksson and Wijk-Andersson’s (1988) German-speaking learners outperformed the Polish-speaking ones with regard to substitution errors. Interestingly, Nordanger (2017) found that both English- and Russian-speaking learners initially overgeneralised the definite suffix to indefinite specific contexts (the English-speakers more so than the Russian-speakers in fact). This is surprising, as this pattern of article substitution is otherwise typical of learners whose L1 does not have articles (see Section 2.3.1). However, while there was hardly any development in the Russian group with respect to article choice, the English-speaking learners recovered rapidly: at the last data point they were on target. Hence it would seem that they did not initially map the L1 definite article (i.e., *the*) onto the corresponding L2 morpheme (i.e., the definite nominal suffix *-en*). For a limited period of time, their production of the definite suffix was thus pragmatically rather than syntactically driven, as suggested by the fact that they omitted the suffix in contextually redundant contexts (cf. Robertson 2000; Žegarac 2004). In the long run, though, they were apparently aided by the L1–L2 similarity.²⁸

²⁸ Note that the participants in Nordanger (2017) were not beginners. At data point 1, they found themselves between the A2 and the B1 levels of the Common European Framework of Reference (Council of Europe 2001).

By contrast, when it comes to L2 acquisition of the Scandinavian NP structure, presence versus absence of articles in the L1 is not necessarily a determining factor. For instance, in Eriksson and Wijk-Andersson (1988), NP structure was equally troublesome to both German- and Polish-speaking learners. In particular, it has been suggested that learners with a synthetic, highly inflectional L1, such as Finnish, Polish or Russian, are more likely to use the nominal suffix, while learners with an analytic, less inflectional L1, such as English or Spanish, are more likely to use the left-edge article (Axelsson 1994; Eriksson & Wijk-Andersson 1988; Latomaa 1992; Nordanger 2017). For example, Nordanger (2017:377) observed that the English-speakers' inaccuracies in double-definiteness contexts were "inextricably linked to the definite inflection" while the Russian-speaking learners displayed the opposite pattern: they rather omitted the left-edge article.²⁹ She speculated that the Russian-speaking learners' advantage with respect to the definite suffix was due to their knowledge of a highly inflectional nominal system (Nordanger 2017:373). However, Latomaa (1992:309) proposed a different explanation for the same phenomenon. She reported that Finnish-speaking learners of Swedish were more fond of the definite suffix while Spanish-speaking learners preferred the indefinite article (cf. Axelsson 1994). Based on this, she suggested that the L1 constrains the number of possible hypotheses from which the learner creates the new language. In other words, in Latomaa's (1992) account, the crucial difference between the two groups was not that the Finnish-speakers were used to inflecting nouns (i.e., *similarity*) but rather that the Spanish-speakers were used to expressing definiteness with a left-edge article (i.e., *difference*). These findings and their proposed explanations raise interesting questions about what kinds of similarities and differences – structural and functional ones – may moderate cross-linguistic influence.

The hypothesis that an analytic L1 triggers the use of free-standing articles in an L2 while a synthetic L1 triggers the use of inflectional morphology is supported by the fact that an English–Norwegian bilingual child, investigated by Anderssen and Bentzen (2013), frequently dropped the definite nominal suffix in double-definiteness contexts. As this pattern is not attested in monolingual Norwegian- or Swedish-speaking children (cf. Anderssen 2007; Bohnacker 1997, 2003), it would appear that the presence in English of a definite left-

²⁹ In the Russian group, but not in the English group, there was also an overgeneralisation of the nominal suffix in possessive constructions (e.g., **min katt-en* 'my cat-DEF'). The same pattern was reported by Heikkilä (2008) and Nyqvist (2013, 2018) for Finnish-speaking learners of Swedish.

TABLE 2.2: *Definite modified NPs in Lahtinen (1993a)*

Structural pattern			<i>n</i> of NPs	per cent
	Adj	N-DEF	226	9.0
DEF	Adj	N	74	3.0
DEF	Adj	N-DEF	19	0.8
	Adj-DEF	N-DEF	526	21.0
DEF	Adj-DEF	N	342	13.6
DEF	Adj-DEF	N-DEF	1,319	52.6

edge article triggered that bilingual child to use the structurally similar definite article in Norwegian. Further, this hypothesis may also be supported by the fact that Lahtinen's (1993a:91–92) Finnish-speaking learners of Swedish omitted the left-edge article more often than they omitted the adjectival-agreement marker and the nominal suffix. Table 2.2, calculated from her data, shows that the nominal and adjectival suffixes were used in 83 and 87 per cent, respectively, of all singular, adjectivally modified, definite NPs, while the left-edge article was used only in 70 per cent of them. Moreover, there appears to be an implicational relationship between the article and the suffixes: the article rarely occurred without the suffixes while the suffixes frequently occurred without the article, which suggests that the article was acquired later in development.³⁰ It is unclear, however, whether Lahtinen's (1993a) analysis included NPs with inherently definite adjectives, such as superlatives. If such NPs were not treated separately, that could explain the relatively high omission rate for the left-edge article, as those adjectives are generally highly frequent and license the omission of the article (see Section 2.2.2). Indeed, the fact that Swedish often allows the omission of the left-edge article in adjectivally modified definite NPs means that L2 learners will receive an inconsistent input, which might by itself explain the pattern seen in Table 2.2, regardless of how Lahtinen carried out her analysis. In other words, the pattern observed could be due to the nature of the L1 (i.e., Finnish being synthetic) or to irregularities in the target language itself (i.e., the fact that the free-standing article is an unreliable *cue*; cf. MacWhinney 1997:122).

³⁰ To be more precise, the nominal suffix occurred without the left-edge article in 30.0 per cent of the NPs while the left-edge article occurred without the nominal suffix in 16.6 per cent of them; the adjectival suffix occurred without the left-edge article in 21.0 per cent of the NPs while the left-edge article occurred without the adjectival suffix in 3.8 per cent of them.

Additional support for the hypothesis that learners with an inflectional L1 have an advantage over learners with an analytic L1 when it comes to the definite nominal suffix is found in Portin et al. (2008). Their experimental study, involving native speakers of Hungarian, which is inflectional, and native speakers of Chinese, which is isolating, revealed that the former group processed L2-Swedish inflected nouns analytically while the latter applied “full-form processing” (Portin et al. 2008:452). Hence, knowledge of an inflectional L1 facilitated the processing of the Swedish definite nominal suffix, despite the fact that this L1 does not have a morpheme that is functionally similar to the Swedish suffix – Hungarian does not express definiteness using dedicated morphology.

By contrast, other studies have cast some doubt on the hypothesis that presence versus absence of inflectional or free-standing morphology in the L1 influences L2 acquisition of the Scandinavian NP structure. For example, Salameh et al. (1996:166–167) found that Arabic-speaking pre-school children acquiring Swedish as an L2 aligned to some extent with monolingual children acquiring Swedish (cf. Anderssen 2007; Bohnacker 1997, 2003) and with Lahtinen’s (1993a) Finnish-speaking learners when it came to double-definiteness contexts. In the material, which was elicited using an imitation task, “Icelandic” structures, where the left-edge article is omitted (e.g., *lång-a jacka-n*; long-DEF jacket-DEF), were slightly more frequent than double-definiteness structures (91 versus 80 occurrences). By contrast, “Danish” structures, where the definite suffix is omitted (e.g., *den lång-a jacka*; DEF long-DEF jacket), were rare (29 occurrences).³¹ Further, the indefinite and the definite forms of the adjective were virtually always used correctly. This is surprising given that Arabic has a definite left-edge article, *al* (Kremers 2003). It would seem that these child-L2 learners developed to some extent like L1 children and were not much influenced by their L1 (see Meisel 2011:211–223 on child-L2 acquisition).³²

In this context, it is worthwhile to take a closer look at the double-definiteness contexts in Axelsson’s (1994) material, although they were few (a consequence of definite modified NPs being rare in natural speech). Table 2.3, summarising her numbers of adjectivally modified NPs in definite contexts broken down by structural pattern and L1 group, shows that the Finnish

³¹ Where Faroese, Norwegian and Swedish exhibit double definiteness, Icelandic uses the definite nominal suffix only while Danish uses the definite left-edge article only (Delsing 1993; Julien 2005).

³² Yet, although the “Icelandic” structure was the least frequent one, they *did* produce it in 14.5 per cent of all double-definiteness contexts, which is much more compared to monolingual children acquiring Swedish or Norwegian as their L1.

and the Polish groups outperformed the Spanish group when it came to accurately producing the double-definiteness structure (with both the left-edge article and the suffix present), and that bare NPs (without any definiteness encoding) were produced more frequently by the Polish- and Spanish-speakers than by the Finnish-speakers. The question is why this should be so, given that Spanish is alone among the three languages in having articles and in not generally allowing NPs to be bare. The fact that the Spanish-speaking learners often placed adjectives post-nominally, as can also be seen in Table 2.3, might be a clue to the answer. This is the default position for attributive adjectives in Spanish (Kattán-Ibarra & Pountain 2003:25–26), but it yields a word order which is ungrammatical in Swedish. It is plausible that, since Spanish-speaking learners of Swedish are thus unable to use an L1 structure when producing adjectivally modified NPs, they need to devote attentional resources to inhibiting the selection of the prohibited L1 structure, and this might leave them with fewer resources for producing grammatical morphology (cf. Austin et al. 2015). Since, from a communicative perspective, definiteness marking is less relevant than the semantically heavy adjective, it is only to be expected that they would focus on placing the adjective correctly rather than on producing the requisite grammatical morphology (cf. Trenkic 2007, 2009). This might explain not only why the double-definiteness structure posed a greater challenge to the Spanish group than to the Finnish and Polish groups but also why the Spanish-speaking learners so frequently produced bare NPs.

However, for the present discussion, the most interesting finding in Axelsson (1994) is that, when the learners omitted one of the two definite morphemes, they were more likely to produce the “Danish” structure than the “Icelandic” one, regardless of L1 (although that tendency was clearer in the Polish and Spanish groups than in the Finnish one). In this respect, all three L1 groups deviated from the pattern attested in monolingual Norwegian- and Swedish-speaking children (Anderssen 2007; Bohnacker 1997, 2003), in other Finnish-speaking learners (Lahtinen 1993a; Nyqvist 2013; but see Heikkilä 2008, where Finnish-speaking learners of Swedish appeared to prefer the definite left-edge article to the nominal suffix) and in Arabic-speaking pre-school children acquiring Swedish (Salameh et al. 1996). To summarise, L1 effects can definitely be discerned in Axelsson’s (1994) double-definiteness contexts, but there is no straightforward explanation for why all three groups preferred the left-edge article to the nominal suffix.³³

³³ It is also interesting to note that, in Jin et al.’s (2009b) experiment, the Chinese-speaking group outperformed the English-speaking group with respect to suppliance of the Norwegian

TABLE 2.3: *Definite modified NPs in Axelsson (1994)*

Structural pattern			Group		
			L1 Finnish	L1 Polish	L1 Spanish
DEF	Adj	N-DEF	13	10	2
DEF	Adj	N	6	13	8
	Adj	N-DEF	4	6	4
	Adj	N	5	22	11
	N	Adj	0	2	9

From the previous paragraphs it can be concluded that having an L1 with articles is an advantage when acquiring the *meaning* of definiteness in Norwegian and Swedish, while it is unclear what the role of the presence or absence of articles and inflectional morphology in one's L1 is when it comes to acquiring the NP structure. The present thesis does not contribute much to the solution of this puzzle, as it does not compare different L1 groups but focuses on Russian-speaking learners only. While the results obtained will of course be interpreted against the background of the earlier research presented above, the primary contribution of the present thesis with regard to cross-linguistic influence consists in its L3 perspective. As mentioned in the Introduction, the beginning learners of Swedish that I tested longitudinally during their first two terms of study had all previously acquired English to varying degrees of proficiency. By testing their use of English articles at the beginning of the Swedish course, I was able to explore how knowledge of an article system in an L2 influences the development of a partly similar, partly different article system in an L3.

In the last decade or so, the SLA field has seen an increasing interest in L3 acquisition. Questions under debate include whether an L3 is influenced primarily by the L1 or by the L2 as well as what factors determine the source of transfer (e.g., González Alonso, Rothman, Berndt, Castro & Westergaard 2017; Falk & Bardel 2010; Hammarberg 2001; Jaensch 2013; Leung 2007; García Mayo & González Alonso 2015; Rothman 2010; Puig-Mayenco, González Alonso & Rothman 2018; Rothman, González Alonso & Puig-Mayenco 2019; Westergaard 2019; and see contributions in Bardel & Sánchez 2020). However, the issue of L3 acquisition of articles has so far received relatively little attention (but see Aribas & Cele 2021; Jaensch 2009; Leung 2005).

definite left-edge article, despite the fact that Chinese does not have articles while English has a definite article which is structurally similar to the Norwegian definite left-edge article.

In the Scandinavian context, several researchers have acknowledged that L2 learners are often actually L3 (or L_n) learners, and there is some speculation in the literature about what this might entail. For example, Nyqvist (2013:60) assumed that her Finnish-speaking learners of Swedish were aided by their knowledge of English when it came to choosing between indefinite and definite forms. By contrast, Jin et al. (2009b:195) and Nordanger (2017:373–374) found that learners of Norwegian with Chinese or Russian, respectively, as their L1 differed from learners of Norwegian with English as their L1 although they all had some knowledge of English; in both cases, this made the authors conclude that there was no evidence of L2–L3 influence. However, it should be pointed out that these studies did not involve actually *testing* the participants’ knowledge of the English article system. It is obviously the case that if Russian- or Chinese-speaking participants had not actually acquired the form and meaning of definiteness in English (their L2), that form and that meaning could not be transferred to the L3 they were learning.

A few studies have searched explicitly for evidence of L2-English influence on Finnish-speaking learners of Swedish (Heikkilä 2008; Lahtinen 2010; Lindroos 2006). Findings include that Heikkilä’s (2008) learners clearly preferred the definite left-edge article to the nominal suffix, both in their written production and in grammatical tests (note that this contrasts with the findings of Lahtinen 1993a, discussed above). The same preference for the left-edge article was reported by Lahtinen (2010). Both authors concluded that this was due to influence from L2 English. This is by no means an implausible explanation, given that the same pattern was also observed in Anderssen and Bentzen’s (2013) English–Norwegian bilingual child and in Nordanger’s (2017) English-speaking learners. However, it should be clear from the discussion above that it cannot be taken for granted that what may look like transfer is actually transfer.³⁴ Importantly, Heikkilä (2008) and Lahtinen (2010) did not test their learners’ knowledge of the English article system, meaning that the authors can merely speculate about the role of L2–L3 influence. Moreover, owing to the nature of the studies, they focused on negative transfer only – as pointed out by Ringbom (2007:6), “only negative transfer is immediately visible to the researcher”.

Before turning to those few studies that aimed to investigate L2–L3 transfer of articles more seriously, I would like to mention an interesting argument in favour of L2 Swedish–L3 English transfer with regard to articles in native speak-

³⁴ As pointed out by Axelsson (1994) and Heikkilä (2008), the structural similarity between the Swedish definite left-edge article and the Finnish demonstrative *se* might also play a role.

ers of Finnish. Jarvis (2002) looked at the use of articles in Finnish-speaking adolescents learning English at school. Since Swedish is an official language in Finland, they had all studied Swedish too. Some of them had studied English for six years and Swedish for two years; others had studied English for two years and Swedish for six years. Surprisingly, those who had studied English for longer were more prone to omit articles than those who had studied English for a shorter period of time. Jarvis (2002:406) suggested that this might be due to the fact that the Swedish article system is morphologically, phonologically and semantically more salient than the English one.³⁵ This salience could have made those learners who had studied Swedish for longer more aware of definiteness marking, and that awareness could then have facilitated their acquisition of English articles. However, once again, knowledge of the L2 (Swedish in this case) was not tested and, as pointed out by the author himself, the “interpretation is admittedly speculative” (Jarvis 2002:408). In fact, given that Swedish, at least traditionally, is considered a high-prestige language in Finland (e.g., Hult & Pietikainen 2014:2–3), it might be that those pupils who started learning Swedish before English came to a large extent from family backgrounds where education was considered important. If this was so, that could also explain their better mastery of English articles.

So far, it can be concluded that, while many have speculated about the role of L2 influence in L3 acquisition of definiteness marking in Norwegian and Swedish, nobody has actually tried to test this. Outside the Scandinavian context, there are three studies that did aim actually to test the role of an L2 in L3 acquisition of articles. The first one, Leung (2005), used both oral-production tasks and multiple-choice tests to compare Vietnamese- and Cantonese-speaking learners of French with respect to article suppliance and choice. Vietnamese and Cantonese are typologically similar languages without articles, while French has articles. The Vietnamese-speakers, learning French in Canada, had no previous experience of article languages while the Cantonese-speakers, studying French in Hong Kong, were proficient speakers of L2 English. In other words, the former group learned French as an L2, the latter as an L3. The analysis revealed that the L3 learners supplied articles more frequently in obligatory contexts than the L2 learners, which made Leung (2005:58) conclude that the L1 does not necessarily have a privileged role in L3 acquisition, and that an L3 is not just another L2. Interestingly, however, the difference

³⁵ Here it is interesting to note that, in contradiction of the implicit claim by Jarvis (2002), Nyqvist (2018:15) claimed that “[d]efiniteness markers in Swedish, for example, are notorious for their *low saliency*, which makes them difficult to acquire” (italics added).

between the two groups was evident mainly in the multiple-choice tests, which presumably tapped into explicit knowledge; it was less obvious in the oral-production tasks, which presumably tapped into implicit knowledge (Leung 2005:57). This raises interesting questions about what was actually transferred.

The second study, Jaensch (2009), investigated the role of general L2-English proficiency in Japanese-speaking learners' use of articles in L3 German. The L1 thus lacked articles while both the L2 and the L3 had them, which is the same situation as for the Cantonese group in Leung (2005) and for the Russian-speaking learners in the present thesis. Scores on both a cloze test and an oral-production task suggested a positive correlation between proficiency in L2 English and article use in L3 German, even though the correlations were not statistically significant. Jaensch (2009:254) concluded that "the data do not indicate a *clear* pattern of positive L2 proficiency influence, but are perhaps indicative of a potential trend (which with a larger group of learners may possibly become significant)" (italics in the original).

The third study, Aribaş and Cele (2021), compared Turkish-speaking learners of L2 English without previous knowledge of article languages with Turkish-speaking learners of L3 English who had previously acquired German. Turkish lacks a definite article, although it has an indefinite one (*bir*). Like Leung (2005), Aribaş and Cele (2021) found that the L3 group outperformed the L2 group with respect to article use, and like Jaensch (2009) they also found that, within the L3 group, level of L2 proficiency affected the acquisition of L3 articles.

It is clear that these three studies approached the question of L2–L3 transfer of articles more directly than the Scandinavian studies discussed above. They did at least test L2 proficiency. Nevertheless, there is a problem of causality. It is obvious that the French learners in Leung (2005) were not randomly assigned to the two groups. Indeed, it is likely that the L1-Vietnamese immigrants in Canada differed from the L1-Cantonese students in Hong Kong not only in their lack of previous experience of article languages. Leung (2005:58) concluded that "[i]t appears that the Hong Kong Cantonese speakers are in a more advantageous position in their acquisition of French than the Vietnamese speakers *because of the facilitative effects of English*" (italics added), but it is in fact difficult to say whether their advantage was due to their knowledge of English. For example, the Cantonese-speakers were foreign-language students whereas the Vietnamese-speakers were second-language learners, and this might explain why the difference between the two groups pertained primarily to explicit knowledge. It might also be the case that the mere experience of having learned an L2 made the Cantonese group more confident and moti-

vated to learn an L3. In this context, it is relevant to point out that Ma, Yao and Zhang (2018) found that Chinese students learning two foreign languages developed a better language-learning aptitude than students learning only one foreign language. Leung (2005:58) herself admitted that, “in order to put forward an even stronger argument for the L2–L3 difference in our case, we would need to have a control group of L1 Cantonese L2 French”. Likewise, regarding the Japanese-speaking learners of L3 German in Jaensch (2009), the fact that those with a higher L2-English proficiency appeared to have an advantage over those with a lower L2-English proficiency might also be due to the fact that they were simply more skilled or motivated language learners in the first place. The same objections can be raised to the findings of Aribaş and Cele (2021).

To summarise, this section has shown that research on cross-linguistic influence in L2 acquisition of definiteness and of the Scandinavian NP structure is in some respects inconclusive: both presence versus absence of articles in the L1 and presence versus absence of rich inflectional morphology in the L1 may play a role. In particular, the existing body of research on L2–L3 transfer of articles leaves much to be desired. This thesis makes a contribution to the understanding of how knowledge of an L2 with articles influences the acquisition of an L3 with articles by testing the learners’ knowledge of L2 articles at the onset of L3 studies and by examining the association between this knowledge and their longitudinal development of L3 morphology. Importantly, I performed separate analyses with respect to the indefinite article, which is structurally similar in the L2 and the L3, and with respect to definiteness marking, which is not. If an L2–L3 correlation is actually due to transfer, this correlation should be stronger for the indefinite article, which is similar and thus presumably more “transferable”. Moreover, by also testing the learners’ language-learning aptitude at the onset of L3 studies, I strove to disentangle cross-linguistic influence from an aptitude effect, which is crucial since aptitude might have been a confounding factor in Leung (2005), Jaensch (2009) and Aribaş and Cele (2021). In the next section, I will discuss the notion of *language-learning aptitude*.

2.3.4 Language-learning aptitude

Language-learning aptitude is an umbrella term referring to “a set of abilities particularly useful for the learning of second languages” (Skehan 2015:367).³⁶ In SLA, these abilities are traditionally conceived of as *domain-specific*, that is,

³⁶ To some extent, *aptitude* and *ability* are synonymous: “an ability is an aptitude if it predicts the rate and speed of learning” (Wen et al. 2017:2–3).

distinct from, say, general cognitive capacity and motivation, and as relatively *stable*, that is, unlikely to change over time (Li 2015:387; Skehan 2015:368).³⁷ Carroll and Sapon's (1959) influential Modern Language Aptitude Test (MLAT) targeted four aptitude components: associative memory, phonemic encoding, grammatical sensitivity and inductive learning. Several recent attempts have been made to link the construct of aptitude to contemporary developments in SLA (e.g., Robinson 2001; Skehan 1998, 2002), cognitive science (e.g., Linck et al. 2013; Grigorenko, Sternberg & Ehrman 2000) and neurology (e.g., Biedroń 2015). Even so, much aptitude research is still based on MLAT and its modern successors, and so is the research project reported in this thesis. Concretely, I administered the LLAMA Language Aptitude Tests (Meara 2005; see below) to the Russian-speaking learners at the onset of Swedish study in order to further explore the processes involved in L2 acquisition of definiteness and NP structure.

Although language-learning aptitude, alongside age and motivation, has proved to be one of the most critical factors in L2 acquisition, it has received relatively little scholarly attention (Wen et al. 2017:4).³⁸ However, while early research into aptitude focused on correlations between initial aptitude scores and general outcome in formally instructed foreign-language learners (e.g., Carroll 1964), recent decades have witnessed a new strand of studies exploring the interplay between different types of aptitude and different types of learners, learning situations and learning tasks (e.g., Abrahamsson & Hyltenstam 2008; Artieda & Muñoz 2016; Bokander 2021; de Graaff 1997; Granena 2013b, 2016; Granena & Long 2013; Robinson 2005; Sáfár & Kormos 2008; Sheen 2007; Tolentino & Tokowicz 2014). In essence, modern aptitude research seeks not only to *predict* but also to *explain* L2 acquisition: it has the potential to bring about “a vital insight into understanding what a language making capacity really is” (Skehan 2015:380).³⁹

³⁷ In educational psychology, aptitude may refer to any measurable characteristics of individuals that enable them to learn, including affection and motivation (Snow 1991:205; cf. Li 2015:387).

³⁸ The reluctance to investigate aptitude effects might be due to the assumption that aptitude is immutable: if aptitude cannot change, there may be little practical use to having more knowledge about it (cf. Skehan 1998:199). However, if aptitude is a factor in L2 acquisition, we would definitely want to know more about it, regardless of any applicability concerns.

³⁹ “Aptitude tests are not”, Skehan (1998:205) noted, “simply predictive measurements which have no explanatory power. They have a rationale in relation to language learning processes, and they have an even wider justification through general psychological processes.”

Although the existing body of research into language-learning aptitude is not huge, it provides several interesting findings. Li's (2016) meta-analysis, covering 66 studies published between 1965 and 2013, confirmed that aptitude is distinct from motivation and distinguishable from, but overlapping with, intelligence. Further, while his analysis confirmed that different components of aptitude are predictive of different aspects of learning, phonemic-encoding ability turned about to be the most important aptitude component. An investigation only of those studies that dealt with the association between aptitude and grammar (a subset of 33 studies) revealed that aptitude does indeed account for a considerable proportion of the variance in L2 acquisition of grammar, especially with regard to explicit learning at early stages of acquisition (Li 2015). Skehan (2015) reviewed the same subset of studies more qualitatively and made some intriguing observations. To simplify somewhat, high-aptitude learners generally had an advantage when it came to grammatical phenomena that were redundant (i.e., communicatively irrelevant), non-salient (i.e., hard to perceive in input) and novel (i.e., not present in the learners' L1). Further, a high degree of aptitude appeared to enable learners to benefit more from explicit (and also to some extent implicit) instruction and feedback. Similar results were reported by Tolentino and Tokowicz (2014), who conducted an experiment where 39 native speakers of English were taught a mini-version of Swedish, including three grammatical structures, during 2.5 weeks. Controlling for, among other things, the role of structural similarity and the participants' analytical skill, they found that analytical skill appeared to be more crucial for learning structures different from those of the L1 than for learning structures similar to those of the L1. Together, these tendencies suggest that aptitude, in particular phonemic-encoding ability, might enhance "early pattern identification" (Skehan 2015:373). However, Skehan (2015:380) pointed out that the conclusions are tentative since the studies reviewed were relatively few. Not least, since several studies have shown that language-learning experience may result in higher aptitude (e.g., Ma et al. 2018; Rogers et al. 2017; Sáfár & Kormos 2008), Skehan (2015:371) called for more longitudinal studies to "tease out directions of causality".

With regard to the LLAMA Language Aptitude Tests, which were used in the present project, Bokander and Bylund (2020:6) observed that "no study has so far investigated the predictive validity of the LLAMA in a strictly longitudinal design".⁴⁰ As mentioned, LLAMA is loosely based on the MLAT (Carroll

⁴⁰ But see the recent study by Bokander (2021), which explored transfer-aptitude interactions in 92 L2 learners from various L1 backgrounds during their first six weeks of Swedish study. The

& Sapon 1959) but diverges from it in certain respects (Meara 2005:2). The test battery is the result of ongoing, explorative research. Even though it has never been claimed to be a valid and reliable measure of aptitude, it has become “a serious competitor to the MLAT” (Bokander & Bylund 2020:2): LLAMA scores have been used as dependent or independent variables in at least 40 studies (see the comprehensive review in Bokander & Bylund 2020). Reasons for its popularity may include that it is freely available, relatively quickly administered, and – at least to some extent – language-independent.

The LLAMA test battery comprises four tests. The tests are based on languages that test-takers are assumed not to know. The first one, the “B” test, targets the ability to associate written words with visual stimuli. The second one, the “D” test, targets phonemic-coding ability. Note that this ability “is not just the capacity to make sound discriminations, but, more important, the capacity to code foreign sounds in such a way that they can be later recalled” (Skehan 1998:200). In short, the test-taker has to memorise short sequences of spoken language. The third one, the “E” test, targets the test-taker’s ability to associate spoken syllables with alphabet-like symbols. Finally, the “F” test targets grammatical inferencing: from a set of written sentences in an artificial language, where each sentence describes a picture, the test-taker has to figure out how that language works. As pointed out by Skehan (1998:201–204), Carroll’s (1964) constructs of *inductive learning* and *grammatical sensitivity* might actually be the same thing; at least, the F test covers both of them.⁴¹

It has been suggested that the D test, which targets phonemic-encoding ability, reflects implicit-learning processes whereas the other three subtests reflect explicit-learning processes (e.g., Granena 2013a, 2016). This idea resonates with the observations that age, educational background and language-learning experience appear to affect scores on some subtests but not on the D test (Rogers et al. 2016; Rogers et al. 2017) and with the observation that response times are shorter in the D test (Bokander & Bylund 2020). In addition, with regard to the E test, Bokander and Bylund (2020) noticed that it is possible to solve it without actually associating sounds with symbols: analytically deciphering the structure of the written syllables is sufficient. In other words, the task can be solved in an “analytical fashion”, meaning that “it may be problem-

analysis revealed a clear effect of typological similarity: learners with a Germanic L1 outperformed those with a non-Germanic L1. Interestingly, aptitude played a role only in learners with a Germanic (i.e., typologically similar) L1.

⁴¹ As suggested by the names of the tests (B, D, E and F), earlier versions of LLAMA comprised more tests.

atic to claim that LLAMA E is a valid measure of phonemic encoding ability” (Bokander & Bylund 2020:25). This should be kept in mind, since scores on the E test turned out to be an important variable in the present thesis relating to L2 acquisition of definiteness and NP structure.

To my knowledge, so far only one study has investigated the relationship between aptitude and L2 acquisition of definiteness and articles. Sheen (2007), conducting an intervention study with a pre-test, a post-test and a delayed post-test, compared the effect of different kinds of corrective feedback on article use in 91 learners of English from various L1 backgrounds. Importantly, she also investigated whether the effect of feedback was moderated by the learners’ language-analytic ability. The findings included a general positive and durable effect of feedback, especially if the feedback included metalinguistic explanations. Further, the feedback was more helpful to highly analytical learners, and the interaction between feedback and aptitude was particularly evident for metalinguistic feedback. Sheen (2007:276) concluded that “metalinguistic [corrective feedback] affords a higher level of awareness that facilitates learning and this awareness is triggered by a process that takes place more readily in learners with a greater capacity to engage in language analysis”. However, it should be noted that the outcome of the intervention was measured using tasks that probably tapped into explicit knowledge of article use.

In sum, language-learning aptitude appears to be a factor in L2 acquisition, not least when it comes to the learning of grammar, and not least when it comes to post-adolescent learners in formal settings, such as the Russian-speaking learners investigated in this thesis. There is one study suggesting that language-analytic ability plays a role in L2 acquisition of articles, but that study focused on explicit knowledge of articles. In addition, longitudinal studies are scarce, and nobody has investigated the role of aptitude in L3 acquisition. The present research project explored the role of different types of aptitude in L3 acquisition of two grammatical morphemes, one of which is structurally similar to its L2 counterpart and one of which is structurally dissimilar (and both of which are absent in the L1). Since research into aptitude has the potential not only to predict but also to explain language learning, I believe that the present project makes a substantial contribution to our theoretical understanding of L2/L3 acquisition of functional morphology.

2.3.5 Linguistic complexity and input frequency

One reason why L2 researchers are so interested in articles is that articles are extremely frequent in the linguistic input but still pose a severe challenge to L2 learners. For example, Young (1996:136) pointed out that, “[g]iven that

articles are the most frequent forms that are available to learners in input, the difficulty that learners experience in using them correctly appears, at first sight, surprising". Since articles are ubiquitous in input, frequency is rarely considered a factor in theoretical accounts of article errors perpetually observed in L2 learners. Instead, the difficulty is typically attributed to L1 influence and to different types of complexity: complexity of form, complexity of meaning and complexity of form–meaning mapping. However, Ogawa's (2015) corpus study revealed that patterns of article omission repeatedly reported in the L2 literature may to some extent be explained in terms of frequency-based regularities in input. The research project reported in this thesis exploited some peculiarities of the Swedish NP structure to shed light on the role of linguistic complexity and input frequency in the omission of L2-functional morphology.

As mentioned above, L2 learners from article-less L1 backgrounds generally omit articles more frequently in adjectivally modified NPs (Art + Adj + N) than in non-modified ones (Art + N). For L2 English, this has been attested (or noticed in passing) in learners whose L1 was Turkish (Goad & White 2004), Finnish (Jarvis 2002), Thai (Pongparoj 2007, 2008), Indo-Aryan (Sharma 2005), Japanese (Snape 2006), Serbian (Trenkic 2000, 2007) and Czech (Young 1996). The same pattern has also been attested in Japanese-speaking learners of German (Jaensch 2009), another language with left-edge articles. Further, children acquiring their L1 also tend to drop articles when the NP includes an adjective, to the effect that articles and adjectives appear to be in complementary distribution around the age of two years; this has been reported for German (Clahsen, Eisenbeiss & Vainikka 1994) and French (Granfeldt 2000), both of which have left-edge articles. However, this effect is rarely seen in L2 learners who have an L1 with articles, like Swedish (Granfeldt 2000; Jarvis 2002), English (Nordanger 2017) or French (Pongparoj 2007, 2008).

The negative effect of adjectival modification on article production could be accounted for in terms of both linguistic complexity and frequency-based regularities in the linguistic input. On the one hand, an NP with an adjective is more complex than an NP without one. On the other hand, adjectivally modified NPs are less frequent in input than non-modified ones, meaning that articles are more strongly associated with nouns than with adjectives (cf. Austin et al. 2015; Trenkic 2009). These possibilities have been investigated and discussed by Trenkic and colleagues. In her earlier work, Trenkic (2000, 2004, 2007, 2008, 2009) followed Lyons (1999) in assuming that article-less languages, such as the Slavic ones discussed in Section 2.2.3, lack the syntactic category D, and that determiner-like words such as demonstratives are syntactically represented as adjectives in those languages. Hence, according to her Syn-

tactic Misanalysis Hypothesis (Trenkic 2007, 2008, 2009), L2 learners from such L1 backgrounds misanalyse articles as being adjectives. Trenkic (2007) used Garrett's (1975) and Levelt's (1989) modular speech-production models to explain how this syntactic misanalysis makes learners drop the article in adjectivally modified NPs. She posited that, for L1 speakers of article languages, articles are *procedural* words, which are produced automatically for structural reasons. In MCF terms, the syntactic module (which has its own working memory) ensures that articles are produced independently of what happens in other modules. By contrast, in L2 speakers, articles misanalysed as adjectives are *conceptual* words, which are produced intentionally for communicative reasons. The production of conceptual words draws upon the mind's attentional resources, which are limited. As an NP with an adjective is more complex, both structurally and semantically, than an NP without one, it requires more resources, which leaves fewer resources for the production of the article misanalysed as an adjective. This is why, on Trenkic's (2007) analysis, article-omission rates are generally higher in adjectivally modified NPs than in non-modified ones in learners whose L1 does not have articles.

Ionin et al. (2009:354) questioned whether the competition-for-attentional-resources account really is dependent on the idea that L2 learners misanalyse articles as adjectives, noting that “[e]ven if [L2 learners] have correctly analyzed articles as being determiners – rather than adjectives – limited attentional resources could still cause article drop”. Indeed, in Trenkic's later work, the Syntactic Misanalysis Hypothesis plays a less central role while competition for attentional resources remains a key factor. Trenkic and colleagues (Austin et al. 2015; Trenkic 2009; Trenkic, Mirkovic & Altmann 2014; Trenkic & Pongpairoj 2013) nowadays lean towards Bates and MacWhinney's (1981, 1989) Competition Model, according to which all languages within a multilingual mind are perpetually and simultaneously active, competing for selection in language processing and use (see also MacWhinney 1997).⁴² Experimental studies of cross-linguistic syntactic priming have shown that the activation of a syntactic structure in one language increases the activation level of the corresponding structure in other languages, be they L1s or L2s (e.g., Hartsuiker et al. 2016). While some studies suggest that such priming requires the involved structures to share the same surface structure (e.g., Loebell & Bock 2003), others have shown that priming takes place independently of surface similarity (e.g., Chen et al. 2013). When it comes to L2 learners, L1 structures typically

⁴² Another important component in Trenkic's (2009; cf. Trenkic & Pongpairoj 2013) later work is Almor's (1999) Informational Load Hypothesis (see also Almor & Nair 2007).

rest at higher activation levels than L2 structures, meaning that they are likely to win the competition unless the speaker *inhibits* their selection. Inhibition requires attentional resources, which – again – are limited. Processing a relatively complex NP is generally a fairly taxing task, and the heavier the working load is, the fewer resources will be left for inhibiting L1 structures. Consequently, all else being equal, the more complex the NP is, the more likely it is that L2 speakers will fail to prevent L1 structures from being selected, to the effect that functional morphology not provided by the L1 is dropped.

Austin et al. (2015) tested this claim on L2 learners of English whose L1 was Thai, a language without articles and plural marking. The experiment showed that the learners were more prone to omit the plural *-s* in definite NPs (*the N-s*) than in indefinite ones (*N-s*) and that they were more prone to omit the definite article in plural NPs (*the N-s*) than in singular ones (*the N*). In other words, the more complex the NP was, the more likely it was that functional morphology not provided by the learners' L1 was dropped.

However, Trenkic (2009) and Austin et al. (2015) also considered the possibility that the omission of functional morphology in complex structures is not necessarily to be explained solely in terms of L1–L2 competition. According to N. Ellis (2002:143), L2 acquisition is “the piecemeal learning of many thousands of constructions and *the frequency-biased abstraction of regularities within them*” (italics added). Following this line of thinking, Trenkic (2009) pointed out that articles appear in input together with nouns more frequently than they appear together with adjectives. She went on to suggest that “[i]mplicit learning of these probabilities may, and probably does, play a part in L2 article production” (Trenkic 2009:134). When it comes to the Thai-speaking learners, Austin et al. (2015) acknowledged that singular definite NPs are more frequent than plural definite ones, and that indefinite plural NPs are more frequent than definite plural ones. In other words, “the competition that leads to variability may be coming solely from the L2 itself” (Austin et al. 2015:707). Therefore, they concluded that further research needs to “compare functional morphology production in L2 English with morphologically richer L2s, where additional options may need to be considered in production, looking at the frequency and consistency of the input available to learners for a specific piece of morphology” (Austin et al. 2015:713–714). As I have pointed out above, the Swedish NP may in fact be a good testing-ground for such a pursuit.

Indeed, a negative effect of adjectival modification on article production was noticed in Axelsson's (1994) Finnish-, Polish-, and Spanish-speaking learners of Swedish and in Nordanger's (2017) Russian-speaking learners of Norwegian, but – interestingly enough – only for the indefinite article, which is at the left

edge of the NP, not for the definite nominal suffix. It is tempting to speculate that this asymmetry may be due to the fact that adjectives intervene between the indefinite article and the noun (e.g., *en vit katt*) but not between the noun and the definite nominal suffix (e.g., *den vit-a katt-en*).⁴³ In this thesis, I explore that possibility.

2.4 The present research project

In this background chapter, I first introduced a broad theoretical framework for language learning and use – the Modular Cognition Framework (MCF) – that brings together insights from linguistics and cognitive science and enables coherent descriptions of the distinction between linguistic form and meaning, of the distinction between explicit and implicit knowledge, of the ways in which cross-linguistic influence can be exerted, and of the role played by input frequency in learning. With MCF as a backdrop, I then described definiteness as a category of meaning, delineated the morphosyntactic encoding of this meaning in article languages such as English and Swedish (in particular, the Swedish double-definiteness structure) and discussed the means by which that meaning is expressed in languages without articles, such as Russian. Finally, I reviewed previous research into L2 acquisition of articles and definiteness, focusing on the Scandinavian context. This review revealed, among other things, that previous research has not investigated whether acquiring the form of definiteness is somehow related to learning the meaning of that form. It also revealed that it is unclear what role explicit knowledge of article semantics plays in L2 learners' production of articles in authentic language use, what role L2 knowledge and language-learning aptitude play in the development of L3 articles, and what role structural complexity and input frequency play in L2 learners' omission of functional morphology.

Through a series of four studies, the research project reported in this thesis investigated different aspects of definiteness in Russian-speaking learners of Swedish who had previously acquired English to varying degrees of proficiency.

⁴³ On a similar note, it should be mentioned that the effect of adjectival modification was statistically significant only in indefinite contexts (and only in the lower-proficiency group) in Snape's (2006) Japanese-speaking learners. That might suggest that the asymmetry noted by Axelsson (1994) and Nordanger (2017) is not due to the structural difference between the indefinite article and the definite nominal suffix. However, Trenkic's (2000) Serbian-speaking learners of English dropped both indefinite and definite articles more frequently in modified NPs (and they did so independently of proficiency level).

The primary material used throughout the four studies was collected by means of a structured, communicative, oral-production task that elicited a considerable number of NPs from each participant. Further data were collected using a test of metalinguistic knowledge as well as a test of language-learning aptitude.

Specifically, Study I focused on the learners' increasing ability to produce the four morphemes that Swedish uses to express indefiniteness and definiteness, their ability to choose correctly between indefinite and definite forms, and the relationship between these two abilities over time. Study II focused on the learners' metalinguistic knowledge of article semantics and their use of this knowledge when solving a oral-production task. Study III, which I conducted together with Susan Sayehli, focused on the influence of the learners' L2-English knowledge and their language-learning aptitude on their emerging use of L3-Swedish functional morphology.⁴⁴ Specifically, as English and Swedish are structurally similar with respect to the indefinite article but different with respect to definite forms, we analysed indefinite and definite articles separately to examine the interaction between cross-linguistic influence, language-learning aptitude and structural similarity. Finally, Study IV discussed the role of structural complexity and input frequency in the learners' omission of functional morphology. The four studies are listed in (43).

(43) Studies included in the thesis:

- Study I Agebjörn, Anders (forthcoming). Development of the form and meaning of definiteness in Russian-speaking learners of Swedish. *Norsk lingvistisk tidskrift* 39(1).
- Study II Agebjörn, Anders (2020). Explicit and implicit knowledge of article semantics in Belarusian learners of English: implications for teaching. In: Trotzke, Andreas & Tanja Kupisch (Eds.), *Formal linguistics and language education: new empirical perspectives*. (Educational linguistics 43.) Cham: Springer Nature Switzerland AG, pp. 179–201.
- Study III Agebjörn, Anders, & Susan Sayehli. Cross-linguistic influence and language-learning aptitude in L3 acquisition of functional morphology. Unpublished manuscript.
- Study IV Agebjörn, Anders (2021). Swedish noun-phrase structure in Russian-speaking learners: an explorative study of L1 influence and input-frequency effects. *Journal of the European Second Language Association* 5(1), pp. 16–29.

Each study comes with its own set of specific research questions. Together, the four studies are intended to answer the two overarching questions given in (44). I believe that, by answering those questions, the research project advances our

⁴⁴ For the record, I designed the study, collected the data, carried out the analysis and wrote the first draft of the manuscript. Susan Sayehli and I then refined the analysis and revised the manuscript together.

understanding of L2 acquisition of definiteness and the Swedish NP structure, and, consequently, our understanding of L2 acquisition of grammatical form and meaning more generally. In the next chapter, I will present the methods used throughout the project.

- (44) RQ1 What do the development of the form of definiteness, the development of a form–meaning association and the relationship between these two developments look like in post-puberty Russian-speaking learners of Swedish as a foreign language?
- RQ2 How can the development of definiteness in post-puberty Russian-speaking learners of Swedish as a foreign language be accounted for in terms of explicit and implicit knowledge, cross-linguistic influence, language-learning aptitude, structural complexity and frequency-based regularities in the linguistic input?

3. Methods

This chapter presents the general methodological approach of the project. Quantitative data were collected from two groups of Russian-speaking learners of Swedish (and English) – a beginner group and a more advanced group – and from native speakers of Swedish and English, respectively. The four groups of participants are presented in Section 3.1. The tasks – a communicative oral-production task that elicited adjectivally modified and non-modified NPs in indefinite and definite contexts, a written test tapping into the learners’ explicit knowledge of article semantics, and a test of language-learning aptitude – are described in Section 3.2. The procedure for data collection is summarised in Section 3.3. The data obtained using the oral-production task constitute the primary material used throughout the four studies included in the thesis, and the analysis of this material is described in Section 3.4. Regarding the analysis of the test of explicit knowledge and the test of language-learning aptitude, the reader is referred to the summaries of Study II and Study III, respectively, which are to be found in Chapter 4. Finally, ethical considerations are discussed in Section 3.5.

3.1 Participants

Four groups of participants were involved in the research project. First, to track the initial development of definiteness, I followed a group of Russian-speaking learners, whose Swedish was tested at three data points during their first year of Swedish study. At data point 1, their use of English articles and their language-learning aptitude were also tested. Most members of this beginner group attended 80-minute Swedish lessons twice a week in two groups taught by two

teachers at the Faculty of International Relations, Belarusian State University, Minsk. A few members of the beginner group attended two-hour Swedish lessons twice a week as part of an evening course offered at the Centre for Swedish Studies in Minsk and taught by one of the teachers from the university. I approached all students in their classrooms a few weeks into their first term of study and informed them about the research project. Of the 24 university students and 10 evening-course students, 19 and 7, respectively, chose to participate in the project. At data point 2, after one term of study, two participants had dropped out (one from the university and one from the centre); and at data point 3, one more student from the centre had dropped out. Hence there were 26 participants at data point 1, 24 at data point 2 and 23 at data point 3.

Further, to investigate the potential long-term development of definiteness, I tested a more advanced group of learners in Minsk. I refer to them as *the advanced group*, but note that this means only that they were more advanced than the beginners. To recruit them, I arranged for information to be provided about the research project at the Belarusian State University, at the Minsk State Linguistic University, at the Centre for Swedish Studies and at a meeting arranged by the Swedish Institute Alumni Network in Belarus. All members of the advanced group had studied Swedish for at least two years and were still using the language regularly. To begin with, 26 advanced learners chose to participate, but three of them never handed in the background questionnaire and so were excluded from further analysis. The advanced learners finally included had started learning Swedish 2–13 years before participating in the research project.

Finally, to confirm the validity of the principal oral-production task and to examine whether the learners actually deviated from the target norm, I also collected L1 data from native speakers of Swedish and English. The members of the L1-Swedish reference group were recruited from two universities and three upper-secondary schools in Sweden. Of 31 students who chose to participate, one was excluded because she never handed in the background questionnaire and four were excluded because it was unclear whether they had actually learned Swedish from birth. The members of the L1-English reference group were 14 American students enrolled on a summer course in Swedish offered in Sweden and 10 students at an international upper-secondary school in Sweden. Of those 24 students who chose to participate, 7 were later excluded (4 from the summer course and 3 from the upper-secondary school) because it was un-

clear from their background questionnaires whether they had actually learned English from birth, leaving 17 students.¹

Table 3.1 shows the numbers of participants included, broken down by sex and age. The beginner group is given two lines, one for data point 1 and one for data point 3, when three of them had dropped out of their respective Swedish courses. The average age was higher in the advanced group than in the other groups. The age distribution is similar in the beginner group and the two reference groups if one 39-year-old outlier in the beginner group is disregarded. Females were over-represented in all groups but especially in the advanced-learner group.

TABLE 3.1: *Number, sex and age of participants*

Group	<i>n</i>	Sex		Age				
		Female	Male	<i>NA</i>	<i>M</i>	<i>Md</i>	<i>SD</i>	Range
Beg. 1	26	19	7	0	19	17	4.4	17–39
Beg. 3	23	17	6	0	19	17	4.6	17–39
Adv.	23	22	1	0	25	23	5.5	19–37
L1 Swe.	26	16	8	2	18	17	1.5	16–22
L1 Eng.	17	11	6	0	19	20	2.5	15–22

Here and henceforth, *n*, *M*, *Md* and *SD* stand for number, mean, median and standard deviation, respectively. Further, *Beg. 1*, *Beg. 2* and *Beg. 3* stand for the beginner group at data points 1, 2 and 3, respectively; *Adv.* stands for the advanced group; and *L1 Swe.* and *L1 Eng.* stand for the L1-Swedish and L1-English reference groups, respectively.

The learners' Swedish proficiency was tested using the grammar and vocabulary subtests of the Swedex A2 and Swedex B1 Swedish-proficiency tests (Folkuniversitetet 2017). The A2 test is a ten-item multiple-choice test (maximum score: 10) and the B1 test is a 40-item C-test (maximum score: 40). The beginners' proficiency was tested at data point 3, when they had completed almost two terms of Swedish study. Table 3.2 shows the results from these proficiency tests. The advanced group outperformed the beginners both on the A2 test ($t(25.7)=5.5$; $p<.001$) and on the B1 test ($t(43.9)=5.9$; $p<.001$).

All learners were native speakers of Russian, which is the most common language spoken in Belarus. Of the beginners, eleven participants (nine at data point 3) reported Belarusian as an additional L1. Of the advanced learners, six reported Belarusian and one reported Ukrainian as additional L1s. These

¹ In Study II, less strict inclusion criteria were used for the L1-English reference group, meaning that 22 participants (instead of 17) were included.

TABLE 3.2: *Swedish proficiency in the learner groups*

Group	Swedex A1				Swedex B1			
	<i>M</i>	<i>Md</i>	<i>SD</i>	Range	<i>M</i>	<i>Md</i>	<i>SD</i>	Range
Adv.	9.5	10	0.7	8–10	31.5	34	7.4	13–40
Beg. 3	6.8	7	2.3	2–10	18.3	19	7.7	2–34

three languages are rather similar; importantly, they all lack articles (Sussex & Cubberly 2006).

The beginners had started learning English 0–29 years before starting to learn Swedish ($M=11$; again note the 39-year-old outlier) at an average age of onset of 7 year (range: 5–17). Their self-reported English proficiency in terms of the Russian version of the global scale of the European Common Framework of Reference (Council of Europe 2001) ranged from A2 to C1 with a mean in between B1 and B2. English was their first and strongest article language, with a single exception: one beginner had started learning German before English and claimed to be more proficient in German than in English. The advanced learners' self-reported English proficiency ranged from B2 to C2 ($M=C1$).

When it comes to previous language study, 13 of the beginners had studied one or two other article languages besides English before starting to learn Swedish while 13 of the advanced learners had studied one article language besides English before learning Swedish. In most cases, those languages were German or a Romance language, but one beginner and one advanced learner had studied some Norwegian (proficiency level: A1). It should also be mentioned that the beginner who had previously studied Norwegian had also started learning Swedish by himself during the summer vacation before the Swedish course began. Finally, many learners had studied Belarusian as an L2 and some of them had studied other article-less languages: Finnish, Hungarian, Polish and Ukrainian.

The members of the L1-Swedish and L1-English reference groups had learned English and Swedish, respectively, at home from birth. Two of the L1-Swedish-speakers had been raised bilingually (Swedish–Lithuanian and Swedish–Latvian, respectively). The L1-Swedish participants had all studied English, and all but one of them had also studied one to four additional languages: German, Dutch, Romance languages, Japanese, Russian and/or Danish. Most of the L1-English-speakers (who, it should be noted, were recruited in Sweden) had been raised multilingually. Other L1s reported besides English were Swedish, German, Spanish, Hindi, Luo, Farsi and Singalese. The

L1-English-speakers had also studied additional languages, including Danish, French, Spanish, Mandarin and Tolkien Elvish languages.

3.2 Tasks

In this section, I will first describe the communicative oral-production task (Section 3.2.1) that was used to elicit both English and Swedish NPs; as mentioned above, these NPs constitute the primary material throughout the four studies included in the thesis. Then I will describe the test of explicit knowledge (Section 3.2.2) which was used in Study II and the test of language-learning aptitude (Section 3.2.3) which was used in Study III.

3.2.1 The oral-production task

To elicit NPs from the participants, I used a semi-structured elicitation method (cf. Eisenbeiss 2010). In particular, loosely inspired by Jaensch (2009) and Trenkic (2000), I designed a communicative “game” which the participants could solve only by uttering sentences including adjectivally modified and non-modified NPs in indefinite and definite contexts. Specifically, I met each participant individually and our conversation was audio-recorded. On the table between me and the participant, I had put a board depicting a town and wooden building-blocks depicting people, animals and objects such as cars and buses. Some of these blocks could be uniquely referred to only with adjectivally modified NPs. The participant was given a map indicating where on the board various blocks should be placed and was instructed to explain to me how to place them accordingly, without showing me the map. In other words, to accomplish the task, the participant had to convey information to which I had no access. This means that the task simulates a real communicative situation. The task took about ten minutes to solve and elicited about 90 lexical NPs per participant.

To ensure that the participants used lexical NPs instead of pronouns, and to ensure that they referred to a given block using both indefinite and definite NPs, the blocks were divided into three sets. There was a new map for each set of blocks, but the board was not cleared between the sets. An extract from the transcription of an L1-English-speaker explaining to me where to place the first set of blocks is given in (45a). As can be seen in this example, the speaker used indefinite NPs to introduce three blocks depicting a white car, a red car and a chair. The extract in (45b) is of the same speaker later instructing me where to place the second set of blocks (which included blocks depicting girls

and boys). Since the new blocks had to be placed in relation to the ones that were already on the board, the speaker used definite NPs to refer to the same white car and the same red car, which were now identifiable to me owing to their positions on the board. The extract in (45c) is from the same speaker instructing me where to place the third set of blocks (which included blocks depicting black and white cats). The speaker now used a definite NP to refer to the chair referred to in (45a). The task design thus ensured that the same referent appeared in both indefinite and definite contexts. In this way, I also controlled for the possibility that nouns could have been root-learned in their indefinite or definite form.

- (45) a. on the school
we have a white car
and a red car
as well as a chair
- b. on top of the white car
there is a girl
on top of the red car
there is a boy
- c. we start with the school again
on the chair
there is a white cat

The vocabulary needed to solve the task in Swedish was found in the first chapters of the Swedish L2 textbooks *Rivstart* (Levy Scherrer & Lindemalm 2007) and *Svenska utifrån* (Nyborg & Pettersson 1991), that is, in material that the beginner group had worked through by the time of the first test occasion. In addition, there were some English–Russian–Swedish cognates such as *bank*, *restaurant* and *park*. The Swedish nouns were all of common gender, the default gender in Swedish. Further, to make the beginners feel confident that they would be able to solve the task although they had been studying Swedish for only a couple of weeks at data point 1, they received an instruction sheet written in English and Russian. This instruction sheet included a word list with all nouns, adjectives, verbs and prepositions needed to solve the task. It should be pointed out that, in the Swedish version of this word list, the nouns appeared with the indefinite article. This was because that article is typically used to provide information about the gender of a noun in L2 word lists. The appearance of indefinite articles may have triggered the beginners to use indefinite articles more than they otherwise would have, which should be kept in mind when interpreting the results.

Finally, to give the beginners, who were tested on three occasions, the impression that there was a developmental aspect to the task, and to prevent them from trying to prepare for the task, a few blocks were added to the task at data points 2 and 3. The L1-Swedish participants were randomly assigned one of the three versions of the task. Comparisons of the three L1-Swedish groups using ANOVAs confirmed that the variables calculated did not differ between the three task versions. Table 3.3 lists the items depicted on the wooden building-blocks used in the three versions.² The English version of the task corresponded to the first version used at data point 1.

TABLE 3.3: *The wooden blocks in the oral-production task*

Set	Version 1	Added to version 2	Added to version 3
1	6 chairs 4 red cars 4 white cars 1 black bus 1 red bus 1 white bus	3 tables	
2	4 boys 4 girls 1 police officer		2 books 1 red cup 1 white cup
3	4 black cats 4 white cats 1 black dog 1 white dog	2 yellow balls 1 red ball	

3.2.2 The test of explicit knowledge

Explicit knowledge of article semantics was tested using a written test. The participants had to choose between indefinite and definite forms in specific contexts and then write brief explanations for some of their choices, like in Kołaczek (2018), Nyqvist (2013) and Yang and Ionin (2009). Each test item was a short dialogue, loosely inspired by Ionin (2003) and Trenkic (2008), with gaps where the learners had to choose between indefinite, definite and bare forms. The dialogues were designed to test whether the learners knew that the choice between indefinite and definite forms requires the speaker to take the hearer's perspective. In total, there were 35 dialogues, but metalinguistic ex-

² Note that a few of the new blocks depicted items referred to with neuter-gender nouns.

planations had to be written only for the last seven ones. One of those seven dialogues was later excluded from the analysis because it turned out that participants were able to choose the accurate article in that dialogue without actually paying heed to hearer knowledge. Hence six dialogues remained in the analysis. Indefinite forms were expected in two of them. In those dialogues, the speakers introduced specific referents of which the hearers could have no knowledge. Definite forms were expected in the other four cases. In two of those dialogues, the speakers referred to referents that had previously been introduced (i.e., the referents were directly identifiable), whereas in the other two, the speakers referred to referents that were indirectly identifiable – here, definite forms would be chosen on the assumption that the listener knew that an office normally has one unique boss and that a book normally has one unique author. The test thus enabled me to examine both what forms the learners chose in different contexts and the extent to which they were able to explicitly account for their choices in terms of identifiability (or hearer knowledge).

3.2.3 The LLAMA Language Aptitude Tests

Language-learning aptitude was tested using Bokander and Bylund's (2020) on-line version of the LLAMA Language Aptitude Tests (Meara 2005). As mentioned in Section 2.3.4, the test battery, which comprises four computerised tests, measures the test-taker's ability to learn different aspects of artificial languages (based on real languages assumed to be unknown to most people) and is therefore largely language-neutral. The B test targets vocabulary learning; test-takers have two minutes to associate a set of novel words with drawings. The D test targets phonological memory; test-takers have to memorise ten short, spoken sound sequences which they hear only once. The E test targets the ability to associate sounds with symbols; test-takers have two minutes to associate a set of written symbols with spoken sounds. The F test, finally, targets grammatical or analytical skill; test-takers have five minutes to deduce the meaning of words and grammatical forms by reading 20 sentences written in an unknown language, each sentence describing a drawing. It should be pointed out again that, according to Bokander and Bylund (2020), who conducted the hitherto largest validation study of the LLAMA tests, it appears that the E test can be solved without actually establishing associations between sounds and symbols. Instead, the way the symbols are organised on the screen may enable test-takers to solve the task in a more analytical manner. In other words, the subtest may tap into some kind of analytical skill rather than the ability to associate sounds with symbols. This is important to keep in mind, as the E test turned out to be a key factor in Study III.

3.3 Data-collection procedure

As mentioned above, the beginners were tested on three occasions during their first year of Swedish study. Table 3.4 lists the tasks that they completed throughout the project. In total, I met them on eight occasions (referred to as Sessions I–VIII in the table): four times at the beginning of their first term of study (data point 1), twice at the beginning of their second term (data point 2) and twice at the end of the second term (data point 3). In Session I, the participants were informed about the study; those who volunteered to participate signed an informed-consent form and filled in a background questionnaire. In session II, I met the participants individually in an empty classroom or in a quiet library area to test their Swedish. At this point, the average time since their first Swedish class was 26 days ($SD=2.8$; range: 22–33); they had received, on average, 17 hours of Swedish teaching ($SD=2.5$; range: 14–24). The participants performed the oral-production task as well as two reaction-time experiments which are not reported in the present thesis; this took about 1.5 hours. Session III was also an individual meeting; it took place on average 8 days after Session II ($SD=1.9$; range: 3–11). On this occasion, potential background factors were tested: L2 English, language-learning aptitude (LLAMA tests) and working memory; the results from the working-memory test are not reported in this thesis. This also took about 1.5 hours. In Session IV, the beginners completed an English and a Swedish version of the explicit-knowledge test. This session took place on average 5 days after Session III ($SD=3.9$; range: 0–14), in a classroom setting.

At data point 2, about four months after data point 1, and at data point 3, about seven months after data point 1, I met the beginners first individually for the oral-production task and the reaction-time tests (Sessions V and VII, respectively) and then in a classroom setting for the explicit-knowledge test (Sessions VI and VIII, respectively). In the last session, Session VIII, the beginners also completed the vocabulary and grammar subtests of the Swedex A2 and Swedex B1 general-proficiency tests as well as a final questionnaire about their participation in the project.

As mentioned, to prevent the beginners from figuring out what the tasks were actually intended to test, they were given different versions of the tasks at the three data points (as indicated by the numbers in brackets in Table 3.4). Further, for the same reason, each task also included distractors. The final questionnaire, where the participants answered questions about their participation in the study, confirmed that the members of the two learner groups had no clue that the research project targeted definiteness and NP structure.

TABLE 3.4: *Tasks completed by the beginners*

Data point	Session	Task
1	I	Background questionnaire
	II	Swedish: Production (1)
		Swedish: Reaction time A (1) Swedish: Reaction time B (1)
	III	English: Production
English: Reaction time		
Language-learning aptitude Working memory		
IV	Swedish: Explicit knowledge (1)	
	English: Explicit knowledge	
2	V	Swedish: Production (2)
		Swedish: Reaction time A (2)
		Swedish: Reaction time B (2)
VI	Swedish: Explicit knowledge (2)	
	3	Swedish: Production (3)
Swedish: Reaction time A (3)		
Swedish: Reaction time B (3)		
VIII		Swedish: Explicit knowledge (3)
	Swedex A2 and B1	
	Questionnaire about the study	

Numbers in brackets indicate task versions.

The advanced learners were tested individually on one occasion under similar conditions as the beginner group. Except for the English tasks, they completed the same tasks that the beginners completed at data point 1: the oral-production task, the two reaction-time tests, the LLAMA tests and the working-memory test. This took them about two hours. They were then offered the choice to fill out a questionnaire immediately afterwards or to take it with them and hand it in on a later occasion. This questionnaire included the explicit-knowledge test, the proficiency tests, the background questionnaire and the questionnaire about their participation in the study.

The members of the two reference groups were also tested individually on one occasion under similar conditions as the learner groups. They completed the same tasks as the learners except for the language-aptitude test and the proficiency tests. Further, in the explicit-knowledge test, the native speakers were not asked to give explanations for their answers. The whole procedure took about an hour.

The beginners were instructed in English; this never caused any problems. For each task, they also received written instructions in English and Russian.

The advanced learners were instructed in Swedish and, if needed, in English. They also received written instructions in English and Russian. The native speakers of English and Swedish were instructed in English and Swedish, respectively.

3.4 Analysis

In this section, I will focus on the analysis of the audio-recordings of the participants solving the oral-production task. As mentioned, those recordings constitute the primary material used throughout the four studies included in the present thesis. The analysis of that material yielded a set of NPs that I will refer to as the Noun-Phrase Corpus; see Appendix A. For details about the test of explicit knowledge and the test of language-learning aptitude, the reader is once again referred to the summaries of Study II and Study III, respectively, in Chapter 4.

The first step was to transcribe the recordings. While transcribing, I excerpted candidate NPs for inclusion in the corpus. My decisions to include or exclude NPs were guided by an aim to ensure that the corpus would be as informative as possible with regard to the form and the meaning of definiteness and that comparisons between groups and data points would reveal as much information as possible. Hence only NPs actually needed to solve the task given to the participants were included. Specifically, the NPs excerpted were singular NPs referring to the wooden building-blocks or to the specified locations on the board. The rationale for this was that the native speakers and the advanced learners elaborated their language more than the beginners did. For example, while a native speaker might say something along the lines of the example in (46a), a beginner would typically say something like (46b) instead. Since the research project did not investigate general development of linguistic repertoire but focused on definiteness and NP structure, the interesting thing to compare here was how the native speaker and the learner referred to *the boy* and *the park*; the fact that the native speaker added information about exactly where in the park the boy was to be placed (“in the upper right corner”) was not considered relevant. For the same reason, procedural NPs such as *my mistake* and *one more time*, which were typically used more by the native speakers than by the learners, were excluded. In this context, it should be noted that the analysis did not consider post-nominal modifiers at all. For instance, even though the entire word string *the boy in the park* constitutes one NP (with another one embedded in it), the analysis simply treated *the boy* as one NP and *the park* as another. Finally, when the participants repeated the same NP type once or several times

directly after each other (the beginners often did this), or when they repeated an NP that I had uttered right before, those NPs were not included. Again, this was because those NPs were deemed not to provide information about the participants' representation of definiteness and of the Swedish NP structure.

- (46) a. a boy in the upper right corner of the park
b. boy in park

Next, each excerpted NP was coded for morphosyntactic structure and reference. With regard to structure, all NPs were coded for whether or not they included a noun, an adjective and an indefinite or definite article. For example, the English NP *the cat* was coded as [DEF X N] – the “x” indicates that this NP did not include an adjective. In addition, the Swedish NPs were coded for whether or not they included a definite adjectival suffix and a definite nominal suffix. Hence the Swedish NP **en vit-a katt-en* was coded as [INDEF ADJ-DEF N-DEF], while the NP **vit katt-en* was coded as [X ADJ-X N-DEF]. Note that, for English, the demonstratives *this* and *that*, which were used a few times, also counted as definite articles. Likewise, *another* and *one* counted as indefinite articles. Note also that, for Swedish, gender was not taken into consideration. For example, both *en* and *ett* counted as an indefinite article independently of whether or not the right form was chosen. Likewise, *den* and *det*, as well as the demonstratives *den här* and *det här*, were coded as definite left-edge articles.³

With regard to reference, the oral-production task elicited NPs with five types of reference. Whether these were coded as indefinite or definite was decided on the basis of the native speakers' choice of forms. Reference to (i) a non-unique block that had not yet been placed on the board was coded as indefinite. Reference to (ii) a specified location on the board, to (iii) a block that had already been placed on the board and to (iv) a block that had been mentioned right before was coded as definite. Reference to (v) a unique block that had not yet been placed on the board (including the last non-placed member of a set of identical blocks) was coded as ambiguous with respect to definiteness – both native speakers and learners preferred to use indefinite NPs when referring to such blocks, but since definite NPs were also perfectly acceptable, these NPs were deemed not to be informative when it came to the meaning of definiteness. The reason why the participants normally chose indefinite forms to refer to these unique blocks was that they focused on the map rather than

³ But in Study IV, more strict criteria were used. Note that the demonstrative *denna*, which is followed by an uninflected noun in standard Swedish, was never used by the participants.

on the table and so did not realise that there was only one block of its kind left on the table.

An inter-coder reliability test was carried out for the Swedish data. Six recordings were transcribed and coded by another Swedish-speaking SLA researcher: two from the beginner group at data point 1, two from the advanced group and two from the Swedish reference group. In total, 592 NPs were excerpted by at least one of us. Of these, 96.5 per cent were excerpted by both of us. Where there was disagreement, this was usually because only one of us assessed a given NP as a repetition. With regard to morphosyntactic structure, for the 571 NPs excerpted by both of us, we agreed in 93.9 per cent of the cases. In 35 cases, we did not agree. For example, we often disagreed on whether a common-gender noun ending in a vowel (e.g., *flicka*) was inflected (e.g., *flicka-n*) or not, which can be hard to decide. There were also cases where one of us heard *vit affär* 'white shop' while the other heard *vid affär* 'by shop', which can be explained with reference to the fact that final consonants are devoiced in Russian. Following the inter-coder reliability test, I went through the recordings and transcriptions once more, paying special attention to those problematic NP types. Note that the second researcher did not code the NPs for reference because the distinction between definite, indefinite and ambiguous contexts was largely inherent in the design of the task (NPs referring to non-unique blocks not placed on the board were always coded as indefinite, NPs referring to blocks already placed on the board were always coded as definite, etc.).

A total of 16,754 NPs were coded. Those NPs were then searched through manually, and 4.6 per cent of them were excluded for a number of reasons. Again, my aim was to ensure that the data set would be as informative and comparable as possible. After this culling, the final Noun-Phrase Corpus included 15,979 NPs. Table 3.5 shows, for each group and data point, the number of NPs finally included as well as the number of NPs excluded for different reasons. A total of eight types of NPs were excluded. Four types were excluded from both the English and the Swedish data. To begin with, (i) NPs without a head noun, such as *the red*, were excluded. This structure is ungrammatical in English but grammatical in Swedish; it was excluded from both the English and the Swedish data to make the data sets as comparable as possible. Another reason for excluding these NPs from the Swedish data was that an NP without a noun is not informative with regard to the nominal definite suffix. Further, (ii) NPs where the participant corrected the morphosyntactic structure were excluded because I wanted to avoid a discussion about whether the first spontaneous structure or the second repaired structure is more informative with

regard to the participants' grammatical knowledge. Additionally, (iii) NPs that included inherently definite adjectives (also known as “selectors”) such as *same*, *first*, *next*, *last*, *left* and *right* were excluded; this was because omission of the definite article is permitted in such NPs in Swedish, and to some extent in English (Dahl 2004:153). Finally, (iv) plural NPs were excluded. Recall that NPs with plural reference were already excluded during the transcription and coding phase. However, NPs that referred to single objects were included independently of the form of the NP. In particular, plural forms were sometimes used to refer to single objects by the learners of Swedish, a language with rich inflectional morphology. Those NPs were subsequently also excluded, because it was deemed to be unclear what the learners had intended to express with these plural forms.

As can also be seen in Table 3.5, four (generally less common) reasons for exclusion apply only to the Swedish data. To begin with, (v) NPs including English words were excluded, because the participants could hardly be expected to use Swedish morphology with English words. Further, (vi) one NP with a possessive pronoun and one NP with the pronoun *någon* ('any/some') were also excluded from the Swedish data. Additionally, (vii) three NPs where the omission of the definite nominal suffix was licensed by a relative clause were excluded. Finally, (viii) seven NPs of the type *affär nummer ett* ('shop number one') produced by the L1 speakers and the advanced learners were excluded because the bare noun appears to be licit in this specific construction.

Interestingly, the proportion of excluded NPs is higher in the advanced group than in the other groups. The reason for this seems to be twofold: the members of this group resembled the native speakers in that they produced many NPs with selectors and many NPs without a noun, and they resembled the beginners in that they corrected many NPs and used plural forms for singular reference.

Information about the number of NPs included in the Noun-Phrase Corpus, broken down by group, data point, language and structural pattern, is given in Tables A1–A6 in Appendix A, starting on page 277. These tables give a good idea of what the material elicited by the oral-production task in question actually looked like. However, they do not show the great individual variation found between the learners. For this reason, it should be pointed out that, while I used the corpus in different ways in the four studies, depending on their individual purposes, in each study I calculated *individual* values for each participant and data point. This approach differs from that of Axelsson (1994), Nyqvist (2013) and other earlier studies, who treated their data sets *only* as corpora. In this thesis, all mean values reported are *grand means* – means of

TABLE 3.5: Numbers (percentages) of included and excluded NPs

	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
Included	1,613	2,347	2,624	1,891	2,407	2,474	2,623
	(95.3)	(97.8)	(96.9)	(85.5)	(98.5)	(95.6)	(97.0)
Excluded due to							
(i) no noun	7	14	32	122	11	27	17
	(0.4)	(0.6)	(1.2)	(5.5)	(0.5)	(1.0)	(0.6)
(ii) correction	3	22	0	69	24	72	50
	(0.2)	(0.9)	(0.0)	(3.1)	(1.0)	(2.8)	(1.8)
(iii) selector	70	16	51	94	2	0	0
	(4.1)	(0.7)	(1.9)	(4.2)	(0.1)	(0.0)	(0.0)
(iv) plural	0	2	0	28	10	15	0
	(0.0)	(0.1)	(0.0)	(1.3)	(0.4)	(0.6)	(0.0)
(v) English	-	-	0	2	1	0	3
	-	-	(0.0)	(0.1)	(0.0)	(0.0)	(0.1)
(vi) poss./ <i>någon</i>	-	-	0	2	0	0	0
	-	-	(0.0)	(0.1)	(0.0)	(0.0)	(0.0)
(vii) relative	-	-	0	1	2	0	0
	-	-	(0.0)	(0.1)	(0.1)	(0.0)	(0.0)
(viii) "N No. 1"	-	-	2	5	0	0	0
	-	-	(0.1)	(0.2)	(0.0)	(0.0)	(0.0)

means. In other words, the statistical analyses treated each participant, rather than each NP, as a data point, causing the statistical power to decrease while the credibility of the results increased. This approach not only ensured that participants who produced a relatively large number of NPs did not exert a disproportionately large impact on the statistical analysis, but it also – more importantly – enabled me to explore correlations between different variables. In Study I, for example, I calculated a set of variables intended to measure the extent to which the participants actually *used* the four grammatical morphemes investigated and another set of variables measuring the extent to which they used them *in accurate contexts*. Since I was examining the data at an individual level, I was then able to look at whether learners who were relatively keen to use the morphemes were also relatively sensitive to the meaning of these morphemes, and vice versa. The results from the four studies will be summarised in the next chapter, after a brief discussion of ethical issues.

3.5 Ethical considerations

The research project was carried out in accordance with the Swedish Research Council's (2016) *Rules and Guidelines for Research* and the ethical principles of the *Declaration of Helsinki* (World Medical Association 2018). Since no sensitive data such as information about participants' religion or political position were collected, the project did not need to go through an ethical review (Swedish Research Council 2016). Nevertheless, I took necessary measures to ensure that each participant was informed about the purpose of the study, the tasks involved, any burdens and benefits, and integrity issues. Most importantly, I made sure that each participant volunteered out of his or her own free will.

Concretely, each participant signed an informed-consent form (written in their native languages) before any data collection was carried out. As can be seen in Appendix B, starting on page 283, this form included one page providing all necessary information and one page where the participants, before signing the form, had to tick several boxes to confirm that they had actually understood the information: what tasks they would be subjected to and how long they would take; how the data collected would be used; how they would be compensated for their participation; and how they should proceed if they wanted to withdraw their consent at any point. Since all participants were at least 15 years old, they did not need their parents' consent to participate in the project, as it entailed no risks for the participants (Swedish Research Council 2016). Upon their participation, each participant received a gift – a communicative game from *Kylskåpspoesi*[™] for the learners (the beginners received three games,

one for each data point) and a cinema ticket for the native speakers – and a certificate attesting to their participation in a research project.

However, research ethics is about much more than informed-consent forms and gifts (cf. Eckert 2013; Mallinson 2018). Above all, I was always aware that it might be uncomfortable for a young student to meet individually with an unknown adult stranger. I was also aware that they might feel obliged to participate in the study because I approached them in an institutional setting, via their teachers. For this reason, I was careful to treat them in a both friendly and professional manner. When I met the participants individually, we always started by going through the informed-consent form together. In particular, I assured them that their teachers would not be informed of whether they chose to participate or not and – if they chose to participate – would not be told about their performance on the research tasks. Further, I offered them snacks and non-alcoholic beverages, asked them about their studies, and always warned them before I started a recording. Most importantly, I spoke to them about my research and explained that it was not about how “good” they were but about what it means to learn a new language. Not least, I explained that the tasks they would be subjected to were very different from ordinary tests administered to students in a language programme, that those tasks might be perceived as tedious and difficult, and why this was so – I introduced the notion *ceiling effect* to them. The final questionnaire, handed in by all participants after data collection was finished, confirmed that participation in the research project had indeed been a positive experience for all of them.

On a final note, it should be pointed out the learner data were collected with help from the Centre for Swedish Studies in Minsk, Belarus. This is a non-governmental institute funded by Riksföreningen Sverigekontakt, a Swedish foundation. In other words, the government of the Republic of Belarus has not exerted any influence on the research project and has never had any access to the data collected.

4. Summary of Studies

In this chapter, I will summarise the four studies included in the thesis: Study I, which tracked the development of the form and meaning of definiteness (Section 4.1); Study II, which examined the relationship between the learners' explicit and implicit knowledge of article semantics (Section 4.2); Study III, which explored the influence of L2-English article use and that of language-learning aptitude on the emerging use of L3-Swedish functional morphology (Section 4.3); and Study IV, which discussed patterns of omission of L2 definiteness marking in relation to linguistic complexity and to frequency-based regularities in input (Section 4.4). The presentations are brief – for details about the variables calculated and the statistical tests performed the reader is referred to the four articles, which are included in the present thesis, starting at page 171.

4.1 Study I: Form and meaning

In the Introduction, I mentioned that learning a new language involves acquiring new forms and associating those forms with certain meanings. From the perspective of the Modular Cognition Framework (MCF), this amounts to creating and co-indexing new syntactic and conceptual structures and raising their relative resting levels (e.g., Sharwood Smith 2017:158–161; Sharwood Smith & Truscott 2014:93–107). This process may be affected by input frequency (e.g., N. Ellis 2002; Sharwood Smith 2017:151–152) and by the nature of the phenomena to be acquired: complexity and redundancy of form, abstractness of meaning, and opacity of form–meaning mapping (e.g., DeKeyser 2005). Taking these observations as a point of departure, Study I investigated the de-

velopment of the form and meaning of definiteness in the Russian-speaking learners of L2 Swedish.¹ First, I tracked the learners' increasing ability to produce the four grammatical morphemes exemplified in (3) in the Introduction. Then I examined their ability to choose between indefinite and definite forms in accordance with the pragmatic context. Finally, I explored the relationship between these two abilities over time.

To begin with, from the Noun-Phrase Corpus, I extracted all Swedish NPs with unambiguously indefinite or definite reference to the wooden building-blocks. NPs with ambiguous reference were excluded since they are not informative with regard to the meaning of definiteness. NPs referring to the locations on the board, such as *parken* 'the park', were also excluded because those locations had bare-NP labels on them (e.g., "Park"), which appeared to trigger use of bare nouns in the learners; since reference to locations was always definite, including these NPs in the analysis would have resulted in disproportionately high omission rates for NPs with definite reference.

Afterwards, for each participant and data point, I calculated five variables that targeted the form of definiteness: one measured the participants' general ability to produce indefinitely and definitely marked NPs while the other four were morpheme-specific variables measuring the ability to produce the indefinite article (*en*), the definite nominal suffix (*-en*), the definite adjectival suffix (*-a*) and the definite left-edge article (*den*), respectively.² I also calculated three variables that targeted the meaning of definiteness: the first one measured the participants' general ability to choose accurately between indefinitely and definitely marked NPs in accordance with the pragmatic context; the second one measured their overgeneralisation of indefinitely marked NPs; and the third one measured their overgeneralisation of definitely marked NPs.³

Overall, the results for the reference group suggested that each variable was a valid measure. However, it should be mentioned that the native speakers sometimes omitted the definite left-edge article, resulting in "Icelandic" structures

¹ Three beginners who did not remain in the study throughout the three data points, as well as two beginners and one advanced learner who solved the oral-production task without producing NPs in definite contexts, were excluded from the analysis.

² Indefinitely marked NPs were defined as NPs including the indefinite article and no definite morphemes; definitely marked NPs were defined as NPs including at least one of the three definite morphemes and *not* the indefinite article.

³ Note that the meaning variables could not be calculated for learners who did not produce the relevant morphemes. For example, the proportion of definitely marked NPs produced in accurate contexts could not be calculated for those who did not produce any definitely marked NPs.

like *vit-a katt-en*. As explained in Section 2.2.2, this structure is not necessarily ungrammatical. Further, the native speakers sometimes produced NPs in unexpected contexts: some of them used indefinitely marked NPs in an “overly pedagogical” way to introduce blocks already placed on the board and hence identifiable. For example, they might say (here in English), “There is *a white car* in the park – put a black cat on it” instead of just “Put a black cat on the white car in the park”. Further, some of the native speakers also used definitely marked NPs to refer to non-unique blocks, apparently conceiving of these identical blocks as several instances of the same referent. For example, they might say (here in English again), “Put *the boy* and the girl by the black bus by the church, and then put *the boy* by the red car by the restaurant too”, actually referring to two different (but identical) building-blocks depicting boys.

Regarding form (or the ability to actually produce the morphemes investigated), the reference group scored significantly higher than both learner groups on all measures. In the learner groups, there was a development towards the target norm. The beginners manifested extensive use of the indefinite article even at data point 1, of the definite nominal suffix at data point 2, and of the definite adjectival suffix at data point 3. Only two of the beginners started to produce the definite left-edge article during their first two terms of Swedish study, but several of the advanced learners had acquired the complete double-definiteness structure. Recall that the indefinite article was provided to the beginners in the instruction sheet, which may be part of the explanation for its early emergence. However, in the advanced group, production of definite morphemes correlated positively with years of exposure while production of the indefinite article correlated negatively (although not significantly so) with years of exposure, which indicates that the indefinite article was used more extensively at earlier stages of development even in these learners (to whom the instruction sheet was not provided).

In both learner groups, the indefinite article and the definite nominal suffix, which are required regardless of adjectival modification, were supplied more consistently than the definite adjectival suffix and the definite left-edge article, which are required only in modified NPs. With regard to the double-definiteness structure, the developmental order in (47) was reflected in both learner groups by a clear implicational relationship between the three definite morphemes: the definite left-edge article rarely occurred without the definite adjectival suffix, which rarely occurred without the definite nominal suffix. On a final note, it should also be mentioned that the indefinite article rarely co-occurred with any definite morphemes in the learner data.

(47) Developmental order for the double-definiteness structure:

1. vit katt
2. vit katt-en
3. vit-a katt-en
4. den vit-a katt-en

Regarding meaning (or the ability to produce the morphemes investigated in accurate contexts), the L1 participants outperformed both learner groups on each of the three measures.⁴ Nevertheless, both learner groups (at each data point) performed far above what chance would have predicted – in other words, they did not use the morphemes randomly. Interestingly, at group level, there was no evident development towards the target norm. Specifically, there were no differences between the three data points in the beginner group, no difference between the beginner group and the advanced group, and no correlation between the meaning variables and years of exposure in the advanced group.

Finally, regarding the relationship between the likelihood of *producing* the morphemes and the likelihood of producing them *in accurate contexts*, the correlations were negative in the beginner group but positive in the advanced group. At data point 1, when the beginners almost exclusively produced the indefinite article, those beginners who were keen to use functional morphology were also generally prone to overuse it. Similarly, at data point 3, those who were keen to produce the definite nominal suffix were also generally prone to overuse it.⁵ Note, however, that those few beginners who produced the definite forms early in development (i.e., the definite nominal suffix at data point 1, the definite adjectival suffix at data point 2 and the definite left-edge article at data point 3) typically did *not* overuse them, but those beginners were so few that this tendency could not be proved statistically. In the advanced group, those learners who produced a relatively large number of indefinitely or definitely marked NPs were also generally better at producing them in accurate contexts.

⁴ It should be pointed out that the beginners at data point 1 did *not* differ from the native speakers with respect to the ability to produce definitely marked NPs in pragmatically accurate contexts. At this point, however, only five beginners produced any definitely marked NPs at all, and those five learners always produced them in accurate contexts. As mentioned above, the meaning variables could not be calculated for learners who did not produce the relevant morphemes.

⁵ Interestingly, a correlation test, which was not reported in the article, showed that those beginners who overused the indefinite article at data point 1 were *not* the same ones who overused the definite nominal suffix at data point 3 ($t=-0.72$; $p=.484$).

To conclude, knowledge of form clearly developed towards the target norm: the indefinite article and the definite nominal suffix, which are used regardless of adjectival modification, emerged earlier in development and were used more consistently than the definite adjectival suffix and the definite left-edge article, which are required only in modified NPs. With respect to double-definiteness contexts, the left-edge article implied the adjectival suffix, which implied the nominal suffix. By contrast, while the learners generally appeared to be sensitive to the meaning of definiteness from the very onset of acquisition, the meaning variables did not reveal any development towards the target norm. Interestingly, however, at some point early in development, some learners over-used morphemes extensively, resulting in negative form–meaning correlations. That this overuse was *not* seen in those few learners who showed the most rapid development with regard to definite morphemes makes it tempting to speculate that sensitivity to the meaning of definiteness may in fact be related to the development of its form. Notwithstanding this possibility, the results clearly demonstrate that form and meaning must be treated separately in research on L2 acquisition of definiteness.

4.2 Study II: Explicit and implicit knowledge

Explicit knowledge and implicit knowledge refer to mental representations available and unavailable, respectively, to consciousness (e.g., Truscott 2015a). Language use is often assumed to depend more on explicit knowledge in L2 learners than in L1 speakers (e.g., Paradis 2009), and it has even been claimed that some kind of awareness is a prerequisite for L2 acquisition (e.g., DeKeyser 2003; Schmidt 1990, 2012). Study II posed the question of whether L2 learners' implicit knowledge of article semantics, operationalised as their ability to choose accurately between indefinite and definite forms in a communicative situation, was associated with their explicit knowledge of article semantics, operationalised as their ability to explain that choosing the right article requires the speaker to take the hearer's perspective. Owing to word-limit restrictions and focus requirements, the study focused on the beginners' production of English NPs and on the English version of the explicit-knowledge test.

Explicit knowledge was measured using the explicit-knowledge test described in Section 3.2.2. First, the learners had to choose between indefinite and definite articles (or bare NPs) in a multiple-choice test comprising six short dialogues with one gap in each. Then they had to write explanations for their choices. In the multiple-choice test, the L1-English speakers (who did not have to give explanations) provided the expected articles to a large ex-

tent, confirming that the six dialogues represented unambiguously indefinite or definite contexts. The learners also chose the expected articles to a fairly high extent. Interestingly, while the learners sometimes chose the indefinite article in definite contexts where the referent was indirectly identifiable, they *never* chose the indefinite article in definite contexts where the referent was directly identifiable (i.e., where the referent had previously been mentioned). This suggests that the learners knew, probably explicitly, that the definite article is used to refer “back” (cf. Kołaczek 2018; Nyqvist 2013; Young 1996). Further, note that the learners almost never chose a bare NP, indicating that they also knew, probably explicitly, that articles are used obligatorily.

The learners’ explanations were first translated from Russian into English by a linguist and native speaker of Russian and then rated on a three-step scale by two researchers independently of each other. Inter-rater reliability was good, although not excellent. Explanations explicitly referring to the hearer’s perspective scored 2 points. Explanations that did not explicitly refer to the hearer’s perspective but that could nevertheless be interpreted in that way scored 1 point. Such explanations included those where the learner used a first-person pronoun, apparently taking the hearer’s perspective (e.g., “We don’t know what pub he’s talking about”). Explanations that did not meet these criteria scored 0 points; these were mostly explanations based on the specificity or concreteness of the referent as well as explanations based on whether or not the referent had previously been mentioned. It was obvious that these explanations were incorrect as they often coincided with incorrect choices of article. For example, when the referent was indirectly identifiable, the learners sometimes chose the indefinite article because “the referent has not been mentioned before”. By contrast, the 2-point and 1-point explanations always coincided with accurate choices of articles.

Afterwards, I calculated an *explicit-knowledge variable* for each learner by summarising the scores for the six explanations. The learners’ average value was low; in fact, only 8 of 26 learners came up with at least one 2-point explanation. Thus, despite being good at choosing accurately between indefinite and definite articles, they rarely explained their choices in a satisfactory way, meaning that they often chose the correct article without being able to explain how they did it. For example, sometimes the learners accurately chose the indefinite article in one of the dialogues where the speaker introduced a referent – a pub – that the hearer had no previous knowledge of, but then they explained this choice in terms of specificity (e.g., “He is not talking about a specific pub”) although the speaker was in fact undoubtedly referring to a certain pub. It can

thus be speculated that implicit knowledge played a role not only in the oral-production task but also in the multiple-choice test.

As mentioned above, implicit knowledge of article semantics was measured using the oral-production task. For each participant, an *article-choice variable* was calculated by dividing the number of articles in accurate contexts by the total number of articles in unambiguously indefinite or definite contexts. Since some learners scored very high on this measure by producing very few articles (all of them in accurate contexts), I calculated an additional *article-use variable* intended to measure the ability to choose between the indefinite and the definite article while simultaneously controlling for article suppliance. To do this, I first calculated an *article-suppliance variable* by dividing the total number of articles by the total number of NPs. Second, that variable was multiplied by the article-choice variable. In this way, the article-use variable singled out those participants who produced *many articles in accurate contexts*.⁶

The reference group scored high on both the article-choice and article-use variables, confirming that the measures were valid to a high extent. The learners scored significantly lower, but far above chance level; however, the spread among them was great. Interestingly, despite this variation in the learner group, neither the article-choice variable nor the article-use variable correlated with the explicit-knowledge variable. Specifically, there were learners who used articles in a fairly target-like manner in the communicative situation without being able to explain what principle governed their choice of articles. Similarly, there were learners who appeared to possess a fairly accurate metalinguistic knowledge that they were not able to employ when solving the communicative task.⁷

To conclude, having the ability to verbalise the fact that choosing between indefinite and definite articles requires the speaker to take the hearer's perspective does not necessarily enable a learner to produce articles in accurate contexts in a communicative situation. And, conversely, the ability to accurately choose

⁶ Note that the article-suppliance and article-choice variables did not correlate with each other.

⁷ Study II was replicated by testing the association between the same two tasks in the advanced L2-Swedish learners (whose English was never tested). This analysis was not reported in the article. The advanced learners' knowledge of L2 Swedish did not differ in any crucial ways from the beginners' knowledge of L2 English (which was reported in Study II) with regard to the explicit-knowledge variable ($M=.21$), the article-choice variable ($M=.89$) or the article-use variable ($M=.68$). Further, just like for the beginners' L2 English, there was no significant correlation between the implicit-knowledge variable and either the article-choice variable ($r(21)=-0.19$; $p=0.399$) or the article-use variable ($r(21)=0.09$; $p=0.692$) for the advanced L2-Swedish learners.

between indefinite and definite articles in a communicative situation does not depend on the ability to explain what principle governs this choice. This result is clearly hard to explain using a theory claiming that learning *requires* awareness of what is being learned. However, it should be underscored that this result by no means eliminates the possibility that explicit knowledge might have an impact on article use even in communicative situations – absence of evidence is not evidence of absence.

4.3 Study III: Aptitude and L2–L3 transfer

Few studies have investigated L2–L3 transfer of articles, and the results so far are inconclusive (cf. Aribaş & Cele 2021; Jaensch 2009; Leung 2005). As was discussed in Section 2.3.3, a methodological challenge for L3 researchers is to disentangle cross-linguistic influence from individual factors such as language-learning aptitude. For example, the fact that L1-Japanese learners who were proficient speakers of English tended to be more successful in acquiring German articles than L1-Japanese learners who were less proficient in English could undeniably be indicative of L2–L3 transfer (cf. Jaensch 2009), but it could just as well be the case that the individuals with a better grasp of English were more talented and motivated language learners in the first place – correlation does not imply causation. In Study III, Susan Sayehli and I dealt with this issue by investigating the effect of both L2-English knowledge and language-learning aptitude on the developing use of L3-Swedish functional morphology. Specifically, we examined the influence of the Russian-speaking beginners' use of L2-English indefinite and definite articles on their developing use of L3-Swedish indefinite and definite forms.⁸ As the Swedish indefinite article is structurally similar to the English one, while the Swedish definite nominal suffix is dissimilar to its English counterpart, one would expect the English indefinite article to be more transferable than the definite one. And as the Swedish definite suffix is a previously unknown morpheme, one would expect aptitude to play a more important role in the acquisition of this morpheme (cf. Skehan 2015;

⁸ Of the 23 beginners who remained in the project throughout the first two terms of study (data points 1–3), four were excluded from Study III because they had started to learn English or Swedish at a considerably higher age than the others, and one was excluded because he had previously learned some Norwegian, which also has a definite nominal suffix. Thus, 18 beginners were included in the analysis (alongside the 17 members of the English reference group and the 26 members of the Swedish reference group). It should be pointed out, however, that the analysis was also run without excluding those five learners and that this did not affect the results in any substantial way.

Tolentino & Tokowicz 2014). This design thus enabled us to shed light on the relationship between language-learning aptitude and cross-linguistic influence.

Like in Study I, all NPs with unambiguous indefinite or definite reference to the wooden building-blocks were selected from the Noun-Phrase Corpus. For each participant and data point, we calculated one morpheme-suppliance variable and one morpheme-choice variable for each of the four morphemes investigated: the English indefinite article (*a/an*), the English definite article (*the*), the Swedish indefinite article (*en*), and the Swedish definite nominal suffix (*-en*). Like in Study II, for each morpheme, the two variables were multiplied with each other to obtain *morpheme-use variables* which indicated whether a participant produced a certain morpheme often *and* produced it in accurate contexts. Note that, of the three Swedish definite morphemes, only the definite nominal suffix was considered in the analysis. This was unproblematic as the definite adjectival suffix and the definite left-edge article practically never occurred without the definite nominal suffix; in other words, by looking only at the definite nominal suffix, we captured practically all definitely marked NPs.⁹

Afterwards, we examined the correlations between the learners' use of the English indefinite and definite articles, their use of the Swedish indefinite article and the definite nominal suffix at data points 1, 2 and 3, and their four scores from the LLAMA Language Aptitude Tests (Meara 2005) described in Section 3.2.3. There were several statistically significant positive correlations between the learners' use of English and Swedish morphemes, both indefinite and definite ones. With regard to language-learning aptitude, the test scores did not correlate significantly with the learners' use of English articles, which meant that L2 and aptitude effects could be teased apart. By contrast, the aptitude scores tended to correlate positively with the learners' use of Swedish morphemes, although most correlations were not significant. In particular, the D-test score tended to correlate with the learners' use of both Swedish morphemes while the E-test and F-test scores tended to correlate primarily with their use of the definite nominal suffix. However, the correlation was statistically significant only between the E-test score and the learners' use of this morpheme at data point 3. For this reason, the E-test score was chosen to represent the aptitude construct in the statistical models described in the next paragraph. Re-

⁹ As the Swedish definite left-edge article is structurally similar to the English definite article, while the Swedish definite nominal suffix is not, one can speculate that learners who had acquired a good command of the English definite article would be sensitive to the Swedish definite left-edge article, just like Nordanger's (2017) English-speaking learners of Norwegian were. However, since so few beginners began to produce the definite left-edge article during their first two terms of Swedish study, this hypothesis could not be tested.

call that, while the E test is intended to measure the ability to associate sounds and symbols, Bokander and Bylund (2020) speculated that it might actually reflect some analytical skill.

Finally, to evaluate the relative influence of L2 English and language-learning aptitude, two linear mixed-effects models were built, one predicting the emerging use of the L3-Swedish indefinite article and one predicting the emerging use of the L3-Swedish definite nominal suffix. In both models, (i) time (differences between data points 1, 2 and 3), (ii) use of the L2-English indefinite article, (iii) use of the L2-English definite article and (iv) the LLAMA E score were included as fixed effects. Differences between participants were included as a random effect. The results clearly showed that the beginners' use of both the Swedish indefinite article and the definite nominal suffix improved significantly over time. In addition, for the indefinite article, there was a significant positive effect of the L2-English indefinite article, but no effect of the L2-English definite article and no effect of aptitude. In other words, beginners who produced many indefinite articles in accurate contexts in the English version of the oral-production task (at data point 1) also tended to develop an ability to produce many indefinite articles in the Swedish version of the task (throughout data points 1–3), but this development was not affected either by the learners' use of the English definite article or by language-learning aptitude. By contrast, for the L3-Swedish definite nominal suffix, there was a significant positive effect of language-learning aptitude (i.e., the LLAMA E score), but no effect of L2-English articles (either the indefinite or the definite one). In other words, those beginners who scored high on the LLAMA E test when they had just started learning Swedish (at data point 1) tended to develop an ability to produce many definite nominal suffixes in accurate contexts over the course of two terms of study, but having a good command of L2-English articles did not appear to facilitate such a development.

To conclude, Study III provided convincing evidence of positive effects of both L2 knowledge and language-learning aptitude on the longitudinal development of L3 morphology. Clearly, having a good command of the English indefinite article was an advantage when it came to developing a good command of the Swedish indefinite article over the course of two terms. If this had simply been an effect of some students being more talented language learners, one would have expected to see positive correlations between both indefinite and definite morphemes. Instead, the L2–L3 effect was attested only for the indefinite article, which is structurally similar in the L2 and the L3. By contrast, language-learning aptitude appeared to be a better predictor for the development of the Swedish definite nominal suffix, a type of morpheme that

the learners had not met in any previously acquired languages. It has been suggested that aptitude may play an important role when learning grammar not present in one's L1 (Skehan 2015; Tolentino & Tokowicz 2014). The present finding indicates that it may be necessary to qualify that suggestion: aptitude may play a role when learning grammar not present in *any* previously acquired language. However, it is not entirely clear what the aptitude score used in the statistical models actually represents.

4.4 Study IV: Complexity and input frequency

Numerous studies have reported that L2-English learners whose L1 lacks articles generally omit articles more often in adjectivally modified NPs (Art + Adj + N) than in non-modified ones (Art + N) (e.g., Goad & White 2004; Jarvis 2002; Pongpaibroj 2007, 2008; Sharma 2005; Trenkic 2007). The same tendency has been noticed in Finnish-, Polish-, Russian- and Spanish-speaking learners of Swedish and Norwegian, although only for the indefinite article (Axelsson 1994; Nordanger 2017). This asymmetrical pattern of article omission has been accounted for in terms of complexity: since an adjectivally modified NP is more complex than a non-modified one, fewer attentional resources are left for producing the article (e.g., Trenkic 2007) or for inhibiting the selection of an article-less L1 structure (e.g., Austin et al. 2015). However, Austin et al. (2015) and Trenkic (2009) also considered the role of frequency-based regularities in the linguistic input: since adjectivally modified NPs are relatively infrequent in input, articles co-occur with nouns more often than they co-occur with adjectives. In Study IV, I explored those possibilities by examining patterns of omission of functional morphology in the advanced group of Russian-speaking learners of Swedish. In particular, I examined the effect of adjectival modification on suppliance of the indefinite article and the definite nominal suffix. This is interesting since an adjective intervenes between the noun and the indefinite article – *en (vit) katt* – but not between the noun and the definite nominal suffix – (*den vit-a) katt-en*.

Like in Studies I and III, only NPs in unambiguously indefinite or definite contexts referring to the wooden building-blocks were included in the analysis. Further, because a central claim in previous research is that NP complexity affects article omission, I excluded NPs with more than one adjective, such as *den lilla röda bilen* 'the little red car', and NPs with compound nouns, such as *skolflicka* 'school girl'. Further, I excluded NPs with demonstratives, such as *den här* 'this'. In other words, I looked at NPs with a simple noun, such as *katt* 'cat', and NPs with a simple noun modified by a single adjective, such as

vit katt ‘white cat’. The NPs were then divided into four categories – adjectivally modified and non-modified NPs with indefinite and definite reference – and for each category and participant, I calculated the proportions of NPs including the indefinite article (*en*), the definite nominal suffix (*-en*), the definite adjectival suffix (*-a*) and the definite left-edge article (*den*).

For practical reasons, the analyses focused on suppliance of morphology in obligatory contexts. In other words, overuse of morphemes (i.e., suppliance of the indefinite article in definite contexts and suppliance of the three definite morphemes in indefinite contexts) was not considered. Therefore, I began by establishing that the Russian-speaking learners were not more prone to overuse definite forms than to overuse indefinite ones, or vice versa – a result that actually contrasts with previous research reporting that L2 learners from article-less L1 backgrounds generally use and overuse the definite article more extensively than the indefinite one (e.g., Chaudron & Parker 1990; Goad & White 2004; Huebner 1985; Jaensch 2009; Master 1997; Nordanger 2017; Parrish 1987; Thomas 1989; Trenkic 2000, 2002; White 2008; Young 1996). This means that any differences between the learners’ use of the indefinite article and of the definite nominal suffix, respectively, could not be attributed to a general preference for indefinite or definite forms.

Since previous research suggests that learners of Swedish and Norwegian whose L1 is highly inflection are more sensitive to inflectional morphology, while learners whose L1 is more analytical are more sensitive to free-standing morphemes (e.g., Axelsson 1994; Eriksson & Wijk-Andersson 1988; Latomaa 1992; Nordanger 2017), I continued by comparing the learners’ suppliance of free-standing and bound morphemes. Specifically, the free-standing indefinite article was compared with the bound definite nominal suffix (both of which are required regardless of adjectival modification), and I compared the free-standing definite left-edge article with the bound definite adjectival suffix (both of which are required only in adjectivally modified NPs). These comparisons revealed that the Russian-speaking learners did not generally find bound morphemes easier to produce than free-standing ones, or vice versa. This result, which also contrasts with findings from previous research, means that differences between the learners’ use of the indefinite article and the definite nominal suffix could not be attributed to a general preference for bound morphemes.¹⁰

¹⁰ Note that the learners tended to supply the definite adjectival suffix slightly more consistently than the definite left-edge article. However, since the same tendency was seen among the native speakers, this does not necessarily have anything to do with whether the two morphemes are free-standing or bound.

Further, since the study focused on the role of frequency-based regularities in input, I also compared the learners' suppliance of high-frequency morphemes (those required in both modified and non-modified NPs: *en* and *-en*) and low-frequency morphemes (those required in modified NPs only: *-a* and *den*). This comparison clearly showed that the learners were more likely to supply the high-frequency morphemes than the low-frequency ones.¹¹

Finally, and most importantly, I compared the suppliance of the indefinite article, which is at the left edge of the NP, in non-modified NPs (e.g., *en katt*) with its suppliance in modified NPs (e.g., *en vit katt*). Likewise, I compared the suppliance of the definite nominal suffix in non-modified NPs (e.g., *katt-en*) with its suppliance in modified NPs (e.g., *den vit-a katt-en*). Recall that the definite adjectival suffix and the definite left-edge article almost never occurred without the definite nominal suffix. The results clearly showed that the suppliance of the indefinite article was negatively affected by adjectival modification while there was no such effect at all for the definite nominal suffix, exactly in line with the findings of Axelsson (1994) and Nordanger (2017).

To conclude, it is intriguing that definite forms were not overgeneralised to a greater extent than indefinite ones, and that bound morphemes were not supplied more consistently than free-standing ones. If anything, the fact that high-frequency morphemes were supplied more consistently than low-frequency ones and the fact that adjectival modification affected suppliance of the indefinite article at the left edge of the NP but not suppliance of the definite nominal suffix together suggest that frequency-based regularities in linguistic input should be considered a key factor in any account for the omission of L2 functional morphology. In the next chapter, I will conclude the thesis by discussing the main results from the four studies that I have summarised here.

¹¹ This was also shown in Study I, where the variables were computed somewhat differently. Recall again that the native speakers also sometimes dropped the definite left-edge article.

5. Concluding Discussion

Through a series of four studies, I have investigated definiteness and NP structure in two groups of Belarusian learners of Swedish as a foreign language: one group of beginners who were tested on three occasions during their first two terms of Swedish study, and one group of more advanced learners who were tested on one occasion. A communicative oral-production task elicited adjectivally modified and non-modified NPs in indefinite and definite contexts. Those data enabled me to track the developing use of the four target structures in (3), repeated in (48). Further, by testing the beginners' use of English articles at the onset of Swedish study, their explicit knowledge of article semantics, and their language-learning aptitude, I was also able to explore some factors potentially affecting that development.

- (48) a. en katt
INDEF cat
'a cat'
- b. en vit katt
INDEF white cat
'a white cat'
- c. katt-en
cat-DEF
'the cat'
- d. den vit-a katt-en
DEF white-DEF cat-DEF
'the white cat'

The main findings can be summarised as follows. At the onset of acquisition of Swedish, the learners appeared to have minimal knowledge of the *form* of definiteness (as indicated by their use of NPs in the oral-production task) but this

knowledge steadily developed towards the target norm. In particular, frequent forms emerged earlier and were used more consistently than infrequent forms. Interestingly, the production of the indefinite article (*en*), but not that of the definite nominal suffix (*-en*), was negatively affected by adjectival modification. The learners showed sensitivity to the *meaning* of definiteness very early in their development (although their performance deviated from that of the native speakers). This sensitivity (or their ability to choose between indefinite and definite forms in accordance with the pragmatic context) did not improve over time. Further, the two learning tasks – learning the form and learning the meaning of the form – did not appear to be directly related to each other. In particular, at an early stage of development, learners who were keen to produce the forms were also prone to overuse them (i.e., use them in inaccurate contexts). However, in the advanced group, knowledge of form correlated positively with knowledge of meaning. Regarding explicit knowledge of the meaning of definiteness, the learners were seldom aware that the choice between indefinite and definite forms depends on the state of mind of the hearer, but this lack of metalinguistic understanding did not appear to affect their use of articles in the communicative oral-production task: their ability to *use* articles did not correlate with their ability to *explain* this use. Finally, the learners' developing use of the Swedish indefinite article (*en*) was associated with their ability to accurately produce the English indefinite article (*a/an*), while their developing use of the definite nominal suffix (*-en*) was associated with language-learning aptitude.

In this chapter, I will discuss these results (Section 5.1) as well as some methodological shortcomings (Section 5.2). Further, I will consider potential implications for language pedagogy (Section 5.3) and suggest directions for further research (Section 5.4). Finally, I will conclude the thesis (Section 5.5).

5.1 Discussion of results

In this section, I will relate the present findings to previous research and to the Modular Cognition Framework (MCF). I will first focus on the development of the form of definiteness, also taking into account the role of complexity and input frequency (Section 5.1.1). Then I will focus on the development – or lack of development – of an association between this form and its meaning, also taking into account the role of explicit knowledge of article semantics (Section 5.1.2). Following this, I will look at the relationship between the two learning tasks (Section 5.1.3). Finally, I will consider the role of previous linguistic knowledge (Section 5.1.4) and that of language-learning aptitude (Section 5.1.5).

5.1.1 Learning the form of definiteness

This thesis confirms that the double-definiteness structure, with its three definite morphemes, poses a particular challenge to L2 learners of Swedish, as has previously been reported in a number of studies (e.g., Axelsson 1994; Eriksson & Wijk-Andersson 1988; Jin 2007; Nordanger 2017; Nyqvist 2013, 2018; Salameh et al. 1996; Sundman 1995). The difficulty involved in acquiring and producing this structure has often been attributed to its formal complexity and redundancy, although some have also pointed to the structure's relatively low frequency in input (e.g., Nyqvist 2013:180). The results presented here suggest that frequency-based regularities in the linguistic input may in fact play a more important role than linguistic complexity when it comes to L2 acquisition of the double-definiteness structure. This is in line with Ogawa (2015), who demonstrated that typical patterns of article omission in L2-English data reflect collocational noun–article patterns in corpus data.

In particular, two of the findings reported indicate that input frequency is a key factor. First, Study I showed that the indefinite article (*en*) and the definite nominal suffix (*-en*) emerged earlier in development and were used more consistently than the definite adjectival suffix (*-a*) and the definite left-edge article (*den*). In the case of the beginners, this pattern might be explained by the fact that the former two morphemes were introduced earlier in the classroom (around data point 1) than the two latter (around data point 2). However, the fact that the advanced learners, who had studied Swedish for at least two years, also supplied the former two morphemes more consistently than the latter two can hardly be explained in terms of order of teaching. Instead, the difference can probably be attributed to input frequency: since the definite adjectival suffix and the definite left-edge article are required only in adjectivally modified NPs, they are less frequent in input than the indefinite article and the definite nominal suffix, which are required regardless of modification. Hence, in MCF terms, the high-frequency morphemes rest at relatively high levels of activation and so are more available in processing than the two low-frequency morphemes. In other words, they are more deeply entrenched. Since most previous research into L2 acquisition of the Swedish NP structure has focused on different NP structures rather than on particular morphemes, this tendency has not been detected (or at least not explicitly pointed out) before.

The second reason to consider frequency-based regularities in input to be a key factor is that the advanced learners' supplience of the indefinite article (*en*) was negatively affected by adjectival modification while their supplience of the definite nominal suffix (*-en*) was not, as shown in Study IV. A similar tendency was noticed by Axelsson (1994) and Nordanger (2017). On a com-

plexity account, the opposite pattern would in fact be expected, as indefinite modified NPs are less complex than definite modified ones: indefinite modified NPs require *one* grammatical morpheme (i.e., *en*) while definite modified NPs require *three* (i.e., *den*, *-a* and *-en*). By contrast, on an input-frequency account, the pattern observed is expected (cf. N. Ellis 2002). Since non-modified NPs are more frequent than modified ones, the two morphemes that are used regardless of modification are more strongly associated with nouns than with adjectives. In other words, the [*en* N] and the [N-*en*] constructions are more deeply entrenched than the [*en* Adj N] and the [*den* Adj-*a* N-*en*] constructions. Note that the two high-frequency constructions differ from each other in that the [N-*en*] construction can easily merge with an adjective: [Adj] + [N-*en*]. By contrast, the [*en* N] construction cannot merge with an adjective, since the adjective intervenes between the noun and the article. If this explanation is on the right track, inflected nouns would often co-occur with uninflected adjectives in the learner data (e.g., **vit katt-en*) – and this is indeed a common feature of those data. Hence the learners appeared to be able to merge an uninflected adjective with an inflected noun before they had developed a more elaborate representation of the Swedish NP structure.

If input frequency is the key factor, the question arises as to why complexity does *not* make the double-definiteness structure difficult to acquire and produce. To answer this question, we first need to ask why complexity should make that structure, or any structure, difficult in the first place. An underlying assumption in complexity-based accounts appears to be that producing three grammatical morphemes is cognitively more demanding than producing only one. In other words, the three grammatical morphemes required in the double-definiteness structure are assumed to compete with each other for processing resources, which are limited (cf. Austin et al. 2015; Trenkic 2007, 2009). If this is so, one would expect learners to have a relatively good likelihood of producing the first definite morpheme (*den*) but then, because of an increasing scarcity of processing resources, they would be less likely to produce the second one (*-a*), let alone the last one (*-en*). However, this seems to be contradicted by the present data: in both learner groups, *den* implied *-a*, which implied *-en*. The reason for this might be – as pointed out by Danijela Trenkic (personal communication) – that the three definite morphemes do not actually compete with each other. From an MCF viewpoint, given that they are all integrated constituents of a single construction and that each of them encodes the same meaning, they can be assumed to be co-indexed with each other, meaning that they will co-activate each other. In other words, far from competing with each other, they *support* each other. On this account, when a learner manages to pro-

duce the first definite morpheme (*den*), this increases the likelihood that the second one (*-a*) will also be produced, which in turn increases the likelihood that the last one (*-en*) will be produced even further. Note that this prediction is compatible with the observation that *den* implied *-a*, which implied *-en*.¹

In this context, it should be mentioned that the data support the idea that the three definite morphemes were acquired as parts of a single construction and so were co-indexed with each other. In fact, while the learners often omitted functional morphology and quite often produced both indefinite and definite forms in inaccurate contexts, they hardly ever produced NPs where the indefinite article co-occurred with definite morphemes or vice versa. This suggests that, even if the learners had not developed a target-like representation of the Swedish NP structure, and even if they had not established a strong form–meaning association, they typically knew early on that the three definite morphemes belong together and cannot be used together with the indefinite article.

On a final note, I would like to mention that the definite adjectival suffix (*-a*) emerged earlier in development and tended to be used more consistently than the definite left-edge article (*den*). There are three possible explanations for this discrepancy. First, according to Kowal (2013), one of the textbooks used by the learners investigated (*Svenska utifrån* by Nyborg and Pettersson 1991) focuses more on adjectival agreement than on the definite left-edge article. Second, the fact that Russian adjectives obligatorily agree with their nouns (although not for definiteness) while left-edge elements such as demonstratives are used optionally in Russian might have boosted the development of adjectival agreement. Third, as was shown in Section 2.2.2, the definite left-edge article is not a particularly reliable definiteness marker: many definite adjectivally modified NPs do not include this morpheme. By contrast, the definite adjectival suffix is highly reliable: an adjective in a definite NP is practically always definitely marked. Indeed, the data collected from the L1-Swedish reference group confirm that the definite left-edge article is not obligatory in the same sense as the definite adjectival suffix is: the native speakers sometimes dropped the left-edge article but never the adjectival suffix. This brings the discussion back to the role of frequency-based regularities in the target language itself, which appear to be

¹ This is not to say that linear order somehow determines order of implication. If the highest-frequency morpheme had not also been the last one, the order of implication would presumably have differed from the linear order. Note, also, that explanations based on complexity and input frequency are not mutually exclusive. On the contrary, the two phenomena are generally negatively correlated, to the effect that complex structures tend to be infrequent and vice versa (e.g., Goldschneider & DeKeyser 2001).

a key factor in explaining the learners' development of the morphosyntactic structure that Swedish uses to express definiteness. Note that the learners' tallying of probabilistic patterns in input was probably an unconscious process to a high extent (cf. N. Ellis 2002): for instance, the learners were hardly aware that they omitted the indefinite articles more in adjectivally modified NPs than in non-modified ones. The role of metalinguistic awareness is discussed further in the next section.

5.1.2 Learning the meaning of the form

If we now turn to the learners' establishment of an association between the form of definiteness and the meaning of this form, it should first be acknowledged that the oral-production task elicited a very limited number of NP types. Hence the present thesis does not contribute much to the discussion about what contexts trigger the use of indefinite and definite forms in L2 learners from L1 backgrounds without articles (cf. Huebner 1985; Ionin et al. 2004; Jarvis 2002; Nordanger 2017; Robertson 2000; Sharma 2005; Trenkic 2002; Young 1996).

Throughout the project, knowledge of meaning was operationalised simply as the general ability to produce indefinite and definite forms in accurate contexts. As reported in Study I, this measure revealed that the learners generally chose between indefinite and definite forms far more accurately than chance would have predicted – *meaning* did not appear to cause as much trouble as *form* did – but they nevertheless deviated significantly from the reference groups. These results are in line with findings from previous research on L2 acquisition of definiteness in Swedish and Norwegian (Axelsson 1994; Kowal 2011; Nordanger 2017; Nyqvist 2013). However, the learners' general ability to choose accurately between indefinite and definite forms did not improve over time: there were no statistically significant differences between the three data points in the beginner group or between the beginner group and the advanced group, and there was no correlation between accuracy and time of exposure in the advanced group. This lack of development differs from what has been reported elsewhere. For example, the Polish-, Russian- and Finnish-speaking learners of Swedish and Norwegian in Kołaczek (2018), Kowal (2011), Nordanger (2017) and Nyqvist (2013), as well as the Japanese-speaking learners of German in Jaensch (2009) and the Serbian-speaking learners of English in Trenkic (2000, 2002), all made fewer meaning-related errors with time and increasing proficiency. To this should be added that Study II revealed that the learners generally lacked an explicit understanding of the fact that the choice between indefinite and definite forms requires the speaker

to take the hearer's perspective. However, it also appeared to be the case that the learners did not rely on explicit knowledge when solving the communicative oral-production task. Together, these results raise three intriguing questions. First, what enabled the learners to choose accurately between indefinite and definite forms in about 90 per cent of the cases even at the very onset of their acquisition of Swedish? Second, how could it be that they overused indefinite and definite forms more often than the native speakers did, despite the knowledge that they apparently possessed? And third, how could it be that such overuse did not decrease over time? In the following, I will consider some possible answers to these questions.

When it comes to why the learners generally chose accurately between indefinite and definite forms, there are several plausible reasons. To begin with, as elaborated upon in Section 5.1.4 below, the learners were probably aided, consciously or unconsciously, by their knowledge of the English article system. Second, the learners' ability to choose accurately between indefinite and definite forms may also have been facilitated by their explicit knowledge of article semantics to some extent. Although this knowledge was not very linguistically elaborate, the fact that they knew that indefinite forms are used to introduce "new" referents while definite forms are used to refer to "specific" referents and to refer "back" may have helped them pick the right form on numerous occasions. Most importantly, however, the reason why the learners were able to choose accurately between indefinite and definite forms from the very onset of Swedish study might be that the meaning of definiteness was not new to them: it is part of Conceptual Structures and plays a role in NP-reference resolution independently of whether a particular language has articles (cf. Brun 2001; Cho & Slabakova 2014; Lyons 1999; Slabakova 2008; Trenkic 2004). Indeed, some studies discussed in Section 2.3.2 showed that people, during the course of a single experiment, are able to establish associations between novel forms and semantic concepts without any awareness of what they are actually learning, but this was possible only for semantic concepts typically encoded by human grammars (Chen et al. 2011; Leung & Williams 2012, 2014; Williams 2005). Given these facts, it is not surprising that the Russian-speaking learners of Swedish were able to rapidly establish an association between the novel forms and their abstract meaning, although their metalinguistic knowledge was not very elaborate.

The second question is why the learners nevertheless deviated from the native speakers when it came to choosing between indefinite and definite forms. To some extent, this is probably an effect of L1 influence: numerous studies have shown that learners without articles in their L1 make more meaning-

related article errors than learners with articles in their L1 (e.g., Eriksson & Wijk-Andersson 1988; Jarvis 2002; Nordanger 2017; Snape 2006). However, as just mentioned, the fact that the learners generally chose accurately between indefinite and definite forms suggests that they actually knew the meaning of definiteness in some sense. Hence I will suggest that their deviance from the reference groups with respect to meaning cannot be explained solely in terms of lack of knowledge of this meaning. It should be recalled that the meaning was not new to the learners, only its morphosyntactic encoding was (cf. Slabakova 2008). Recall also that, in MCF, only the morphemes, or their visual or auditory representations, are available to consciousness – their meaning is not. And indeed, while the learners did not appear to be aware of the meaning of definiteness, they were clearly aware that the morphemes exist and that they are used obligatorily; this was shown by the fact that the learners practically never chose the bare forms in the multiple-choice test, as reported in Study II. It is thus plausible that their main focus was on not omitting definiteness marking when performing the oral-production task. Together with their rather shallow metalinguistic understanding of the meaning of definiteness, this may explain why they sometimes used definite forms in indefinite contexts and vice versa: their explicit knowledge that *forms* must not be omitted impeded their intuition about the *meaning* of those forms.²

The third question, regarding the lack of development with respect to meaning, is particularly interesting since this observation deviates from what has been reported in other studies (e.g., Jaensch 2009; Kołaczek 2018; Kowal 2011; Nordanger 2017; Nyqvist 2013; Trenkic 2000, 2002). It is of course tempting to speculate that this lack of development has to do with the learners' general lack of explicit understanding of what this meaning really is. If the relatively few meaning-related errors actually made can be attributed to a monitor function, as suggested above, it also makes sense to suggest that the lack of development with respect to the meaning of definiteness may be connected to the learners' shallow understanding of this meaning.

In short, the suggestions put forward here include, on the one hand, that the learners' generally good ability to choose accurately between indefinite and definite forms can be attributed to the universality of the concept of DEFINITENESS, and, on the other hand, that their occasional misuses of indefinite

² In addition, my experience was that the learners' self-corrections almost exclusively pertained to form. Only rarely they produced an indefinite form and then changed their mind and produced a definite one instead, or vice versa. This suggests that they focused more on form than on meaning.

forms in definite contexts and vice versa, as well as the lack of development in this respect, can be attributed to their (lack of) metalinguistic knowledge. At this point, the reader may well ask why I explain the errors in terms of metalinguistic knowledge when Study II found no significant correlation between explicit knowledge of article semantics and actual article use. The answer is that absence of evidence is not evidence of absence. Recall that the learners chose accurately between indefinite and definite forms in about 90 per cent of the cases *despite* their lack of (correct) explicit knowledge of article semantics, meaning that the lion's share of their article use appears to depend on intuition. In other words, the role of explicit knowledge was small, and Study II probably lacked the statistical power to pinpoint its effect. Moreover, while Study II focused on explicit knowledge of *meaning*, the suggestion put forward here is that the learners might have focused more on their explicit knowledge of *form* (i.e., that articles are obligatory): even if they did have a linguistically valid theory about the meaning of definiteness, they may still have failed to employ this knowledge in the communicative situation simply because they focused more on not omitting the morphemes. This idea resonates well with the fact that the textbooks used by the learners in the present study (i.e., Levy Scherrer & Lindemalm 2007 and Nyborg & Pettersson 1991) focus more on the form of definiteness than on its meaning (Kołaczek 2018).

5.1.3 The relationship between the two learning tasks

One major aim of the present research project was to investigate whether the two learning tasks – acquiring the morphosyntactic structure through which the meaning of definiteness is expressed and establishing an association between this structure and that meaning – are somehow related, such that, for example, learners who are relatively sensitive to the form also pay more attention to the meaning that the form expresses, and vice versa. This question was addressed in Study I. The results are intriguing, albeit not very easily interpreted.

There is a tendency in the data suggesting that those learners who used forms relatively early in their development were also relatively sensitive to the meaning of those forms. At data point 1, a few weeks into their first term of Swedish study, three beginners produced a total of eight definite nominal suffixes (*-en*). These suffixes all appeared in definite contexts and without the indefinite article, suggesting that those three learners actually knew something about the form and meaning of definiteness at this early stage. Further, at data point 2, one beginner showed some knowledge of the complete double-definiteness structure (e.g., *den vit-a katt-en*); at data point 3, one more did so. These two

learners also used the definite forms (i.e., *den*, *-a* and *-en*) almost exclusively in definite contexts. Taken together, this may suggest that there is in fact an association between the two learning tasks: learners who used definite forms early were also sensitive to the meaning of those forms. However, these data are too limited for any conclusions to be drawn from them. Moreover, recall that almost *all* learners, including those who produced the forms only later in their development, proved to be sensitive to the meaning of definiteness to a large extent.

What the data clearly suggest is that knowledge of form and knowledge of meaning did *not* develop in parallel. While the definite forms developed slowly, almost all beginners used the indefinite article (*en*) even at data point 1. At this early point in development there was a significant negative form–meaning correlation, meaning that those learners who produced morphemes rather often also overgeneralised them rather often. However, recall that the indefinite article was provided to the beginners in the instruction sheet, meaning that the early use of this article and the resultant initial negative form–meaning correlation can be interpreted as task effects: some learners might have noticed the indefinite article in the word list and used it extensively without considering its meaning.

However, at data points 2 and 3, when almost all beginners used the definite nominal suffix (*-en*) to some extent, there was a similar negative form–meaning correlation for this morpheme (significant at data point 3): those who produced it rather often also overgeneralised it rather often. (In parallel, the negative form–meaning correlation for the indefinite article grew weaker.) Further, at data point 3, when eight beginners had started to use the definite adjectival suffix (*-a*) productively, there was a negative form–meaning correlation for this morpheme as well (although not statistically significant). Unlike the development of the indefinite article, which may have been driven by the appearance of this article in the instruction sheet, the patterns discussed here cannot be dismissed as task effects.

By contrast, among the advanced learners, who had studied Swedish for at least two years, the form–meaning correlations were generally positive: those who used the morphemes rather often were also rather good at choosing between indefinite and definite forms in accordance with the pragmatic context. Hence it appears that, during a short period of time early in development, those learners who are the most keen to use indefinite and definite forms are the same ones who are the most careless about the meaning of those forms. This would resonate with the suggestion put forward in the previous section that the learners' focus on forms resulted in meaning-related errors. It might

be speculated that the initial negative form–meaning correlation reflects individual differences among the learners: some of them may simply have been more susceptible to form, others more susceptible to meaning. Nevertheless, it can probably be claimed without over-interpreting the present results that the development of *form* and that of *meaning* do not always go hand in hand, at least not in all learners.

5.1.4 The role of cross-linguistic influence

As mentioned above, previous research has shown that L2 learners whose L1 does not have articles generally omit and substitute articles more than learners whose L1 has them (e.g., Eriksson & Wijk-Andersson 1988; Jarvis 2002; Jin 2007; Nordanger 2017; Pongpaioj 2007, 2008; Snape 2006). There are also indications that learners of Swedish with a highly inflectional L1, such as Russian, are more likely to supply inflectional morphology than free-standing morphemes (Axelsson 1994; Eriksson & Wijk-Andersson 1988; Latomaa 1992; Nordanger 2017). The present thesis does not contribute much to our understanding of the role of L1 in L2 acquisition of definiteness and NP structure, since different L1 groups were not compared. Instead, Study III revealed an influence exerted by the beginners' use of L2-English articles on their developing use of L3-Swedish definiteness marking. In particular, the learners' ability to accurately produce the English indefinite article (*a/an*) at data point 1 correlated significantly with their ability to accurately produce the Swedish indefinite article (*en*) at data points 2 and 3.

Previous research has suggested that L2 knowledge plays a role in the acquisition of L3 articles (Aribaş & Cele 2021; Heikkilä 2008; Jaensch 2009; Lahtinen 2010; Leung 2005). However, as discussed in Section 2.3.3, this research suffers from a number of limitations, leaving its conclusions quite speculative. The results presented here are more robust: if the L2–L3 correlation were simply an effect of some learners being more talented and motivated language learners in the first place, correlations would have been expected to appear across the board. Instead, the L2–L3 correlations pertained only to the indefinite article, which is structurally similar in English and Swedish. By contrast, the learners' ability to accurately produce the English definite article (*the*) did not appear to influence their developing use of the Swedish definite nominal suffix (*-en*), which is structurally different. This clearly suggests that the learners drew upon their knowledge of L2 English when learning L3 Swedish.

It should be stressed that the fact that English influenced the acquisition of Swedish does not entail that there was no influence from the learners' article-less native languages. For example, both Jin et al. (2009b) and Nordanger

(2017) found that learners of Norwegian with articles in their L1 outperformed learners without articles in their L1, despite the fact that the latter ones had actually acquired English as an L2 before learning Norwegian. This made the authors conclude that L2 knowledge did not appear to exert much influence on L3 Norwegian. However, recall that these studies did not test the learners' knowledge of L2 English. From the viewpoint of MCF, all languages in a multilingual mind are simultaneously active and so may all affect each other (cf. Westergaard 2019). There is ample evidence in the SLA literature that they actually do. For example, Angelovska (2017) showed that Russian-speaking learners of L3 English who had previously learned L2 German occasionally applied the German verb-second word order when speaking English. When this happened, it was apparently phonologically triggered: a German-sounding sentence-initial element appeared to co-activate a German syntactic structure. Hence it cannot be excluded that the Swedish-learners investigated in the present thesis were affected by both L1 Russian and L2 English (as well as by any other languages they knew). Importantly, however, the present findings show that there was in fact an L2–L3 influence with regard to articles, something that has not been demonstrated this clearly before.

Further, that significant L2–L3 correlations were obtained only for the indefinite article does not exclude the possibility that knowledge of the L2-English definite article may have influenced the acquisition of the L3-Swedish definite nominal suffix as well, particularly later on in development. In fact, Nordanger (2017) found that English-speaking learners of Norwegian had an advantage over Russian-speaking ones when it came to the definite nominal suffix, but the effect was delayed: at the first data point, there was no advantage. Apparently, the English-speaking learners were not *immediately* able to map the L1 article onto the L2 suffix. This clearly leaves open the possibility that the Russian-speaking learners of Swedish investigated in this thesis may also draw upon their knowledge of the English definite article at a later stage of their development, although no evidence of this was seen during their first two terms of Swedish study. Further, it is conceivable that such a transfer would require some analysis and restructuring. Incidentally, this may also explain why language-learning aptitude was associated with the emerging use of the definite nominal suffix, as will be discussed in the next section.

5.1.5 The role of language-learning aptitude

At the onset of acquisition of Swedish, the beginners' language-learning aptitude was tested using the LLAMA test battery, which comprises four tests (Meara 2005). As shown in Study III, the correlations between the learners'

aptitude scores and their ability to correctly use the indefinite article (*en*) and the definite nominal suffix (*-en*) throughout their first two terms of Swedish study were generally positive but rarely statistically significant. In fact, the only significant correlation found was the one between the E test, targeting the test-takers' ability to establish sound–symbol associations, and their ability to correctly use the definite nominal suffix at data point 3. This suggests that aptitude *may* play a role in L2 (or L3) acquisition of definiteness and NP structure. This is something that, to my knowledge, has been shown only once before, namely by Sheen (2007). Further, the fact that aptitude scores were generally more strongly associated with the learners' ability to accurately produce the definite nominal suffix than with their ability to accurately produce the indefinite article resonates well with Skehan's (2015) observation that aptitude appears to play an important role especially when it comes to L2 structures not present in the L1 (cf. Tolentino & Tokowicz 2014).³ The present study goes one step further by suggesting that aptitude may be more crucial for learning structures not present in *any* previously learned languages.

As pointed out by many scholars, much aptitude research has focused on explicit language learning (cf. Granena 2013b, 2016; Li 2019; Wen et al. 2017). For example, Sheen (2007) tested the learners' *analytical* skill and then measured learning outcome using tasks that probably tapped into their *explicit* knowledge. By contrast, the aptitude-test battery used in the present research project includes tests targeting *different* types of language-learning aptitude, and learning outcome was measured using a communicative oral-production task assumed to tap primarily into the learners' *implicit* knowledge. Thus, importantly, the present findings indicate that language-learning aptitude may play a role not only in off-line tasks but also in tasks simulating authentic language use. However, the question then arises as to what kind of ability the E test, the only test that correlated statistically significantly with the learners' use of Swedish definiteness marking, actually measures.

As mentioned, the E test is intended to target the test-takers' ability to associate sounds with symbols. There is obviously no reason why this particular ability should be especially crucial for acquiring the Swedish definite nominal suffix. However, as pointed out by Bokander and Bylund (2020), it might be that the design of the E test makes it possible for test-takers to obtain high scores without actually establishing any sound–symbol associations, namely by

³ Note, however, that this result does not resonate with Bokander's (2021) finding that aptitude played a more important role in L2 learners of Swedish with a typologically similar L1 than in those learners with a typologically distant L1.

instead approaching the task in a more analytical fashion. If this is so, it may be speculated that analytically skilled learners had an advantage when it came to producing the definite nominal suffix, which has no direct counterpart in either L1 Russian or L2 English.

The correlation table in Study III reveals some patterns that might be taken to support the idea that analytical learners had an advantage when it came to the definite nominal suffix. The learners' ability to encode phonological sequences, as measured using the D test, was associated to some extent with their emerging use of *both* the indefinite article and the definite nominal suffix (although these correlations were not statistically significant). Recall that the D test is the one LLAMA test often assumed to depend on implicit learning (cf. Bokander & Bylund 2020; Granena 2013a; Rogers et al. 2016, 2017). By contrast, the learners' scores on the E test, as well as those on the F test, which targets inductive grammar learning, appear to be more strongly associated with their use of the definite nominal suffix than with that of the indefinite article (but significantly so only for the E test). These patterns are not crystal clear, but it certainly seems that an ability to intuitively recognise auditory sequences helped the learners to produce all types of grammatical structures while a more analytical skill was an advantage when it came to qualitatively new structures (cf. Tolentino & Tokowicz 2014:304).

The findings discussed here resonate well with the observations and suggestions considered above. For example, the initial overuse of the indefinite article seen in some learners, leading to negative form–meaning correlations for this morpheme, decreased at data points 2 and 3, while at the same time the influence of English and the influence of the ability to recognise sound sequences (the D test) increased. Apparently, many beginners who had already noticed the indefinite article at data point 1 (possibly because it was provided to them in the instruction sheet) did not map it onto the English indefinite article at that time, but at data points 2 and 3 they tended to use it like they used the English indefinite article – they might even have employed their English phonetic and syntactic structures. Further, regarding the definite nominal suffix, the idea that analytically skilled learners had an advantage when it came to producing it resonates well with the idea that the negative form–meaning correlations for this morpheme seen at data points 2 and 3 were due to the fact that some learners, presumably the analytically skilled ones, focused too much on not forgetting the forms.

The discussion so far is admittedly quite speculative. Indeed, the results are intriguing, and there are not readily available explanations for all of them – it may be that more questions have in fact arisen than have been answered.

Nevertheless, I would like to conclude this section by pointing out that MCF, the theoretical framework I lean towards, has encouraged me to keep several disparate possibilities in mind while trying to make sense of the data. It should be clear by now that a distinction must be made between form and meaning, as well as between explicit and implicit knowledge, in the interpretation of the patterns observed. At the same time, it should also be clear that the different findings cannot be accounted for in isolation. For this reason, it is necessary to conceive of language learning and use as the result of dynamic interactions between several distinct cognitive components.

5.2 Methodological discussion

It should be acknowledged that the present research project suffers from some methodological limitations that may restrict opportunities to draw certain conclusions. The most important limitations are (i) that the indefinite article appeared in the instruction sheet provided to the beginners when they performed the oral-production task; (ii) that the oral-production task elicited a limited number of NP types; (iii) that knowledge of meaning was measured through the production of forms; (iv) that the distinction between explicit and implicit knowledge was operationalised rather bluntly; and (v) that the small number of participants made it impossible to test interactions between multiple factors that may influence L2 development. Here I will discuss these limitations and argue that the results obtained are still informative.

As mentioned repeatedly, when performing the oral-production task that elicited the NPs analysed throughout the four studies, the beginners had access to a word list including the nouns, adjectives, verbs and prepositions they would need to solve the task. This was to make them feel confident that they would actually be able to solve the task – recall that they had studied Swedish only for a few weeks the first time I tested them. In this word list, nouns appeared with the indefinite article (*en*). This is commonplace for L2-Swedish word lists, as the article provides information about the gender of the noun. With the wisdom of hindsight, it is evident that the data collected would have been more valuable if the articles had not been given in that list. In particular, the extensive use and overuse of the indefinite article at data point 1 can probably be seen to reflect a task effect to some extent.

Even so, I would like to point to three circumstances suggesting that the results for the indefinite article may nevertheless be informative. First, just like the three definite morphemes (*den*, *-a* and *-en*), the indefinite article (*en*) was used in accurate contexts far more often than chance would have predicted,

even at data point 1. Obviously, its appearance in the word list cannot explain the learners' sensitivity to its meaning. Second, the negative form–meaning correlation seen for the definite nominal suffix (*-en*) when this morpheme emerged suggests that the initial overuse of the indefinite article does not necessarily have to be attributed to its appearance in the word list. Third, recall that the word list was not provided to the advanced learners and that, in this group, years of exposure correlated positively with suppliance of the three definite morphemes but negatively (although not statistically significantly) with suppliance of the indefinite article. In other words, the data from the advanced learners also suggest that the indefinite article was used and overused more by learners at relatively early stages of development. Together, these observations leave open the possibility that the results for the indefinite article cannot be dismissed simply as task effects.

The appearance of the indefinite article in the instruction sheet also needs to be discussed in relation to Study III, which investigated the influence of L2 English on the development of L3 Swedish. The findings made include that the beginners' use of the English indefinite article (*a/an*) at data point 1 predicted their developing use of the Swedish indefinite article (*en*) throughout their first seven months of Swedish study. By contrast, their use of the English definite article (*the*) did not predict their developing use of the Swedish definite nominal suffix (*-en*). This difference was explained in terms of structural similarities and dissimilarities between English and Swedish. The question arises as to whether the difference could also be explained by the fact that the Swedish indefinite article was provided in the instruction sheet while the definite nominal suffix was not. However, I find it hard to believe that the appearance of the Swedish indefinite article in the word list made the beginners use it *like they used the English indefinite article* (which was not provided in the word list in the English version of the test). On the contrary, if the appearance of the Swedish indefinite article in the word list affected the beginners' use of it, I find it more likely that their use of that article would *not* correlate with their use of the English indefinite article. Hence, without neglecting this major methodological shortcoming, I hold that the present data offer some valuable insights with respect to the indefinite article as well.⁴

The second methodological limitation also relates to the indefinite article. Study I and Study IV showed that the advanced learners of Swedish (who did not have access to the notorious word list) were equally good at producing

⁴ In this context, I would also like to mention that the task was actually very easy for the learners, even at data point 1. In my experience, they rarely looked at the word list.

the indefinite article (*en*) and the definite nominal suffix (*-en*): there were no differences in terms of suppliance in obligatory contexts or in terms of overuse. Previous research suggests that L2 learners who do not have articles in their L1 generally use and overuse definite articles far more often than indefinite ones (e.g., Goad & White 2004; Huebner 1985; Trenkic 2000, 2002). Further, previous research also suggests that learners whose L1 is highly inflectional find bound morphemes, such as the definite nominal suffix (*-en*), easier to produce than free-standing morphemes, such as the indefinite article (*en*) (e.g., Axelsson 1994; Latomaa 1992; Nordanger 2017). Taken together, these observations may give rise to a suspicion that the oral-production task somehow favoured the indefinite article and disfavoured definite morphemes.

A closer look at the types of indefinite and definite reference elicited strengthens this suspicion. NPs with indefinite reference in the data referred to one member of a set of identical wooden building-blocks. Both L1 and L2 participants talked about these blocks in one of two different ways. Either they looked at the blocks lying on the table and told me, for instance, “Put a chair in the park”. In this case, the reference was in some sense non-specific, as the participants referred to *any* one of the chairs. Or, more frequently, they looked at the map and introduced a specific referent using the existential construction: “There is a chair in the park”. NPs with definite reference in the data referred to blocks that were present in the immediate context and identifiable owing to their position on the board. Previous research suggests that L2 learners whose L1 does not have articles are relatively good at supplying indefinite articles in NPs with non-specific reference (e.g., Huebner 1985; Ionin 2003; Ionin et al. 2004, 2009; Nordanger 2017) and in NPs used in the existential construction (e.g., Trenkic 2000; White et al. 2011). By contrast, learners are, typically, more likely to drop definite articles in pragmatically redundant contexts, such as when the referent is activated, salient and present in the immediate context (e.g., Jarvis 2002; Robertson 2000; Trenkic 2000; Trenkic & Pongpairaj 2013; Young 1996; Žegarac 2004). This seems to explain why the learners were unexpectedly keen to produce the indefinite article and unexpectedly prone to omit the definite morphemes; a task eliciting NPs with a wider range of reference types could possibly have yielded a different result. At the same time, the use of a wider range of NP types would hardly have affected the fact that the three definite morphemes emerged in a certain order, the fact that knowledge of form and knowledge of meaning developed differently and were negatively correlated with each other, the fact that explicit knowledge was not associated with the ability to produce articles accurately, or the fact that production of the indefinite article was affected by L2 English and by adjectival modification

while the production of the definite nominal suffix was affected by aptitude. Hence the present project has generated several interesting and valid results despite the shortcoming discussed here.

However, the limited number of NP types elicited does entail that the data cannot reveal much about *why* indefinite and definite forms were sometimes omitted or overgeneralised. On the downside, this means that the present thesis does not contribute to the vivid research about the role of factors such as specificity, topic continuity, salience, concreteness and pragmatic redundancy in L2-article production (e.g., Huebner 1985; Ionin et al. 2004; Jarvis 2002; Kołaczek 2018; Nordanger 2017; Robertson 2000; Sharma 2005; Thomas 1989; Trenkic 2002; Trenkic & Pongpaibroj 2013; Young 1996). On the upside, the fact that the task elicited exactly the same set of NPs from each participant at each data point makes internal validity high. As mentioned, most previous research on the development of definiteness and NP structure in L2 Swedish has used free-production data (e.g., Axelsson 1994; Eriksson & Wijk-Andersson 1988; Kołaczek 2018; Kowal 2011; Lahtinen 1993a,b; Nyqvist 2013, 2015; Wijk-Andersson 1993, 1995). Such data are likely to include a range of NP types, which makes it difficult to carry out comparisons between and within individual learners. Further, some researchers also used grammatical tests that offer high internal validity but may not necessarily reveal much about the learners' actual language use (e.g., Kołaczek 2018; Nyqvist 2018). By designing a communicative oral-production task that elicited a pre-defined set of NPs, that did not take very long and that could actually be performed by learners who had studied Swedish for only a few weeks, I tried to do something in between these two approaches. Again, I believe that this has enabled me to contribute to the research on definiteness and NP structure in L2 Swedish, despite some methodological flaws.

Then there is the problem that the learners' knowledge of the meaning of definiteness was measured through their production of forms. Specifically, the participants' knowledge of meaning was measured by calculating the proportion of indefinite and definite forms occurring in accurate contexts. Indeed, this is rather a blunt tool. Most importantly, for those learners who *never* produced indefinite and definite morphology, meaning variables could not be calculated, which opens up for speculation to the effect that learners refrained from using the morphology until they had figured out its meaning. However, I do not think that was the case: in Study II, we saw that the learners *supplied* indefinite and definite morphology more consistently in the multiple-choice test than in the oral-production task, but their ability to *choose* between indefinite and definite forms did not differ between the two measures. This suggests that

learners dropped articles in the oral-production task not because they did not know their meaning, but precisely because they had not developed the ability to produce the forms.

Turning to the discussion about explicit and implicit knowledge of the meaning of definiteness, the learners' production of NPs in the communicative oral-production task was assumed primarily to reflect their implicit knowledge while their written metalinguistic explanations in the multiple-choice test were assumed to reflect their explicit knowledge. As pointed out by many, both of these assumptions can be questioned (cf. DeKeyser 2003; Hama & Leow 2010; Hulstijn 2005; Leow & Hama 2013; Paradis 2009; Schmidt 1990; Spada 2015; Truscott 2015a). First, it is common to operationalise explicit knowledge as knowledge that can be verbally reported (e.g., Hulstijn 2005:130; Spada 2015:75–76), but, as pointed out by Schmidt (1990:132), “[t]here are also conscious experiences that are inherently difficult to describe”. Second, it is also common to operationalise implicit knowledge as knowledge that can be inferred from behaviour in communicative, oral tasks, but, according to Spada (2015:77), “time pressure and a focus on meaning do not guarantee that learners will access their implicit knowledge”. Summing up this conundrum, DeKeyser (2003:320) noted that

no perfect tests or procedures exist for distinguishing the results of implicit and explicit learning. At this point researchers have to content themselves with eliciting knowledge under conditions that are more or less conducive to the retrieval of implicit and explicit knowledge, and then infer to what extent the learning itself may have been implicit or explicit.

While these points should not be neglected, it should be emphasised that no correlation could be seen between the learners' ability to verbalise that the choice between indefinite and definite forms depends on the state of the mind of the hearer and their ability to choose accurately between indefinite and definite forms in the communicative oral-production task. This lack of association clearly suggests that those two variables do in fact represent different types of knowledge. Even so, a cautious attitude is warranted when it comes to drawing conclusions from this finding: the lack of a significant correlation between implicit and explicit knowledge, as measured using the two tasks, by no means excludes the possibility that explicit knowledge may influence the growth of implicit knowledge.

Finally, it should be mentioned that the small number of participants made it impossible to account for all possible variables – suppliance and over-suppliance of the four morphemes at each data point, explicit and implicit knowledge, adjectival modification, L2 English, the four aptitude tests, etc. – in a single model. Instead, I have written four articles, each focusing on differ-

ent aspects of the data collected. Unfortunately, this approach, involving observations from different viewpoints, makes it difficult to appreciate the relative weight of the different results. Even so, notwithstanding this shortcoming and the other flaws discussed in this section, I believe that this explorative research project has provided some substantial insights with respect to definiteness in Russian-speaking learners of Swedish as a foreign language. In the next section, I will consider some possible implications for language pedagogy.

5.3 Notes on applicability

As was underscored in the Introduction, the research project focused on L2 acquisition, not on L2 instruction. L2 acquisition is an interesting object of investigation in its own right, and language pedagogy should be cautious in drawing didactic conclusions from pure SLA studies (e.g., R. Ellis 1997; Sharwood Smith 1994; Spada 2015). Indeed, Spada (2015) warned that theoretical insights from the field of SLA may be *misapplied* in L2 classrooms. The following quotation from Sharwood Smith (1994:5–6) illustrates what such misapplications might look like.

Suppose someone found that, under certain conditions and with respect to certain limited grammatical constructions, drawing the learners' attention to the rules of grammar had absolutely no effect at all, no matter what technique was used. It would be only too easy to jump from this finding to a much more general claim that 'giving learners rules is a waste of time'. [...] Research findings can be too rapidly applied to practical areas.

With this caveat, there is no need to draw a sharp dividing line between SLA and language pedagogy. To begin with, language pedagogy should consider how languages are learned when reflecting on how languages should be taught. Indeed, the theoretical development seen in SLA in the past fifty years has had a positive impact on L2 teaching practices, directly or indirectly (cf. Flyman Mattsson 2017:40). Therefore, it is worthwhile to consider possible implications of the present research project for L2 teaching.

The present project has shown that learning the form of definiteness and establishing an association between this form and its meaning constitute two separate learning tasks to some extent. This entails that teachers should not take it for granted that a learner who knows a grammatical form (in the sense of being able to produce it) also knows its meaning, and vice versa. However, it is important to stress that we should not jump from this to the conclusion that form and meaning should be practised separately. Quite the contrary: forms should be practised systematically in communicative (or semi-communicative)

situations (cf. Whong 2013). This is important, because an abstract concept such as DEFINITENESS can become associated with its form only in communicative situations, since, in MCF terms, an NP without a context will not activate the universal meaning of definiteness, and so this meaning will not be co-indexed with the morphemes included in the NP. Note that I used the word *practised* above. My reason for doing so is that the importance of using the forms in communicative situations does not mean that teachers should simply make learners *use* the new language. Instead, as discussed in Study II, I believe in what Krashen (1982:104) called *communicative drills*: “activities in which students can really communicate or in which communication is simulated”. Such drills may help learners to establish associations between mental representations and increase their resting-activation level.

Further, it will not come as a surprise to any teacher that it is necessary to be aware that the linguistic knowledge already possessed by learners and their skills when it comes to different aspects of language learning may affect how easily they acquire different components of the target language. Although there is little (or nothing) teachers can do about those factors, all teachers have a duty to do their level best to meet their pupils and students where they are. As pointed out by Wen et al. (2017:6), “[e]ven if aptitude is not particularly malleable, it should still be possible to modify instruction to achieve greater learning by responding to different aptitude levels, as well as strengths and weaknesses”. The present thesis highlights the need to recognise individual differences, which is a crucial prerequisite if teaching is to be adapted to different needs and preferences.

Finally, the distinction between explicit and implicit learning and knowledge is undoubtedly relevant to language pedagogy. In fact, Hulstijn (2005:130) wrote that “[c]urriculum planners, material designers, teachers, and learners all have a vested interest in knowing in which linguistic domains L2 learning might best benefit from implicit or explicit learning modes”. The present thesis, like others before it, shows that learners’ explicit knowledge of article semantics is often faulty (cf. Butler 2002; Kołaczek 2018; Nyqvist 2013; Yang & Ionin 2009). This is probably related to the fact that L2 textbooks generally neglect to explain correctly and thoroughly the meaning of definiteness; this has been noted both for L2-English textbooks (e.g., Ionin 2003:239–240; Pica 1983b; Trenkic 2000:59–65) and for L2-Swedish ones (e.g., Kołaczek 2018:138–159; Nyqvist 2013:64–69). As mentioned above, Kołaczek (2018:138–159) scrutinised the textbooks actually used by the learners investigated in the present research project – *Rivstart* (Levy Scherrer & Lindemalm 2007) and *Svenska utifrån* (Nyborg & Pettersson 1991) – and

found that they focused more on the form than on the meaning of definiteness. Moreover, the meaning of definiteness was consistently exemplified using NPs referring to referents already introduced in discourse, although definite articles are not typically used that way (Fraurud 1990). Importantly, since Russian demonstratives can also be used to refer back to referents already introduced in discourse (Averintseva-Klisch & Consten 2007), such examples do not help Russian-speaking learners to figure out what the definite article actually means. Although linguistically valid explicit knowledge of article semantics does not by itself necessarily enable learners to use articles accurately, the present discussion suggests that non-valid explicit knowledge (or the lack of explicit knowledge) may hamper their development. For example, in the multiple-choice test, the learners sometimes chose the indefinite article to refer to a definite referent “because it had not been mentioned before”. Thus, it might be, as suggested by Rothman (2008), that foreign-language learners develop *two* systems, one based on input and another based on instruction, that compete with each other – this idea is referred to as the Competing Systems Hypothesis. According to Rothman (2008:98–99), “oversimplified pedagogical rules taught to L2 learners form a system of linguistic knowledge that they use to monitor their output and [that], thus, affects their performance”. From this we should not jump to the conclusion that grammar should not be explicitly taught, but we should draw the conclusion that pedagogical explanations should be based on linguistically valid descriptions of the target language (cf. Rothman 2008:100). As I discuss in Study II, teachers then need to consider how such linguistically valid metalinguistic descriptions can be used to bolster the growth of implicit knowledge, which will eventually enable learners to actually use the target language (cf. Paradis 2009:101).

5.4 Directions for further research

The present thesis has shown that definiteness and the Swedish NP structure constitute a good testing-ground for research into L2 acquisition of linguistic-interface phenomena – that is, areas where aspects such as form and meaning interact (cf. Le Bruyn 2019; Sorace & Serratrice 2009). However, while the project has shed some light on linguistic and cognitive mechanisms underpinning the development of grammatical form and meaning, it should be clear from the discussion above that many questions remain to be answered.

With regard to the distinction between the form and the meaning of definiteness, future research should refrain from measuring learners’ knowledge of meaning only through their production of forms. Instead, sensitivity to differ-

ent aspects of article semantics can be detected using comprehension tests, such as tasks involving truth-value judgements (cf. Schmitt & Miller 2010; Tasseva-Kurktchieva 2015). With regard to the distinction between explicit and implicit knowledge, future research should preferably use on-line techniques, such as self-paced reading and eye-tracking, to examine learners' sensitivity both to the meaning of definiteness (cf. Trenkic et al. 2014) and to the internal structure of the Swedish NP (cf. Jin 2007; Portin et al. 2008). By combining data obtained using such tests with off-line data and oral-production data, future research would be able to explore the development of the form and meaning of definiteness in both production and perception (cf. Tasseva-Kurktchieva 2015) and in both explicit and implicit modes (cf. Ionin, Choi & Liu 2021). Among the potential findings from such research, I would be particularly interested to see how different types of language-learning aptitude might be associated with those data.

As mentioned in Section 3.3, I did in fact collect reaction-time data from the participants investigated in the present project, but owing to focus requirements I have abstained from reporting those data in this thesis. Specifically, I used a test involving self-paced reading to study the learners' spontaneous reactions to NP-internal agreement errors and a timed task involving truth-value judgements to study their spontaneous reactions to infelicitous uses of definite forms in indefinite contexts and vice versa. I hope I will be able to present those data elsewhere. In addition, I see great opportunities for creating similar on-line experiments by exploiting the fact that an NP which includes a definite article can refer indirectly whereas an NP which includes a demonstrative cannot, as shown in example (38) in Section 2.2.3. Further, experiments might also exploit the fact that, while a bare singular count noun is not necessarily ungrammatical in Swedish, it can hardly be used to introduce a new discourse referent – one cannot refer back to such a noun (cf. Julien 2005:20). By means of such experiments, future research will, step by step, advance our understanding of what processes are involved in language learning and how they interact with each other.

Future research should also include participants from various L1 backgrounds (cf. Axelsson 1994; Eriksson & Wijk-Andersson 1988; Jin 2007; Nordanger 2017) and should test their knowledge of previously learned languages. In particular, given that both existing knowledge of article languages and existing knowledge of languages with a rich inflectional morphology may influence the development of definiteness and NP structure in L2 learners of Swedish (e.g. Latomaa 1992; Nordanger 2017), it would be interesting to look at Arabic-speaking learners of Swedish. The reason for this is that Arabic has a

free-standing left-edge definite article (*al*) and an indefinite nominal suffix (*-n*) (e.g., Kremers 2003) – the exact opposite pattern to the Swedish one. Comparing Arabic-speaking learners of Swedish with, say, Russian-speaking ones could therefore help to tease apart the roles of functional and structural similarity and dissimilarity in cross-linguistic influence.

Finally, when it comes to the role of frequency-based regularities in the linguistic input, future research should preferably be based on corpora (cf. Ogawa 2015). In particular, it would be useful to look at the relative frequency of different NP types, and at the distribution of lexical items in those NPs, in a corpus of textbooks intended for L2 learners of Swedish (cf. Alfter 2021; Volodina, Pilán, Rødven Eide & Heidarsson 2014). Ideally, the experiments described above should be based on frequency data from such corpora (cf. Olofsson & Prentice 2020). In fact, now that I am about to finish this thesis, I look forward to diving into new exciting research projects dealing with everything that is going on in the ever-fascinating multilingual mind.

5.5 Conclusions

In this thesis, I have explored L2 acquisition of grammatical form and meaning from a broad linguistic and cognitive perspective. Specifically, I have investigated the development of definiteness in post-puberty Russian-speaking students learning Swedish as a foreign language in Minsk, Belarus. Three tasks were used: a communicative oral-production task eliciting adjectivally modified and non-modified NPs in indefinite and definite contexts; a multiple-choice test where the learners had to provide metalinguistic explanations for their choices between indefinite and definite forms; and a test of language-learning aptitude. The oral-production task was also used to test the beginners' knowledge of the English article system at the onset of their acquisition of Swedish. Taken together, the data collected enabled me to track the development of a complex morphosyntactic structure and the establishment of an association between this structure and its inherently abstract meaning. In addition, I was able to explore the relationship between these two processes (learning the form and learning the meaning of the form). Further, the data collected enabled me to explore the role of explicit knowledge of article semantics, cross-linguistic influence (in particular L2–L3 transfer), language-learning aptitude, structural complexity and input frequency. The overall aim of the research project was to contribute to the theoretical understanding of some linguistic and cognitive mechanisms underpinning L2 acquisition of grammatical form and meaning. To fulfil this aim, two research questions, repeated in (49), were addressed.

- (49) RQ1 What do the development of the form of definiteness, the development of a form–meaning association and the relationship between these two developments look like in post-puberty Russian-speaking learners of Swedish as a foreign language?
- RQ2 How can the development of definiteness in post-puberty Russian-speaking learners of Swedish as a foreign language be accounted for in terms of explicit and implicit knowledge, cross-linguistic influence, language-learning aptitude, structural complexity and frequency-based regularities in the linguistic input?

First, RQ1 can be answered as follows. At the onset of acquisition, the learners have minimal knowledge of the grammatical forms through which definiteness is expressed, but they are sensitive to the meaning of those forms. However, while their knowledge of form develop rapidly towards the target norm, there is no evident development with regard to meaning. Further, those learners who are initially rather keen to use the forms are also rather prone to overuse them; only more advanced learners exhibit a positive form–meaning correlation.

Second, RQ2 can be answered as follows. The learners' metalinguistic theories about the meaning of definiteness are generally not very elaborate, but their actual use of articles does not depend very much on this explicit knowledge (or lack thereof). Instead, there is a positive L2–L3 influence with regard to the L3 morpheme which is structurally similar to its L2-English counterpart, while there is a positive influence of language-learning aptitude with regard to the morpheme that is qualitatively new to the learners. Finally, when it comes to the learners' omission of functional morphology, there seem to be clear effects of input frequency but no obvious effects of structural complexity.

Taking those findings at face value, it can be concluded that, with respect to post-puberty Russian-speaking learners of Swedish as a foreign language, the development of the form of definiteness and the establishing of an association between this form and its meaning may be conceived of as two distinct processes to some extent. Further, it can also be concluded that L2–L3 transfer plays a role when it comes to morphemes that are structurally similar, and that language-learning aptitude appears to be a better predictor when it comes to morphemes without a direct counterpart in any previously learned language. Finally, without neglecting the role of metalinguistic knowledge, it can be concluded that unconscious processes play a role. Such processes are clearly relevant when it comes to the abstract *meaning* of definiteness. However, the attested effects of frequency-based regularities in the linguistic input may also suggest that such processes play a role when it comes to the complex *form* of definiteness as well.

The research project reported in this thesis has shed light on several linguistic and cognitive processes involved in L2 acquisition of definiteness and NP struc-

ture by Russian-speaking learners of Swedish as a foreign language. By doing so, I believe it has also deepened our understanding of different mechanisms underpinning L2 acquisition of grammatical form and meaning more generally. Indeed, this voyage of discovery has shown that there are a great many things to take into consideration if we want to understand how a new language can be learned.

Sammanfattning (Summary in Swedish)

Introduktion

Att lära sig ett nytt språk innebär att lära sig nya former och att etablera associationer mellan dessa former och givna betydelser. Så småningom utgör det nya språket ett tätt sammanvävt mentalt nätverk av form–betydelse-associationer som kan användas i en mängd olika kommunikativa och kognitiva syften. I den här avhandlingen utforskar jag framväxten av ett andraspråk (L2) utifrån ett brett lingvistiskt och kognitivt perspektiv. För det första undersöks om utvecklingen av former respektive form–betydelse-associationer kan beskrivas som *en* process eller som mer eller mindre *separata* processer. För det andra undersöks hur utvecklingen av det nya språket påverkas av explicit kunskap, tvärspråkligt inflytande, språkbegåvning, språklig komplexitet och frekvens-baserade regelbundenheter i det språkliga inflödet.

I fokus står utvecklingen av bestämdhet (definithet) hos studenter med ryska som förstaspråk (L1) som läser svenska i Minsk, Belarus. Bestämdhet är en abstrakt semantisk kategori som vissa språk uttrycker obligatoriskt, typiskt med artiklar. Ryskan hör till de språk som saknar särskilda bestämdhetsmarkörer. Svenskan, däremot, uttrycker bestämdhet genom en komplex grammatisk struktur. De ryskspråkiga studenterna hade dock alla lärt sig engelska innan de började läsa svenska. Precis som svenskan uttrycker engelskan bestämdhet obligatoriskt, men genom en annorlunda och något enklare grammatisk struktur jämfört med svenskan. Den här inlärningsituationen utgör därmed en bra utgångspunkt för en explorativ studie om L2-inläring av grammatisk form och betydelse och om olika lingvistiska och kognitiva faktorer som påverkar denna inläring.

Inom L2-forskningen finns sedan länge ett stort intresse för bestämdhet och artiklar (se, t.ex., Goad & White 2004; Huebner 1985; Ionin 2003; Jarvis 2002; Pongpaibroj 2008; Robertson 2000; Snape 2006; Thomas 1989; Trenkic 2000; White et al. 2011; Young 1996). Detta intresse beror antagligen på att artiklar är mycket frekventa i det språkliga inflödet och att de, trots detta, är svåra att tillägna sig för inlärare vars L1 saknar artiklar. Forskningen har framför allt fokuserat på L2-engelska, men det finns också ett antal studier om bestämdhet och nominalfrasens struktur hos L2-inlärare av svenska och norska (t.ex. Axelsson 1994; Eriksson & Wijk-Andersson 1988; Jin 2007; Jin et al. 2009b,a; Kołaczek 2018; Kowal 2011; Lahtinen 1993a,b; Nordanger 2017; Nyqvist 2013, 2015, 2018; Sundman 1995; Wijk-Andersson 1993, 1995). Icke desto mindre har jag identifierat ett antal kunskapsluckor som jag med den här avhandlingen försöker fylla.

Data samlades in med tre test: (i) en muntlig, kommunikativ uppgift designad för att elicitera olika typer av nominalfraser på både svenska och engelska; (ii) ett skriftligt test där inlärarna fick formulera regler för valet mellan bestämd och obestämd form; samt (iii) ett språkbegävningstest. Utifrån dessa data beskriver jag utvecklingen av bestämdhetens form (en komplex morfosyntaktisk struktur), utvecklingen av en association mellan denna struktur och bestämdhetens betydelse (ett abstrakt semantiskt koncept) samt relationen mellan dessa två processer. Vidare diskuterar jag distinktionen mellan explicit och implicit kunskap om bestämdhetens betydelse, påverkan från inlärarnas L2 (engelska), betydelsen av språkbegävning samt effekten av språklig komplexitet och regelbundenheter i det språkliga inflödet.

Avhandlingens syfte är att öka förståelsen för hur bestämdhet lärs in och vilka lingvistiska och kognitiva faktorer som påverkar denna inläring hos L2-inlärare av svenska utan artiklar i sitt L1. Avhandlingen syftar också till att öka vår kunskap om hur grammatisk form och betydelse lärs in mer generellt.

Bakgrund

Språk är både ett socialt och ett mentalt fenomen (Hulstijn et al. 2014). Den här avhandlingen fokuserar på språk som mentalt fenomen och utgår därmed från kognitiv lingvistisk teori. Kognitiva lingvistiska teorier kan grovt indelas i två grupper utifrån om de är empiristiska eller nativistiska. Empiristiska teorier är typiskt holistiska och konstruktivistiska: språk och språkinläring förklaras som resultatet av individens erfarenheter (t.ex. språkligt inflöde) i kombination med människans generella kognitiva förmågor (t.ex. inlärningsmekanismer) och sociala behov. Nativistiska teorier är däremot typiskt modulära och

generativa till sin natur. Även om nativistiska teorier inte förnekar betydelsen av språkligt inflöde och generella inlärningsmekanismer, antas att dessa inte ensamma kan förklara den mänskliga språkförmågan: språklig kunskap – alltså förmågan att producera och förstå grammatiska meningar – ses inte som vilken annan kunskap som helst (Gil et al. 2018). I arbetet med den här avhandlingen har jag lutat mig mot ett brett teoretiskt ramverk: Sharwood Smith och Truscotts (2014) *Modular Cognition Framework* (MCF). Detta ramverk är i grunden nativistiskt, modulärt och generativt, men stor vikt läggs också vid språkligt inflöde och generella kognitiva mekanismer (jfr Jackendoff 2002). Ramverket ger mig verktyg för att, på ett sammanhängande sätt, beskriva bestämdhetens form och dess betydelse som olika typer av kunskap, verktyg för att beskriva explicit och implicit kunskap som olika typer av kunskap, samt verktyg för att beskriva tvärspråkligt inflytande, olika typer av mentala förmågor och betydelsen av språkligt inflöde. Det ska dock understrykas att avhandlingen är explorativ: jag använder det teoretiska ramverket för att formulera mina forskningsfrågor och redogöra för mina resultat, men studien *testar* inte ramverkets grundläggande teoretiska antaganden.

I linje med MCF skiljer jag alltså på bestämdhet som en semantisk kategori – en *betydelse* – och som en grammatisk kategori (jfr Lyons 1999). När det gäller bestämdhetens betydelse är en nominalfras bestämd om dess referent är unik i en kontext som talaren och lyssnaren delar (Hawkins 1991; Teleman et al. 1999), vilket medför att en bestämd referent i någon bemärkelse är *identifierbar* för lyssnaren. Denna betydelse är i hög grad abstrakt (DeKeyser 2005; Lucas 2011; Žegarac 2004) – medvetandet har inte direkt tillgång till den – och antas vara en universell komponent i mänsklig kognition (Brun 2001; Lyons 1999; Trenkic 2004).

Endast en minoritet av världens språk uttrycker bestämdhetens betydelse obligatoriskt med särskilda grammatiska markörer, typiskt *artiklar* (Dryer 2013a). Som framgår av exempel (1) saknar ryskan artiklar: de två nominalfraserna kan tolkas som antingen bestämda eller obestämda beroende på en rad lingvistiska och kontextuella faktorer (Sussex & Cumberly 2006). Engelskan hör däremot till de språk som obligatoriskt uttrycker bestämdhet. Man kan anta att den bestämda betydelsen i engelska är associerad med en syntaktisk position i nominalfrasens vänsterkant, D, som måste vara fylld med lexikalt material för att nominalfrasen ska uppfattas som bestämd (Lyons 1999). Som framgår av exemplen i (2) tillåter engelskan alltså inte att nominalfraser är nakna: och om inget annat står i D är artiklar obligatoriska. Svenskan uttrycker också bestämdhet obligatoriskt, men genom en annorlunda och mer komplex grammatisk struktur. Exemplet i (3) visar att den obestämda artikeln står till vänster i

nominalfrasen, precis som i engelskan, medan den bestämda ”artikeln” är ett suffix till substantivet. I bestämda nominalfraser med ett attributivt adjektiv uttrycks bestämdheten inte bara med detta suffix utan också med ett bestämt suffix till adjektivet och med en fristående bestämd artikel på nominalfrasens vänsterkant – denna struktur brukar kallas *dubbel bestämdhet* (t.ex. Julien 2005; Teleman et al. 1999).

- (1) belyj kot sidit na mašine
vit katt sitter på bil
{en vit katt/den vita katten} sitter på {en bil/bilen}’
- (2) a. *white cat is sitting on car
b. {a/the} white cat is sitting on {a/the} car
- (3) a. en katt
b. en vit katt
c. katt-en
d. den vit-a katt-en

En rysktalande inlärare av svenska måste alltså lära sig både hur nominalfraser får se ut (dvs. att de inte får vara nakna, att de måste vara bestämt eller obestämt markerade och att den bestämda betydelsen markeras på tre ställen i nominalfraser med adjektivattribut) och i vilka kontexter obestämda och bestämda nominalfraser ska användas (dvs. att bestämda nominalfraser används när referenten är unik i en kontext som talaren och lyssnaren delar). Kombinationen av en komplex grammatisk struktur och en abstrakt betydelse gör att bestämdhet ofta pekas ut som en av de svåraste komponenterna i svensk grammatik (t.ex. Bolander 2012; Ekerot 2011; Ekberg 2013; Philipsson 2013). Om de rysktalande inlärarna av svenska redan har tillägnat sig det engelska artikelssystemet kan detta vara till viss hjälp tack vare likheterna, men där finns som sagt också intressanta skillnader. I den här avhandlingen utforskar jag denna inlärningssituation.

Bestämdhetens form och betydelse hos L2-inlärare av svenska (och norska, som har samma struktur) har undersökts i en rad arbeten (t.ex. Axelsson 1994; Eriksson & Wijk-Andersson 1988; Kowal 2011; Jin 2007; Kołaczek 2018; Lah-tinen 1993a,b; Latomaa 1992; Nordanger 2017; Nyqvist 2013, 2015, 2018; Sundman 1995; Wijk-Andersson 1993, 1995). Denna forskning har visat att valet mellan bestämd och obestämd form – alltså bestämdhetens *betydelse* – är svårare för inlärare som saknar artiklar i L1 (t.ex. finska, kinesiska, polska och ryska) än för inlärare som har artiklar i L1 (t.ex. engelska, spanska och tyska). Nominalfrasens struktur – alltså bestämdhetens *form* – utgör däremot en utmaning för inlärare oavsett om de har artiklar i L1 eller inte. Det har visat sig

att inlärare typiskt gör fler grammatiska fel desto mer komplex frasen är, vilket antagligen förklarar varför mängden grammatiska fel ökade över tid hos de finsktalande inlärarna av svenska i Nyqvist (2013): eftersom deras språk blev mer och mer komplext ökade deras möjligheter att göra fel. När det gäller den grammatiska strukturen verkar inlärare med ett flekterande L1 (t.ex. finska, ryska och polska) ha större svårigheter med de fristående artiklarna (*en* och *den*) än med suffixen (-*en* och -*a*) medan det omvända gäller för inlärare med ett mer analytiskt L1 (t.ex. engelska, kinesiska och spanska). Med denna avhandling bidrar jag till forskningen genom att på ett kontrollerat sätt, vid flera tillfällen, elicitera specifika typer av nominalfraser i specifika kontexter från ryskspråkiga inlärare av svenska. Till skillnad från tidigare studier undersöker jag om de två typerna av kunskap – utvecklingen av den komplexa nominalfras-strukturen och etableringen av en association mellan denna struktur och bestämdhetens abstrakta betydelse – är associerade med varandra.

Många forskare har intresserat sig för vilken explicit kunskap L2-inlärare har om bestämdhetens abstrakta betydelse (t.ex. Butler 2002; Kołaczek 2018; Nyqvist 2013; Yang & Ionin 2009) och för om explicit undervisning kan hjälpa inlärare att använda artiklar mer målspråksenligt (t.ex. Abumlihah 2016; Akakura 2012; Lopez 2015; Master 1994, 1995, 2002; Sheen 2007; Snape & Yusa 2013). Dessa studier har visat att inlärare ofta tror att bestämd form ska användas när man refererar till en *specifik* referent. De känner också typiskt till att bestämd form ska användas när man refererar till något som redan introducerats i texten eller samtalet. Däremot saknar ofta inlärarna explicit kunskap om att valet mellan bestämd och obestämd form beror på huruvida *lyssnaren* kan identifiera referenten. I Nyqvist (2013) var det till viss del så att de som hade en god regelkunskap också var bättre på att välja rätt form i ett grammatiskt test, men det är oklart vilken roll explicit kunskap om bestämdhetens betydelse spelar i kommunikativa situationer, där talaren inte hinner tänka efter vilken form som ska användas. Samtidigt som Abumlihah (2016) och Akakura (2012) visade att explicit undervisning kan förbättra användningen av artiklar i uppgifter där inläraren kan antas använda implicita kunskap, har experimentella studier visat att försökspersoner kan tillägna sig semantiska egenskaper hos artiklar helt utan medvetenhet om vad – eller ens *att* – de lär sig (t.ex. Leung & Williams 2012, 2014; Williams 2005; men se också Hama & Leow 2010; Leow & Hama 2013). Jag bidrar till den här forskningen genom att undersöka vilken explicit kunskap om bestämdhetens betydelse L2-inlärare har och vilken roll denna kunskap spelar i en kommunikativ situation.

I litteraturen påpekas ofta att L2-inlärare av svenska och norska med ett artikellöst L1 i många fall redan har lärt sig engelska, som alltså har artiklar – de

är med andra ord inlärare av ett tredjespråk (L3) – och det har spekulerats om vad detta innebär (Heikkilä 2008; Jin et al. 2009b; Lahtinen 2010; Nordanger 2017; Nyqvist 2013). Ingen studie har dock *testat* om kunskaper i engelska påverkar inläringen av bestämdhetens form och betydelse i L2-svenskan. Utanför den skandinaviska kontexten finns dock några studier som har testat inflytandet av ett L2 på inläring av artiklar i ett L3 (Arıbaş & Cele 2021; Jaensch 2009; Leung 2005). Författarna tyckte sig se positiva effekter av att kunna ett L2 med artiklar när man lär sig artiklar i ett L3, men eftersom en korrelation inte nödvändigtvis innebär ett orsakssamband är det svårt att dra säkra slutsatser av resultaten. Det kan lika gärna vara så att de inlärare som uppvisade en hög färdighet i L2 helt enkelt var mer motiverade eller mer begåvade språkinlärare, vilket skulle kunna förklara deras framgång i L3-inläringen. I den här avhandlingen undersöks engelskans inflytande på utvecklingen av bestämdhet hos rysktalande inlärare av svenska på ett mer detaljerat sätt än tidigare studier gjort. För det första analyseras den obestämda artikeln (*en*), som strukturellt liknar den engelska (*a/an*), och det bestämda nominala suffixet (*-en*), som strukturellt skiljer sig från engelskans bestämda artikel (*the*), var för sig. För det andra kontrollerar analysen för inlärnarnas språkbegåvning.

Termen *språkbegåvning* refererar till en uppsättning kognitiva färdigheter som är särskilt fördelaktiga när man lär sig nya språk, till exempel förmågan att koda nya fonologiska strukturer, förmågan att etablera form–betydelse-associationer och förmågan att identifiera grammatiska mönster (t.ex. Li 2016; Wen et al. 2017). Språkfärdighet har visat sig vara en faktor som påverkar inläring av olika språkliga aspekter, inte minst grammatik (Li 2015). Särskilt stor verkar effekten av språkbegåvning vara när det gäller explicit inläring och när det gäller nya, redundanta och icke-salienta strukturer (Skehan 2015; jfr Tolentino & Tokowicz 2014). Såvitt jag vet har bara en studie undersökt effekten av språkbegåvning när det gäller inläring av artiklar och bestämdhet: Sheen (2007) visade att en hög grad av analytisk förmåga hjälpte inlärare att utveckla sin användning av engelska artiklar. Notera dock att användningen av artiklar testades med metoder som gav inlärnarna goda möjligheter att använda explicit kunskap. Den här avhandlingen bidrar till forskningen genom att undersöka effekten av olika typer av språkbegåvning på den longitudinella utvecklingen av användningen av artiklar i en kommunikativ situation.

För att förstå vilka mekanismer som gör att L2-inlärare utelämnar artiklar behöver forskare studera specifika mönster för utelämnning (jfr Trenkic 2007). Ett sådant mönster är att inlärare av engelska utan artiklar i L1 tenderar att utelämnas artiklar (*a/an* och *the*) mer i nominalfraser med ett attributivt adjektiv (Art + Adj + N) än i fraser utan ett sådant (Art + N) (t.ex. Jarvis 2002; Pongpai-

roj 2007, 2008; Snape 2006; Trenkic 2000; Young 1996). Detta har förklarats både i termer av komplexitet och i termer av regelbundenheter i det språkliga inflödet. Man kan antingen tänka sig att den extra komplexitet som adjektivet medför till frasen gör att färre kognitiva resurser blir över för att producera artikeln, eller att artiklar och substantiv är starkt associerade med varandra eftersom de så ofta står intill varandra i det språkliga inflödet (Austin et al. 2015; Trenkic 2007, 2008, 2009). Den svenska nominalfrasen är en bra testgrund för utforska dessa möjligheter mer. Här finns både högfrekventa morfem (*en* och *-en*, som används i både modifierade och icke-modifierade nominalfraser) och lågfrekventa morfem (*den* och *-a*, som bara används i modifierade nominalfraser). Här finns också ett morfem (den obestämda artikeln) som står till vänster i nominalfrasen och alltså förlorar sin kontakt med substantivet när frasen innehåller ett adjektiv – *en vit katt* – och ett annat morfem (substantivets bestämda suffix) som står till höger i frasen och alltså inte förlorar sin kontakt med substantivet när frasen innehåller ett adjektiv – *den vita katt-en*. Den här avhandlingen bidrar till forskningen om vilka underliggande kognitiva och språkliga processer som påverkar bortfall av grammatiska morfem hos L2-inlärare genom att undersöka bortfall av hög- och lågfrekventa morfem i enkla och komplexa nominalfraser.

Sammanfattningsvis kan det konstateras att L2-inläring av bestämdhetens form och betydelse har väckt stort intresse inom forskningen, men att det icke desto mindre återstår många frågor att besvara. Genom fyra studier försöker jag i den här avhandlingen att besvara några av de frågorna. Varje studie ställer sina egna forskningsfrågor. Dessa sammanfattas i (4).

- (4) A. Hur ser utvecklingen av bestämdhetens form, utvecklingen av en association mellan denna form och dess betydelse samt relationen mellan dessa två processer ut hos rysktalande inlärare av svenska?
- B. Hur kan bestämdhetens utveckling förklaras i termer av explicit och implicit kunskap, tvärspråkligt inflytande, språkbegävnin, lingvistisk komplexitet och regelbundenheter i det språkliga inflödet?

Metod

Det forskningsprojekt som rapporteras i den här avhandlingen är kvantitativt. Data samlades in vid tre tillfällen från 26 studenter i Minsk, Belarus, under deras första år av svenskstudier: vid början av deras första termin, vid början av andra terminen och vid slutet av andra terminen (vid sista tillfället återstod 23 studenter i studien). Vid första datainsamlingstillfället testades även deras engelska och deras språkbegävnin. På så sätt kunde jag följa den initiala utveck-

lingen av bestämdhetens form och associationen mellan denna form och dess betydelse, och samtidigt utforska hur denna utveckling påverkades av studenternas kunskaper i engelska och av deras språkbegåvning. Data samlades också in vid ett tillfälle från 23 studenter som hade läst svenska i minst två år. På så sätt kunde jag få en bild av en potentiell långsiktig utveckling. Forskningsprojektet är med andra ord longitudinellt samtidigt som det är en tvärsnittsstudie. Därutöver samlades referensdata in från 26 L1-talare av svenska och från 17 L1-talare av engelska; på så sätt kunde jag framför allt verifiera att metoderna var valida.

Det huvudsakliga materialet samlades in med en kommunikativ, muntlig uppgift, delvis inspirerad av Trenkic (2000). Jag träffade deltagarna individuellt. På bordet mellan mig och deltagaren fanns ett spelbräde som föreställde en stad, samt träcklossar (spelpjäser) som föreställde bland annat bussar och bilar i olika färger, bord och stolar, flickor och pojkar, hundar och katter i olika färger. Deltagaren fick en karta som visade hur dessa klossar skulle placeras på spelbrädet, och uppgiften bestod i att förklara för mig hur jag skulle placera dem enligt denna karta. Deltagaren hade alltså tillgång till information som jag inte hade och var tvungen att referera till objekt, både unika och icke-unika. Uppgiften tog ungefär 10 minuter att genomföra och eliciterade ungefär 90 nominalfraser, både modifierade och icke-modifierade, i bestämda och obestämda kontexter. Samma uppgift användes för att testa användningen av engelskans artiklar i nybörjargruppen. Samtalet spelades in.

Inlärarnas explicita kunskap om bestämdhetens betydelse testades med ett skriftligt flervalstest, inspirerat av Ionin (2003) och Trenkic (2008), där de fick välja mellan bestämda och obestämda former av nominalfraser i korta dialoger. Precis som i Nyqvist (2013) och Yang och Ionin (2009) fick deltagarna också skriva korta förklaringar till sina val. Varje förklaring poängsattes sedan utifrån hur väl inläraren i fråga uppvisade en medvetenhet om att valet mellan bestämd och obestämd form kräver att talaren tar *lyssnarens* perspektiv. Genom summering av dessa poäng för varje inlärare erhöles ett värde för explicit kunskap om bestämdhetens betydelse.

Språkbegåvning testades med Bokander och Bylunds (2020) online-version av *The LLAMA Language Aptitude Tests* (Meara 2005). Detta test innehåller fyra deltest: ett där deltagaren ska associera nya ord med abstrakta bilder, ett där deltagaren får höra nya ljudsekvenser ("ord") och ska komma ihåg hur de låter, ett där deltagaren ska associera ljud med symboler, och ett där deltagaren ska lära sig ett nytt, artificiellt språk – ord och grammatik – genom att studera meningar (skrivna på detta språk) som beskriver stilerade bilder.

Avslutningsvis transkriberades inspelningarna från den kommunikativa uppgiften. Innan några analyser utfördes exkluderades en rad nominalfras-typer för att jämförelserna mellan individer och mellan grupper skulle bli så valida som möjligt. I var och en av de fyra delstudierna beräknades individuella värden för varje deltagare (för varje testtillfälle). Medelvärden som rapporteras är alltså så kallade *grand means*: jag räknade först ut ett medelvärde för var och en av deltagarna (per testtillfälle) och sedan räknade jag ut medelvärdet av dessa medelvärden per grupp och testtillfälle. På så sätt gjorde jag det möjligt att undersöka samband mellan olika variabler samtidigt som jag undvek att de deltagare som producerade relativt många nominalfraser fick ett oproportionerligt stort inflytande i de statistiska analyserna. Exakt vilka variabler som beräknades och hur de användes redovisas i nästa avsnitt, där resultaten från de fyra studierna sammanfattas.

Resultat

Delstudie I fokuserade på utvecklingen av bestämdhetens form och associationen mellan denna form och dess betydelse. Jag undersökte i vilken utsträckning deltagarna använde de fyra morfemen – den obestämda artikeln (*en*), substantivets bestämda suffix (*-en*), adjektivets bestämda suffix (*-a*) och den fristående bestämda artikeln (*den*) – och i vilken utsträckning de valde korrekt mellan bestämda och obestämda former utifrån den pragmatiska kontexten. Dessutom undersökte jag relationen mellan dessa två typer av förmåga över tid. Resultaten visade att den grammatiska formen utvecklades stegvis mot målspråksnormen: den obestämda artikeln tillägnades först,⁵ sedan substantivets bestämda suffix, sedan adjektivets bestämda suffix, och till sist den fristående bestämda artikeln. Det rädde ett tydligt implikationellt samband mellan de tre bestämdhetsmorfemen: *den* förekom så gott som aldrig utan *-a* som så gott som aldrig förekom utan *-en*. När det gällde förmågan att välja mellan bestämda och obestämda former utifrån den pragmatiska kontexten såg det mycket annorlunda ut. Så fort suffixen började användas, användes de i rätt kontext i omkring 90 procent av fallen, men förmågan att välja rätt form utifrån kontext utvecklades inte över tid. När det gäller relationen mellan dessa typer av kunskap – kunskap om form och kunskap om betydelse – visade det sig att de nybörjare som använde morfemen mest också överanvände dem mest (med andra ord: kun-

⁵ Notera dock att nybörjargruppen hade tillgång till en ordlista när de löste uppgiften, och att substantiv stod tillsammans med den obestämda artikeln i denna ordlista, vilket antagligen påverkade nybörjarnas användning av denna artikel.

skap om form korrelerade negativt med kunskap om betydelse), medan det motsatta förhållandet gällde i den avancerade gruppen: där korrelerade de två typerna av kunskap positivt med varandra. Resultaten är möjligen svårtolkade, men de visar tydligt att utvecklingen av form och betydelse måste studeras som olika processer, och att inlärarna kan ha en starkt utvecklad känsla för bestämdhetens betydelse långt innan en komplett representation av den grammatiska struktur genom vilken denna betydelse uttrycks är tillägnad.

Delstudie II fokuserade på nybörjargruppens användning av engelska artiklar och deras explicita kunskap om dessa artiklars betydelse. Studien replikerades också på gruppen med avancerade inlärare av svenska. Både i den publicerade studien och i replikationen, som bara rapporteras i den här kappan, framgår att inlärarna generellt var bra på att välja mellan bestämd och obestämd form i det muntliga kommunikativa testet. I det skriftliga flervalstestet var de ungefär lika bra på att välja mellan bestämda och obestämda former, men de kunde sällan förklara sina val på ett sätt som antydde att de var medvetna om att valet kräver att talaren tar lyssnarens perspektiv. I stället fokuserade de på huruvida nominalfrasens referent hade introducerats tidigare eller inte och på huruvida den var ”specifik” och ”konkret”. Intressant nog fanns det inget statistiskt samband mellan deras förmåga att förklara den bestämda betydelsen och deras förmåga att välja mellan bestämda och obestämda former i den kommunikativa situationen. Resultatet kan inte tolkas som att explicit kunskap inte påverkar L2-inläring – frånvaro av bevis är inte ett bevis för frånvaro – men resultatet visar att korrekt användning av artiklar inte *förutsätter* explicit kunskap om deras betydelse.

Delstudie III utforskade hur utvecklingen av svenskans obestämda artikel (*en*) och bestämda suffix (*-en*) påverkades av inlärnarnas kunskap om engelskans bestämda och obestämda artiklar (*a/an* och *the*) och av deras språkbegåvning. För vart och ett av dessa fyra morfem beräknades en variabel; den var ett mått på hur bra inläraren var på att producera *många morfem i korrekta kontexter*. Variabeln tog med andra ord hänsyn till både kunskap om form och kunskap om betydelse. Korrelationstest användes för att se vilka variabler som korrelerade med vilka: det visade sig att kunskap om engelskans bestämda artikel, kunskap om engelskans obestämda artikel och ett av LLAMA-testerna korrelerade med användning av svenska artiklar. Dessa tre variabler användes därför som oberoende variabler i två statistiska modeller, en som predicerade utvecklingen av svenskans obestämda artikel och en som predicerade utvecklingen av substantivets bestämda suffix. Resultaten visade att användningen av både den obestämda artikeln och det bestämda suffixet utvecklades över tid. Den enda variabel som predicerade utvecklingen av den obestämda artikeln var användningen av

engelskans obestämda artikel, som alltså liknar den svenska strukturellt. Den enda variabel som predicerade utvecklingen av substantivets bestämda suffix var däremot språkbegävnings. Dessa resultat tyder på att L3-inlärarna under sitt första år av svenskstudier var hjälpta av L2-kunskaper när L2 och L3 liknar varandra, medan språkbegävnings hade större betydelse när de skulle lära sig en helt ny struktur.⁶

Delstudie IV fokuserade slutligen på nominalfras-strukturen hos den avancerade inlärargruppen och på utelämnings av grammatiska morfem i nominalfraser, med och utan adjektiv, i obestämda och bestämda kontexter. Resultaten visade att de två morfem som används i både modifierade och icke-modifierade fraser, alltså den obestämda artikeln (*en*) och det bestämda suffixet (*-en*), producerades i högre utsträckning i obligatoriska kontexter än de två morfem som bara används i modifierade nominalfraser, alltså adjektivets bestämda suffix (*-a*) och den fristående bestämda artikeln (*den*). Detta kan förklaras av att de två förra artiklarna är mer frekventa i det språkliga inflödet än de två senare. Studien visade också att inlärarna generellt inte var bättre på att producera fristående morfem än suffix eller vice versa, och att de inte heller hade någon generell preferens för bestämda former framför obestämda eller vice versa. Däremot visade studien att den obestämda artikeln utelämnades oftare när nominalfrasen innehöll ett adjektiv än när den inte gjorde det, medan modifiering överhuvudtaget inte påverkade produktionen av substantivets bestämda suffix. Detta kan förklaras med att båda morfemen lärs in som delar av substantivkonstruktioner: [*en* N] respektive [*N-en*]. När inläraren vill modifiera substantivet med ett adjektiv kan konstruktionen [*en* N] inte användas eftersom adjektivet så att säga tränger sig in emellan artikeln och substantivet – och detta gör att artikeln utelämnas. Däremot påverkar ett adjektiv inte användningen av [*N-en*]-konstruktionen eftersom ett adjektiv lätt kan placeras framför konstruktionen; det tränger sig inte in mellan substantivet och det bestämda suffixet. I materialet är det också mycket riktigt gott om ogrammatiska fraser där ett oböjt adjektiv står framför ett böjt substantiv (t.ex. **vit katten*). Om denna konstruktionsgrammatiska, frekvensbaserade analys stämmer, beror alltså utelämnings av artiklar inte i första hand på komplexitet utan på regelbundenheter i målspråket.

⁶ Det hade också varit intressant att se om de inlärare som var relativt bra på att använda engelskans bestämda artikel snabbare tillägnade sig svenskans fristående bestämda artikel, som strukturellt liknar den engelska bestämda artikeln. Detta lät sig dock inte göra eftersom bara två personer i nybörjargruppen började använda den fristående bestämda artikeln under sitt första år av svenskstudier.

Avslutande diskussion

I den här avhandlingen har jag undersökt utvecklingen av bestämdhetens form och betydelse hos ryskspråkiga inlärare av svenska som främmande språk. En kommunikativ, muntlig uppgift eliciterade nominalfraser med och utan adjektivattribut i bestämda och obestämda kontexter från två grupper av inlärare: en nybörjargrupp (de testades vid tre tillfällen under sina första två terminer av svenskstudier) och en grupp med mer avancerade inlärare (de testades vid ett tillfälle). Inlärarnas metalingvistiska förståelse för bestämdhetens betydelse undersöktes med ett skriftligt test, och deras språkbegåvning testades med LLA-MA (Meara 2005). Dessutom testades nybörjarnas användning av engelskans artiklar.

Resultaten visar att den morfosyntaktiska struktur genom vilken bestämdhetens betydelse uttrycks utvecklades stegvis mot målspråksnormen. Relativt frekventa morfem (dvs. de morfem som används i både modifierade och icke-modifierade nominalfraser) utvecklades tidigt och användes mer konsistent jämfört med relativt infrekventa morfem (dvs. de morfem som används endast i modifierade nominalfraser). Användningen av den obestämda artikeln (*en*) påverkades negativt av närvaron av adjektivattribut men positivt av goda kunskaper om hur engelskans obestämda artikel (*a/an*) används. Användningen av substantivets bestämda suffix (*-en*) påverkades däremot inte av närvaron av adjektivattribut eller av inlärarnas kunskaper om engelskans artikelsystem, men av språkbegåvning. Vidare var inlärarna generellt bra på att välja mellan obestämda och bestämda former utifrån den pragmatiska kontexten (även om de skilde sig signifikant från referensgrupperna), och denna förmåga utvecklades inte över tid. Samtidigt visade det sig att inlärarnas explicita kunskap om bestämdhetens betydelse generellt var bristfällig, men att denna brist på (korrekt) metaspråklig kunskap inte tycktes påverka deras faktiska användning av artiklar i det muntliga kommunikativa testet. Avslutningsvis ska nämnas att form- och betydelse-variablerna korrelerade negativt i nybörjargruppen: de nybörjare som producerade de grammatiska morfemen oftast tenderade alltså också att producera dem i fel kontexter relativt ofta. I den avancerade gruppen var däremot form-betydelse-korrelationerna positiva.

När det gäller bestämdhetens form – i synnerhet den komplexa dubbla bestämdheten – tyder resultaten på att det är frekvensbaserade regelbundenheter i det språkliga inflödet snarare än själva komplexiteten som gör strukturen svår för L2-inlärare. För det första såg vi att de morfem som används i både modifierade och icke-modifierade nominalfraser (dvs. *en* och *-en*) lärdes in tidigare och användes mer konsistent än de morfem som bara används i modifierade

nominalfraser (dvs. *den* och *-a*) För det andra såg vi att substantivets bestämda suffix (*-en*), till skillnad från den obestämda artikeln (*en*), inte utelämnades oftare i nominalfraser med än i nominalfraser utan adjektivattribut. Dessa båda tendenser kan förklaras av att nominalfraser med adjektivattribut är ovanligare i det språkliga inflödet än nominalfraser utan adjektivattribut. Inlärarna möter *den* och *-a* mer sällan än *en* och *-en*, varför det också tar längre tid att befästa dessa morfem. Och eftersom *en* i det språkliga inflödet förekommer tillsammans med ett substantiv oftare än med ett adjektiv utelämnas artikeln också oftare när nominalfraser innehåller ett adjektivattribut – adjektivet tränger sig in i den etablerade [*en N*]-konstruktionen. Substantivets bestämda suffix står däremot *alltid* tillsammans med sitt substantiv och påverkas alltså inte av närvaron av ett adjektiv. Om det i stället var komplexiteten som gör den dubbla bestämdheten svår borde det bestämda suffixet påverkas *mer* än den obestämda artikeln av närvaron av adjektivattribut, eftersom bestämda modifierade nominalfraser (t.ex. *den vita katten*) är mer komplexa än obestämda modifierade nominalfraser (t.ex. *en vit katt*). I själva verket var det alltså tvärtom, vilket också noterats av Axelsson (1994) och Nordanger (2017). Dessa resultat är i linje med Ogas (2015) observation att typiska mönster av artikel-utelämnning hos inlärare av L2-engelska till viss del reflekterar mönster i det språkliga inflödet. Det teoretiska ramverket, MCF, beskriver det som att hög-frekventa strukturer – simpla, som ett ensamt morfem, eller komplexa, som en [*en N*]-konstruktion – vilar på högre nivåer i långtidsminnet, vilket gör dem mer tillgängliga i språkanvändningen.⁷

När det gäller bestämdhetens betydelse väcker resultaten tre frågor: Vad var det som gjorde det möjligt för inlärarna att välja korrekt mellan obestämda och bestämda former i omkring 90 procent av fallen redan väldigt tidigt i utvecklingen? Vad var det som gjorde att de ändå skilde sig signifikant från referensgrupperna när det gäller valet mellan bestämd och obestämd form? Och varför utvecklades förmågan att välja mellan bestämda och obestämda former inte över tid? Ett möjligt svar på första frågan är att inlärarna har tillgång till bestämdhetens betydelse, som är universell och närvarande i alla mänskliga språk, även i språk som inte uttrycker denna betydelse med särskilda grammatiska markörer. Ett möjligt svar på den andra frågan är att inlärarna fokuserade på att inte glömma att producera de grammatiska formerna, vilket – i kombina-

⁷ Även det faktum att adjektivets bestämda suffix utvecklades tidigare än den vänsterställda bestämda artikeln skulle kunna reflektera regelbundenheter i det språkliga inflödet, där det förekommer många bestämda nominalfraser med adjektiv men utan den bestämda artikeln, men i princip *inga* bestämda nominalfraser med adjektiv men utan adjektivets bestämda form.

tion med att de sällan hade en utvecklad förståelse för bestämdhetens betydelse – gjorde att de ibland producerade formerna i fel kontexter. Inlärarnas explicita kunskap om bestämdhetens *form* kom alltså i vägen för deras intuition för bestämdhetens *betydelse*. Ett möjligt svar på tredje frågan blir i så fall att avsaknaden av utveckling beträffande bestämdhetens betydelse berodde på avsaknaden av metaspråklig kunskap om denna betydelse. Detta resonemang stärks av det faktum att de kursböcker studenterna läste (Nyborg & Pettersson 1991; Levy Scherrer & Lindemalm 2007) fokuserar mer på bestämdhetens form än på dess betydelse (Kołaczek 2018).

När det gäller betydelsen av tvärspråkligt inflytande och språkbegåvning visar resultaten att artiklar i ett L2 kan underlätta inläringen av artiklar i ett L3 och att språkbegåvning framför allt underlättar inläring av nya strukturer. Detta blev tydligt av det faktum att utvecklingen av svenskans obestämda artikel påverkades av inlärarnas behärskning av engelskans obestämda artikel, som strukturellt liknar den svenska, medan utvecklingen av svenskans bestämda suffix, som saknar en motsvarighet i inlärarnas tidigare inlärd språk, påverkades av deras språkbegåvning. Det ska dock understrykas att andra studier visat att L2-inlärare *kan* dra nytta av den funktionella likheten mellan engelskans bestämda artikel och svenskans bestämda suffix. För Nordangers (2017) engelskspråkiga inlärare av norska tog det dock lite tid att ”upptäcka” denna likhet. Med andra ord är det möjligt att även mina ryskspråkiga inlärare, längre fram i utvecklingen, var hjälpta av sina kunskaper i engelska också när det gäller det bestämda suffixet. Samtidigt är det möjligt att en sådan ”mappning” av strukturellt olika morfem kräver någon typ av språkbegåvning.

Avhandlingen syftade till att öka vår kunskap om hur bestämdhetens form och betydelse lärs in av L2-inlärare av svenska och att bidra till den generella förståelsen för vilka mekanismer som påverkar L2-inläring av grammatisk form och betydelse. För att uppnå detta syfte har jag försökt att besvara de två frågorna i (4). Den första frågan kan besvaras enligt följande: Initialt saknar ryskspråkiga inlärare av svenska kunskap om bestämdhetens form, men denna form utvecklas stegvis mot målspråksnormen. Däremot besitter de kunskap om bestämdhetens betydelse ”från början” (även om det inte alltid blir rätt), och denna kunskap tycks inte utvecklas över tid. Dessutom är kunskapen om form och kunskapen om betydelse inte direkt relaterade till varandra, åtminstone inte under de första terminerna av svenskstudier – det är med andra ord inte givet att den som lär sig formen också etablerar en association mellan denna form och dess betydelse eller vice versa. Den andra frågan kan besvaras enligt följande: Medan ryskspråkiga inlärare av svenska som främmande språk tycks vara medvetna om bestämdhetens form verkar de generellt sakna förståelse för

vad formen uttrycker, men deras faktiska användning av artiklar påverkas inte av denna explicita kunskap (eller brist på explicit kunskap). Däremot påverkas utvecklingen av inlärnarnas språkbegåvning, av deras tidigare språkkunskaper, och av frekvensbaserade regelbundenheter i det språkliga inflödet.

Ett antal begränsningar och metodologiska problem bör nämnas. För det första hade nybörjarna tillgång till en ordlista när de löste den kommunikativa uppgiften, och i denna ordlista stod substantiven tillsammans med den obestämda artikeln, vilket antagligen förklarar varför denna användes så mycket och så tidigt av nybörjarna. För det andra eliciterade den kommunikativa uppgiften en mycket begränsad uppsättning nominalfras-typer. För det tredje mättes inlärnarnas kunskap om bestämdhetens betydelse genom deras produktion av bestämda och obestämda former, vilket innebar att betydelse-variabler inte kunde beräknas för de inlärare som över huvud taget inte producerade de relevanta morfemen. För det fjärde operationaliserades *explicit* och *implicit* kunskap på ett ganska trubbigt sätt. Och för det femte var antalet deltagare så litet att det inte gick att testa den relativa effekten av alla faktorer i en och samma modell. Inte desto mindre tror jag att avhandlingen, med hjälp av det insamlade materialet och de olika analyserna, utgör ett viktigt bidrag till vår kunskap om hur bestämdhets form och betydelse lärs in hos inlärare av svenska som saknar artiklar i sitt L1. I förlängningen bidrar undersökningen också till den generella förståelsen för några lingvistiska och kognitiva mekanismer som påverkar L2-inläring av grammatisk form och betydelse.

Även om denna diskussion bitvis är spekulativ har den visat att vi inte kan förstå L2-inläring av bestämdhet utan att skilja på form och betydelse och inte heller utan att skilja på explicit och implicit kunskap. Samtidigt visar diskussionen att de olika typerna av kunskap – explicit och implicit kunskap om form och betydelse – inte kan behandlas separat utan behöver förklaras i relation till varandra. Språk och språkinläring är med andra ord resultatet av ett dynamiskt samspel mellan distinkta kognitiva processer. Sammanfattningsvis visar avhandlingen att det finns många faktorer att ta i beaktande om vi vill förstå hur det är möjligt att lära sig ett nytt språk.

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I

Development of the form and meaning of
definiteness in Russian-speaking learners of
Swedish

II

Explicit and implicit knowledge of article
semantics in Belarusian learners of English:
Implications for teaching

III

III
Cross-linguistic influence and
language-learning aptitude in L3 acquisition
of functional morphology



IV

Swedish noun-phrase structure in Russian-speaking learners: An explorative study of L1 influence and input-frequency effects

IV

Appendix A: The Noun-Phrase Corpus

This appendix includes six tables which provide information about the numbers of NPs included in the Noun-Phrase Corpus. The NPs are broken down by group, data point and language (i.e., the native speakers of English, the beginners when solving the English version of the task, the native speakers of Swedish, the beginners when solving the Swedish version of the task at data point 1, 2 and 3, and the advanced learners of Swedish), by reference (i.e., indefinite, definite, ambiguous reference), by NP type (i.e., adjectivally modified and non-modified NPs) and by structural pattern (i.e., the distribution of the grammatical morphemes *the*, *a/an*, *en*, *-en*, *-a* and *den* in the NPs). Specifically, Tables A1–A3 show the numbers of adjectivally non-modified NPs in indefinite, definite and ambiguous contexts; and Tables A4–A6 show the numbers of adjectivally modified NPs in indefinite, definite and ambiguous contexts. Note that not all NPs found in these tables were included in each of the four studies. In fact, each study looked at a subset of those NPs. Note also that the tables do not display the great individual variation among the learners. Yet, the six tables give a good idea about what the learners' oral-production looked like.

TABLE A1: Numbers (percentages) of non-modified NPs in indefinite contexts

Structural pattern	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
INDEF N	165 (95.9)	165 (59.8)	328 (98.5)	226 (89.0)	244 (80.3)	237 (80.9)	150 (57)
N-DEF			5 (1.5)	8 (3.1)	23 (7.6)	14 (4.8)	
DEF N-DEF				1 (0.4)			
N	1 (0.6)	35 (12.7)		19 (7.5)	33 (10.9)	42 (14.3)	113 (43)
DEF N	6 (3.5)	76 (27.5)					
INDEF N-DEF					4 (1.3)		

TABLE A2: Numbers (percentages) of non-modified NPs in definite contexts

Structural pattern	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
INDEF N	3 (0.4)	43 (4.7)	21 (1.7)	69 (7.3)	137 (12.7)	89 (8.2)	62 (6.6)
N-DEF			1227 (96.8)	568 (60.3)	389 (36.0)	311 (28.6)	27 (2.9)
DEF N-DEF			17 (1.3)	28 (3.0)	4 (0.4)	1 (0.1)	
N	8 (1.0)	265 (29.2)	2 (0.2)	274 (29.1)	544 (50.3)	688 (63.2)	856 (90.6)
DEF N	793 (98.6)	599 (66.0)	1 (0.1)	2 (0.2)	1 (0.1)		
INDEF N-DEF				1 (0.1)	7 (0.6)		

TABLE A3: Numbers (percentages) of non-modified NPs in ambiguous contexts

Structural pattern	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
INDEF N	45 (90.0)	54 (55.7)	113 (94.2)	75 (82.4)	119 (83.2)	83 (79.0)	60 (63.8)
N-DEF			7 (5.8)	2 (2.2)	12 (8.4)	4 (3.8)	
DEF N-DEF				2 (2.2)			
N		17 (17.5)		12 (13.2)	11 (7.7)	18 (17.1)	34 (36.2)
DEF N	5 (10.0)	26 (26.8)					
INDEF N-DEF					1 (0.7)		

TABLE A4: Numbers (percentages) of modified NPs in indefinite contexts

Structural pattern	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
INDEF Adj N	211 (91.7)	188 (56.8)	350 (100)	125 (61.9)	232 (75.3)	246 (72.1)	194 (52.9)
DEF Adj-DEF N-def				8 (4.0)			
Adj N	6 (2.6)	57 (17.2)		44 (21.8)	40 (13.0)	62 (18.2)	172 (46.9)
Adj-DEF N-DEF				1 (0.5)	12 (3.9)		
Adj N-DEF				15 (7.4)	16 (5.2)	27 (7.9)	
DEF Adj N	13 (5.7)	86 (26.0)					
DEF Adj-DEF N							
DEF Adj N-DEF				2 (1.0)	2 (0.6)		1 (0.3)
Adj-DEF N							
INDEF Adj-DEF N-DEF				3 (1.5)	2 (0.6)	4 (1.2)	
INDEF Adj N-DEF				4 (2.0)	4 (1.3)	1 (0.3)	1 (0.3)
INDEF Adj-DEF N							

TABLE A5: Numbers (percentages) of modified NPs in definite contexts

Structural pattern	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
INDEF Adj N	5 (2.3)	40 (7.8)	10 (3.3)	16 (6.3)	104 (20.2)	50 (13)	57 (11)
DEF Adj-DEF N-DEF			280 (92.7)	65 (25.6)	21 (4.1)	6 (1.6)	
Adj N	3 (1.4)	134 (26.1)		63 (24.8)	238 (46.2)	204 (52.8)	451 (87.4)
Adj-DEF N-DEF			12 (4.0)	36 (14.2)	63 (12.2)	8 (2.1)	
Adj N-DEF				58 (22.8)	64 (12.4)	108 (28.0)	5 (1)
DEF Adj N	208 (96.3)	340 (66.1)					
DEF Adj-DEF N				1 (0.4)	4 (0.8)	4 (1)	
DEF Adj N-DEF				6 (2.4)			
Adj-DEF N				3 (1.2)	8 (1.6)		3 (0.6)
INDEF Adj-DEF N-DEF					3 (0.6)		
INDEF Adj N-DEF				4 (1.6)	5 (1)	3 (0.8)	
INDEF Adj-DEF N				2 (0.8)	5 (1)	3 (0.8)	

TABLE A6: Numbers (percentages) of modified NPs in ambiguous contexts

Structural pattern	Eng. L1	Eng. L2	Swe. L1	Adv.	Beg. 3	Beg. 2	Beg. 1
INDEF Adj N	115 (81.6)	105 (47.3)	238 (94.8)	83 (56.1)	198 (73.1)	173 (66.5)	112 (50.5)
DEF Adj-DEF N-DEF			10 (4.0)	8 (5.4)			
Adj N	1 (0.7)	48 (21.6)	3 (1.2)	35 (23.6)	41 (15.1)	69 (26.5)	109 (49.1)
Adj-DEF N-DEF					13 (4.8)		
Adj N-DEF				14 (9.5)	11 (4.1)	15 (5.8)	
DEF Adj N	25 (17.7)	69 (31.1)		1 (0.7)			
DEF Adj-DEF N				1 (0.7)			
DEF Adj N-DEF				1 (0.7)			
Adj-DEF N				2 (1.4)	3 (1.1)		
INDEF Adj-DEF N-DEF				1 (0.7)			
INDEF Adj N-DEF				2 (1.4)	1 (0.4)	1 (0.4)	
INDEF Adj-DEF N					4 (1.5)	2 (0.8)	1 (0.5)

Appendix B: Informed-consent forms

This appendix includes the informed-consent forms administered to and signed by the members of the four groups of participants before any data collection was carried out: the beginner group, the advanced group, the L1-Swedish reference group and the L1-English reference group. The forms were written in the participants' L1: Russian for the learners, English for the native speakers of English and Swedish for the native speakers of Swedish. Each version of the form included two pages. The first page informed the participants about the purpose of the study, the tests and tasks that they were to be subjected to, the gifts that they would receive upon their participation, their integrity and their right to withdraw their consent at any point. The second page was the actual consent form. Here, before signing the form, the participants had to tick a number of boxes to confirm that they had actually understood each part of the information.



Изучение шведского в Беларуси: Сведения об исследовании

В период с осени 2017 года до весны 2018 года, в рамках моей диссертационной работы при университете в Гетеборге, я хочу проследить процесс усвоения Вами шведского языка. Цель моего исследования – изучить формирование и взаимодействие различных сознательных и бессознательных лингвистических способностей у человека, изучающего второй язык, а также исследовать факторы, влияющие на это развитие. Одним из возможных факторов является владение другими языками. Поэтому в начале моего исследования я тестирую Ваши знания английского. Сгласившись на участие в этом исследовании, Вы вносите значительный вклад в развитие нашего понимания процесса усвоения языков, что, в перспективе, важно как для преподавателей так и для обучающихся.

Процедура исследования

Во время каждого моего пребывания в Минске в течении года я буду исследовать усвоение Вами языка при помощи различных тестов: две–три встречи каждый раз. Каждая такая встреча займет 1–1,5 часа.

Сентябрь–октябрь

Индивидуальная встреча 1:	говорение, чтение и аудирование по-шведски
Индивидуальная встреча 2:	говорение, чтение и аудирование по-английски + тест стиля обучения
Общая встреча:	письменный тест на шведском и английском

Февраль

Индивидуальная встреча:	говорение, чтение и аудирование по-шведски
Общая встреча:	письменный тест на шведском

Май

Индивидуальная встреча:	говорение, чтение и аудирование по-шведски
Общая встреча:	письменный тест на шведском

О тестах

В исследование входят тесты разного характера: письменные тесты на бумаге, тесты за компьютером и устные тесты. Некоторые задания покажутся Вам сложными, но пусть это вас не пугает: научное исследование требует, чтобы Вы не смогли справиться со всеми заданиями. Чтобы составить себе представление о том, как много Вы знаете, мне необходимо установить границу предела Ваших знаний. Участвуя в тестах, Вы не подвергаете себя риску. При каждой встрече Вы получите символический подарок из Швеции.

Конфиденциальность

Во всех тестах Вы указываете свое полное имя, что гарантирует возможность сравнения результатов всех тестов. Сразу после каждого теста Ваше имя будет заменено кодом. Ваше имя и контактная информация будут сохранены отдельно от Ваших результатов, и, при публикациях исследования или использовании материалов исследования в целях обучения, будет невозможно установить связь между Вашими личными данными и информацией, полученной в ходе исследования. Ваши преподаватели не получают доступа к Вашим результатам.

Что если Вы передумаете?

Ваше согласие участвовать может быть аннулировано. Вы можете отозвать Ваше участие пока это практически возможно, а именно вплоть до того, как результаты будут составлены до публикации, сообщив мне об этом по адресу, указанному внизу страницы. Ваши результаты будут в таком случае уничтожены.

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Согласие на участие

Перед тем, как подписать документ, прочтите все внимательно. Спрашивайте не задумываясь, если Вам требуется пояснение или если у Вас есть дополнительные вопросы.

Выразите свое согласие с утверждениями, отмечая их крестиками:

1. Я ознакомилась / ознакомился с содержанием этого документа.
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3. Я понимаю, что некоторые тесты в этом исследовании покажутся мне слишком сложными, но что природа научного исследования этого требует.
4. Я даю согласие на использование информации, полученной в ходе исследования, в образовательных целях при условии, что материалы исследования не смогут быть связаны с моими личными данными.
5. Я даю согласие на использование информации, полученной в ходе исследования, в научных целях и при публикациях материала в научных журналах при условии, что материалы исследования не смогут быть связаны с моими личными данными.
6. Я знаю, что результаты моих тестов не будут переданы моим преподавателям.
7. Я даю согласие исследователю на доступ к экзаменационным работам по шведскому языку в рамках моей университетской программы на все время проведения исследования.
8. Я знаю, что могу отказаться от участия в исследовании пока это практически возможно, а именно вплоть до того, как результаты будут составлены до публикации и я знаю, как мне в этом случае связаться с исследователем.
9. Я знаю, что, участвуя в исследовании, я не подвергаю себя риску и что при каждом тесте мне будет сделан символический подарок.
10. Мое решение принять участие в исследовании является добровольным.

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Подпись:	
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Электронная почта:	
Номер телефона:	

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Изучение шведского в Беларуси: Сведения об исследовании

С осени 2017 года до весны 2018 года я провожу лингвистические исследования обучающихся шведскому языку в Беларуси. Цель моего исследования – изучить формирование и взаимодействие различных сознательных и бессознательных лингвистических способностей у человека, изучающего второй язык, а также исследовать факторы, влияющие на это развитие. Сгласившись на участие в этом исследовании, Вы вносите значительный вклад в развитие нашего понимания процесса усвоения языков, что, в перспективе, важно как для преподавателей так и для обучающихся.

Процедура исследования

Запланировано две встречи. Первая встреча – индивидуальная, при которой я прошу Вас говорить и читать на шведском, а также проверяю Ваши навыки аудирования. При этой же встрече я тестирую общие способности и рабочую память. При второй встрече Вы в течение часа работаете с письменным тестом.

О тестах

В исследование входят тесты разного характера: письменные тесты на бумаге, тесты за компьютером и устные тесты. Некоторые задания покажутся Вам сложными, но пусть это вас не пугает: научное исследование требует, чтобы Вы не смогли справиться со всеми заданиями. Чтобы составить себе представление о том, как много Вы знаете, мне необходимо установить границу предела Ваших знаний. Участвуя в тестах, Вы не подвергаете себя риску. За участие в исследовании Вы получите символический подарок из Швеции и свидетельство от Университета Гетеборга.

Конфиденциальность

Сразу после каждого теста Ваше имя будет заменено кодом. Ваше имя и контактная информация будут сохранены отдельно от Ваших результатов, и, при публикациях исследования или использовании материалов исследования в целях обучения, будет невозможно установить связь между Вашими личными данными и информацией, полученной в ходе исследования. Ваши преподаватели не получают доступа к Вашим результатам.

Что если Вы передумаете?

Ваше согласие участвовать может быть аннулировано. Вы можете отозвать Ваше участие пока это практически возможно, а именно вплоть до того, как результаты будут составлены до публикации, сообщив мне об этом по адресу, указанному внизу страницы. Ваши результаты будут в таком случае уничтожены.

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UNIVERSITY OF GOTHENBURG

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Learning Swedish as a Third Language: English Control Data Information about the Study

Background

In my PhD project at the University of Gothenburg, I investigate the acquisition of Swedish as a third language. I follow the language development in Russian speaking learners of Swedish who have previously learned English. The question is to what extent their knowledge of English will affect their way into the Swedish language. Thus, their English must be tested, and to make sure that my experiments actually measure what they are intended to measure, I need native English speakers as a control group. My hope is that you want to be part of this control group!

Why should you participate?

The aim of the study is to increase our general understanding of the relations between different types of (conscious and unconscious) linguistic knowledge within a language learner. In a long-term perspective, results from the research may be helpful for language teachers and learners. Your participation in the project is of great value for this endeavour. As a token of our appreciation, you will, upon your participation, receive a cinema ticket and a diploma certifying that you have participated in an experimental linguistic study. Moreover, participants who have already completed the tests have found them very interesting.

What will you do?

If you choose to participate, you and I will book a meeting at a public but quiet place, preferable at a library at your school, or where ever you prefer. Our meeting will take up to an hour; see the schedule here:

The tests

-
- Test 1: **Speaking** You have to instruct the experimental leader how to place items on a board according to a map; 10 minutes.
- Test 2: **Listening** You will listen to sentences and watch pictures on a computer screen, and have to tell whether the sentences are true or false; 15 minutes.
- Test 3: **Working Memory** To increase the validity of the previous experiments, your working memory will be tested; 5 minutes.
- Test 4: **Multiple-Choice** Finally, you have to choose the most appropriate word in given contexts; 5 minutes.
- Background: **Background Questionnaire** After the tests, I want you to answer some questions about yourself; 5 minutes.

Your integrity

If you participate, I will ask you for your name and contact information. Your data will be given a code, so that it can be tracked to you. This is to make sure that you can withdraw your data from the study if you change your mind. When the material is used in research, it cannot be connected to you as a person. Your consent is not binding: you can withdraw from the study as long as it is practically possible (that is, until the data is published) by sending me an e-mail (you find the address below).

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Consent

Read the information on the previous page carefully before signing the consent form. Do not hesitate to ask if anything is unclear, or if you want more information. You agree with the following statements by **tacking the boxes** to the right.

1. I have read and understood the information on the other side of this paper.
2. My consent applies to all tests mentioned at the other side of this paper.
3. I give my consent for the material that is collected from me to be used in teaching at the university, as long as no information can be connected with me as a person. (It is not necessary to tack this box.)
4. I give my consent for the material that is collected from we to be used in research and published in scientific journals, in conferences, and in data bases, as long as no information can be connected with me as a person.
5. I know that I can withdraw this consent after the test session as long as it is practically possible, and I know how I, in that case, can contact the researcher.
6. I know that participating in the study entails no risks for me.
7. I accept that I, upon my participation, will receive a cinema ticket and a certificate.
8. I choose of my own free will to participate in the study.

Today's date:	
Signature:	
Full name:	
E-mail:	
Phone number:	



Tredjespråksinläring av svenska – svensk kontrolldata Information om studien

Bakgrund

I mitt doktorandprojekt undersöker jag inläring av svenska som andra- och tredjespråk. Jag följer språkutvecklingen hos rysktalande inlärare av svenska som tidigare lärt sig svenska. Forskningsfrågan är hur deras kunskaper i engelska påverkar deras väg in i svenska språket. För detta ändamål testas deras svenska på olika sätt, och för att vara säker på att testen fungerar som de ska behöver jag en svenskspråkig kontrollgrupp. Jag hoppas att du vill vara med i denna grupp!

Varför ska du delta?

Studiens syfte är att öka vår generella förståelse för hur olika typer av språklig kunskap – medveten och omedveten – interagerar hos en flerspråkig individ. I det långa loppet kan resultaten bidra till förbättrade undervisnings- och inlärningsmetoder. Din medverkan är mycket värdefull för projektet, och som tack får du en biobiljett och ett intyg från Göteborgs universitet. Deltagare som redan gjort experimenten har tyckt att de var mycket intressanta.

Vad ska du göra?

Om du vill delta bokar du ett möte genom att ringa, sms:a eller mejla mig (se kontaktuppgifter nedan). Vi ses på Martas Café på Lunds stadsbibliotek, eller på en annan lugn offentlig plats som du föredrar. Jag bjuder på fika! Testen tar 1–1,5 timme, se schemat nedan:

Testen (1–1,5 timme)

1. **Tala** Du ger instruktioner till testledaren utifrån en karta som bara du får se (ca 10 minuter)
2. **Lyssna** Du sitter vid en dator och får se bilder och höra meningar och ska för varje mening avgöra om den är sann eller falsk (ca 20 minuter)
3. **Läsa** Du sitter vid en dator och läser meningar, ett ord i taget, och efter varje mening måste du svara på en ja/nej-fråga (ca 20 minuter)
4. **Arbetsminne** För att öka experimentens validitet testar vi också ditt arbetsminne (ca 5 minuter)
5. **Flervalstest** Avslutningsvis får du fylla i ett flervalstest med papper och penna; här får du också svara på några frågor om dig själv (ca 15 minuter)

Din integritet

Ditt namn sparas tillsammans med en unik kod, detta för att det ska vara möjligt för dig att avbryta ditt deltagande även efter att materialet samlats in. När materialet sparas, analyseras, publiceras och eventuellt visas på konferenser och i undervisning används bara din kod, som inte kan kopplas till din person. Du kan avbryta ditt deltagande så länge det är praktiskt möjligt – det vill säga, fram tills resultat publicerats – genom att mejla mig (se adress nedan).

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Informerat medgivande

Läs informationen på föregående sida noga. Du medger följande genom att kryssa i rutorna till höger:

1. Jag har läst och förstått informationen på föregående sida.
2. Mitt medgivande gäller alla test som räknas upp där.
3. Jag medger att materialet som samlas in från mig får användas i undervisningssyfte på universitet och högskolor så länge min integritet skyddas. (Det är inte nödvändigt att godkänna denna punkt.)
4. Jag medger att materialet som samlas in från mig får användas i forskning och publiceras i vetenskapliga tidskrifter, på konferenser, och i databaser, så länge min integritet skyddas.
5. Jag vet att jag har rätt att avsluta min medverkan i studien även efter att materialet har samlats in, så länge det är praktiskt möjligt, och jag vet hur jag i så fall går till väga.
6. Jag vet att deltagandet inte innebär någon risk för mig.
7. Jag accepterar att jag för mitt deltagande erhåller en intyg och en biobiljett.
8. Jag väljer av fri vilja att delta i studien.

Dagens datum:	
Namnsteckning:	
Namnförtydligande:	
E-mejl:	