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MORPHOLOGY IN TRANSITION: PLURAL INFLECTION OF FINNISH NOUNS BY ESTONIAN AND RUSSIAN LEARNERS

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Abstract: The paper explores the nature of cross-linguistic influence in morphology. 30 Estonian (a closely related L1) and 30 Russian (a non-related L1) beginning and advanced learners of L2 Finnish were tested for their skills in nominal inflection in three different tasks: separate nouns of morphophonologically varying inflectional categories to be inflected in several plural case forms in writing, the same nouns to be used in a narrative writing task and in an oral inflection task. The nouns were selected to represent various degrees of inflectional and/or semantic similarity between Finnish and Estonian (for Russian no such similarity exists). The results indicate that—in opposition to what has been previously claimed—not only does cross-linguistic influence exist within the domain of morphology but it also varies systematically across inflectional categories and between groups at different levels of general skills in Finnish.

Keywords: morphology, crosslinguistic influence, inflectional categories, Finnish as L2, Estonian and Russian as L1

1. Introduction

No area of second and foreign language acquisition research is likely to have received as much attention and remained as elusive as the influence of the first language (L1). Despite many studies conducted on this topic, there is no generally accepted understanding of how first language influence manifests itself in the learning and use of second or foreign language (L2). Many different views about the role of L1 in L2 learning have been presented. It is widely accepted, however, that learners exhibit systematic

differences according to different L1 and L2 configurations. The closer the two languages are to each other genetically, typologically and lexically, the quicker one can learn L2, at least in the beginning. At the same time numerous conflicting claims exist concerning the nature and extent of L1 influence (Ringbom 1987; Dechert–Raupach 1989a; Schmidt 2001).

There are various possible reasons for the contradictory findings of the studies about first language influence. First of all, the interaction between languages is extremely complex in nature. Secondly, empirical studies have focused on large Indo-European languages, particularly English, and the results are not automatically applicable to structurally and typologically different languages. The languages involved have often been two fairly 'similar' languages, such as English and Spanish, neglecting many naturally heterogeneous multilingual contact situations. Thirdly, due to the impact of contrastive analysis, the potentially positive effects of language interaction have been underestimated (Dechert –Raupach 1989a, ix–x). Furthermore, there has been neither a general agreement on what first language influence actually is nor any unified research paradigm or theoretical and methodological framework for investigating first language influence. It has been proposed (Jarvis 2000) that the existing confusion over L1 influence can be overcome by establishing a rigorous methodological framework, a minimal set of methodological standards, for the study of L1 influence, to ensure mutual comparability and true generalization of findings about L1 influence.

In this article some results of a study, planned with Jarvis' guidelines in mind, are presented. The next two sections set the background by discussing the nature, properties, and terminology of L1 influence in general and within morphology. Section **4** provides a brief overview of the inflection of the languages involved. Sections **5–8** include the aims, data, methods and results of the study on Estonian and Russian L1 effects on learning Finnish as L2. Finally, the results are discussed to draw conclusions about the theoretical questions of the nature and existence of L1 influence in morphology.

2. On products, processes, and the nature of L1 influence

The various theoretical views on the nature of language, language skills, and language learning affect the assumptions made about L1 influence in second language acquisition (SLA). These beliefs range from structural-contrastive theories, which see L1 solely as a source of interference (neg-

ative transfer) and ignore positive affects of L1, to such versions of UG-based SLA theories which assume that L2 acquisition happens exactly like L1 acquisition, with no influence from a previously acquired language. At the other extreme again is the UG-based Full Transfer/Full Access hypothesis (Schwartz–Sprouse 1996) which presupposes complete transfer, i.e., the starting point for L2 is the acquired L1 and all the mechanisms used for L1 acquisition.

The Competition Model (Bates–MacWhinney 1987; 1989; MacWhinney 1990) also suggests that L2 learning begins with a massive transfer from L1 as the learner attempts to construct an L1-based interpretation of L2 structures. In this view L1-based conceptual influence can take place even when the learner has not made any overt comparison or interlingual identifications between L1 and L2 forms and features. The initial massive transfer from L1 to L2 is followed by a long period when learners try to restructure their L2 systems to match the target system as closely as possible. At this time two additional factors determine the L2 system: cue costs and L2 generalizations, which play only a minor role in the early stages of L2 learning (MacWhinney 1990, 76). L2 patterns with strong cues are generalized and these prototypical (salient, strong, frequent, unmarked) patterns are used also where they are not appropriate. Where L1 is close to L2 there are more possibilities for interaction and competition between L1 influence and L2 generalizations as learners' L1 and L2 systems are partly overlapping. As learning progresses, learners' L2 begins to contain structures at least partially independent of L1, and learners' L2 converges towards the target (Kaivapalu 2005, 284).

Most SLA theories and models, however, see L1 influence as important but not exclusive. Between the extremes remain, e.g., such forms of error analysis and interlanguage studies which aim at finding regularities in SLA, with explanations based both in L1 and elsewhere. Nearly all SLA studies, whether linguistic, cognitive, functional, or interactional, acknowledge L1 influence at least at the level of data description; the L1 of the informants is a part of the standard background variables.

The name of the phenomenon in question also varies from one source to another. **First language influence** is the most neutral one. In this study *L1 influence* and *transfer* are used as synonyms, for reasons stated below. Both involve all effects of L1, whether resulting in target-like or non-target-like L2 expressions. The latter is also called **interference**. The third alternative, **crosslinguistic influence**, is deemed to be a wider and more complex issue than just the transfer of structural elements of language.

Regardless of whether **influence** or **transfer** is chosen, the interaction of L1 and L2 can be seen both as a process and as a product (see, e.g., Sajavaara–Lehtonen (1989); note also Odlin (1989, 161) cautioning that the product must be known before the process leading to it can be studied). Examples of products of (assumed) transfer can be found in the huge quantity of research conducted in the contrastive framework or under the heading of Error Analysis. This is also true about Estonian and Finnish both as L1 and as L2, as nearly all studies concerning the learning of one of these languages by speakers of the other belong to this genre.

The process view of transfer can be divided into two categories. The first one encompasses the cognitive mechanisms involved in the transfer of linguistic knowledge, patterns, rules, or materials. This area has been in focus in the psycholinguistic study of bilingualism. A typical definition of transfer in this sense is for instance: "a procedure which activates knowledge in one cognitive 'area' for utilization in a different 'area' " (Færch–Kasper 1989, 173). Möhle–Raupach (1989, 202) further divide this area into (1) the transfer of memory traces, or transfer of practice, (2) generalisation, i.e., extending procedures to cover new items, and (3) analogy, the problem-solving procedure where information is borrowed from one domain to another.

Another type of transfer process is the use of cognitive mechanisms employed in producing or understanding L1 in service of the same tasks in L2. This area is less researched, perhaps because such cognitive processes are thought to be universal. Even if this is true, however, it is possible to assume that different procedures for language production and reception are efficient and economical in different languages. Thus the relative importance and the division of labour between these procedures could be acquired with and influenced by L1 (Martin 2006). A speaker of Finnish needs quick ways to process morphological forms, while in Vietnamese such readiness is much less required. This is in accordance with MacWhinney (1990, 78, 80), who does not view transfer as a simple and uniform process but as a general approach to language learning in which the learner explores all possible paths of transfer.

The scope and occurrence of the different transfer types does not only vary by the area of linguistic knowledge or skills but also from one language pair to another. Production or reception processes can be transferred between any languages, linguistic patterns and rules between languages which share a potential area for their application. Product transfer is dependent also on the structural qualities of the languages in-

volved. Vocabulary items can be fairly freely transferred, while the transfer of grammatical items is more restricted, as is well-documented in the study of code-switching (for an overview, see e.g. Halmari 1997). Between closely related languages, however, product transfer is quite possible in all areas of language.

To detect potential areas of product transfer one must compare the structures of L1 and L2 for possible interfaces between the two languages (Odlin 1989, 28–31). For this reason the results of Estonian–Finnish contrastive studies (mainly Remes 1995) are used as a basis of this investigation.

Many studies on L1 influence completely ignore the possibility that it could be different both in quantity and nature at different levels of L2 proficiency. It has been assumed that the typological closeness between L1 and L2 does not benefit the language learner until her or his L2 is sufficiently well developed to utilize similarities between the two languages (Giaccobbe 1992). This relationship between L1 influence and L2 proficiency is also in focus in this article. The learners' own perceptions of the closeness of L1 and L2 may also be more important than the actual typological relationship (Sajavaara 1994, 22). Data for exploring learner perceptions was collected in connection of this study but is not reported here (see Kaivapalu 2004).

Reviewing recent literature, Jarvis (2000, 246–7) deduces six possible relationships between L1 influence and L2 proficiency:

(1) (a) L1 influence decreases with increasing L2 proficiency.
(b) L1 influence increases with increasing L2 proficiency.
(c) L1 influence remains constant with increasing L2 proficiency.
(d) L1 influence ultimately decreases, but nonlinearly.
(e) L1 influence ultimately increases, but nonlinearly.
(f) L1 influence ultimately never decreases nor increases, but its presence continually fluctuates as L2 proficiency increases.

Some studies have shown that L1 influence decreases as the learner attains awareness and control over L2 conventions, whereas others have suggested that L1 influence increases as the learner acquires the L2 tools necessary for expressing his or her L1-based intentions. Still other studies have argued that L1 influence neither increases nor decreases with L2 proficiency, or that it fluctuates substantially before it finally stabilizes (for further references, see Jarvis *op.cit.*, 247).

The inconsistency of L1 influence found in previous studies is largely due to the fact that positive and negative L1 influence have not been separated. The starting point of the present study is that with increasing L2 proficiency the learners acquire skills for utilizing the converging inflectional patterns of L1 and L2. At the same time, they also learn to avoid misleading diverging inflectional patterns, despite similar stems and meanings. This process may or may not be conscious, although when asked, learners are often able to explain how they inflect words. In any case, it is important not only to ask whether the morphological influence of the learners' L1 increases or decreases with L2 proficiency but whether the influence is positive or negative. The main focus of this study is the positive effects of L1 influence.

3. First language influence in morphology

The transferability of morphology has provoked more skepticism than any other subsystem of language. Especially bound morphology has sometimes been pointed out as an area immune to the first language influence (Jarvis–Odlin 2000, 536–9). The theoretical, mainly Anglo-American, literature on L1 influence often lists only phonology, syntax and semantics as potential domains of transfer (see, e.g., Selinker 1983, 36; Odlin 1989). Even if morphological transfer is mentioned, it is considered rare and no examples or other evidence is presented (see, e.g., Færch–Kasper 1989). The roots of this position are easy to trace: SLA research has concentrated on languages with little morphology. Morphologically rich languages have received scant attention either as L1 or as L2.

Teachers and researches of morphologically rich languages, however, have always been aware of the significant role of morphological transfer in the learning of a closely related second or foreign language. This is commonly known among scholars of Finnish and Estonian. It is also the general impression and experience of Hispanists and Lusitanists (Wolfgang Dressler, personal communication 11/6/2006). The growth of the empirical data and research regarding typologically different languages (e.g., Sulkala 1996) has made it increasingly clear that some supposedly nontransferable structures find their way into learners' production. Some resent research (e.g., Toth 2000; Montrul 2000; Miličevič 2000) has suggested, contradicting former opinions, that morphology is the module of grammar most affected by L1 transfer. The experimental studies, accomplished mainly in the theoretical framework of Markedness Differen-

tial Hypothesis but also Full Transfer/Full Access-hypothesis (Novakovič 2004) are focused on free morphology and morphosyntax. The few studies dealing with other aspects of the L1 influence, including rich bound morphology, concern languages such as some Finno-Ugric languages (Sulkala 1996; Kultalahti 1996; Jarvis–Odlin 2000; Kaivapalu 2005) and are often not available for the international community of researchers.

Even though any first language influence involving any free or bound morphemes qualifies as morphological transfer, the notion is by no means monolithic. In addition to the process vs. product division presented above, it can be subcategorized into derivational and inflectional phenomena. Inflectional morphemes have been considered to be less likely candidates for transfer than derivational ones (Jarvis–Odlin 2000, 538). This study focuses solely on the transferability of bound inflectional morphology.

Transferability of linguistic products requires an interface between L1 and L2: there has to be something in both languages which triggers the transfer in the minds of learners. Closely related languages with rich morphological systems, such as Finnish and Estonian, offer a good opportunity for studying L1 influence on L2 products because the similarity of the languages provides this interface. A non-related language like Russian may share this interface for some aspects of processing, but as transfer processes are not the focus of this study, L1 speakers of Russian serve well as a control group. The relationships between the languages of this study (Estonian and Russian = L1, Finnish = L2) are presented in Figure 1.

This study, which investigates the production of plural forms of Finnish nouns by Estonian and Russian learners, is a step towards understanding the issues discussed above. The structural features of Russian, Estonian, and Finnish necessary for understanding the set-up and results of the study are described below.

4. Nominal plurals in Russian, Estonian and Finnish

Russian, Estonian and Finnish have long been used in adjoining or overlapping geographical areas and the cultures share many features but the languages are historically and typologically unrelated. Russian is an Eastern Slavic language, related closely to Ukrainian and more remotely to Polish, Czech, Slovak, and Serbo-Croatian. Estonian and Finnish are closely related and belong to the Finno-Ugric language family. All three languages are synthetic languages with rich inflectional morphology.

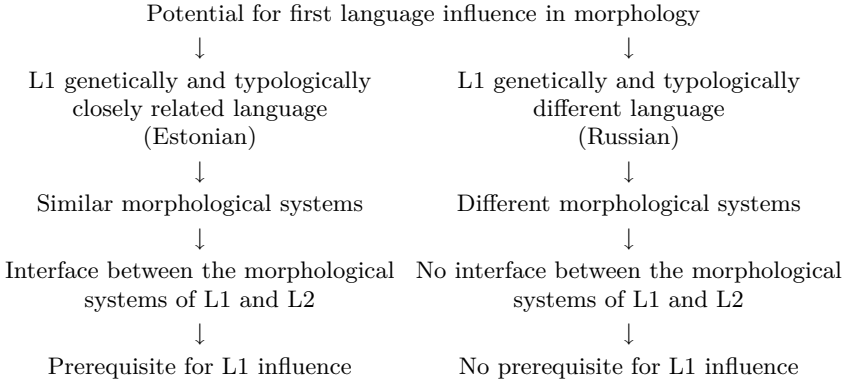

Fig. 1

First language influence in target language morphology as a function of the genetic and typological relationship between the languages

The inflectional systems of Russian, Estonian and Finnish combine agglutination and flexion[1] to express grammatical meaning, albeit to a different extent and with different distributions. In the classic morphological typology (Comrie 1983, 39–41) the most inflecting language of the three is Russian and the most agglutinative one is Finnish. Estonian has historically shifted from the old agglutinative structure towards flexion due to reduction of word forms and the development of a complex phonological quantity system (Remes 1995, 105). In the agglutination process the stem, which carries the lexical meaning, does not change when affixes, which carry the grammatical meaning, are attached to it. Over time the parts have fused, resulting in changes in the phonological shape of the stem and allocating both the lexical and the grammatical meaning on the stem. In Russian the opposite development has been observed: although Russian morphology is primarily flexional, agglutinative features have a tendency to expand (Валгина 2003; Viitso 1990, 548).

The Russian case system has six productive nominal cases (*Русская грамматика* 1982, 493–506): nominative (*именительный падеж*), genitive (*родительный падеж*), dative (*дательный падеж*), accusative

[1] In Estonian and Finnish linguistics, the term *flexion* has referred to the use of stem alterations in inflection, with or without suffixes. In the Anglo-Saxon literature the term is often synonymous with *inflection*, and the stem alterations as indicators of syntactic role are called *fusion*. In this paper *flexion* is used in the former sense (Hint 1986, 56).

(*винительный падеж*), instrumental (*творительный падеж*) and prepositional (*предложный падеж*) in singular and plural (Table 1).

Table 1

Inflection of Russian nouns in singular and plural (Eslon 2003, 26–9, 60)

	Declension I		Declension II		Declension III	
	Singular	Plural	Singular	Plural	Singular	Plural
Nominative	стен-**а** 'wall'	стен-**ы**	стол 'table'	стол-**ы**	мышь 'mouse'	мыш-**и**
Genitive	стен-**ы**	стен	стол-**а**	стол-**ов**	мыш-**и**	мыш-**ей**
Dative	стен-**е**	стен-**ам**	стол-**у**	стол-**ам**	мыш-**и**	мыш-**ам**
Accusative	стен-**у**	стен	стол	стол-**ы**	мышь	мыш-**ей**
Instrumental	стен-**ой**	стен-**ами**	стол-**ом**	стол-**ами**	мыш-**ю**	мыш-**ами**
Prepositional	о стен-**е**	о стен-**ах**	о стол-**е**	о стол-**ах**	о мыш-**и**	о мыш-**ах**

The grammatical categories of case and number are primarily expressed by inflectional suffixes, with rection and stress as secondary (Булыко et al. 1990, 98). Typical of a flexional language, there is no clear boundary between the morphemes for case and number but the markers are syncretic (*Русская грамматика* 1982, 471; Comrie 1983, 41). Grammatical gender is the basis of the inflectional categorisation (*Русская грамматика* 1982, 470), in nouns also the animate–inanimate distinction. Thus, Russian noun forms simultaneously carry several grammatical categories, e.g., the noun form in *(вижу) ученика* '(I see) a pupil' includes the properties accusative, singular, masculine, and animate, and the adjective *зелёная* 'green' includes nominative, singular and feminine (Булыко et al. 1990, 57, 98–9).

In the singular there is adjective–noun agreement for gender and case, in the plural only for case (*Русская грамматика* 1982, 503). Adjective inflection is secondary to noun inflection and less independent (Булыко et al. 1990, 85). The differences between noun and adjective inflection add to the complexity of the Russian inflectional system. Russian also has a rich system of prepositions combining with the inflectional system to represent spatial, temporal, and other grammatical and semantic relations.

In Finnish and Estonian, one of the most striking grammatical characteristics is the extensive nominal case system: both have approximately 14 nominal cases (the exact number depending on the definition of a case). The systems converge to a great extent. Most cases are the same; the suffixes indicating them only display minor phonological differences. Another shared feature is that the same case endings can occur both in the singular and in the plural. Adjectives and nouns are usually inflected

alike. Agglutination is the basic method of case inflection both in the singular and in the plural: plural markers and case suffixes are attached to stems. As singular and plural case markers often coincide, the plural marker is the only indicator of the number (Remes 1985, 152).

Even if Finnish nominal paradigms generally consist of word forms where stem and suffixes can clearly be separated, the borderlines between the suffixes are not always equally clear: the indicators for case and number sometimes fuse (ISK 2004, 106–7). The shapes of these elements depend on the shape of the other suffix, the phonological structure of the stem, and morphophonological variation. Such interconnections make it more feasible to describe the expression of number and case as one process (Karlsson 1983, 282).

The production of plural forms is affected by morphophonological stem alternations, most importantly consonant gradation affecting stops (*p, t, k*), vowel changes preceding the plural marker *i*, and other miscellaneous stem variations (see Karlsson 1983, 312–22; Remes 1983; Hint 1997; EKG I 1995, 129–92; ISK 2004, 86–9). The distribution, importance and functions of morphophonological variation, however, differ clearly in Estonian and Finnish (Remes 1995; Hint 1997, 22-35; EKG I 1995, 150–1, 172–7). The number and frequency of changes within the paradigms is higher in Estonian, and Estonian learners of Finnish should consequently be used to them. Nevertheless, the Estonian–Finnish differences in the inflectional variation of stems and suffixes are displayed in the Finnish of Estonians (Kaivapalu 1999). The richness of stem allomorphy of Finnish is thus a challenge also for the speakers of an even richer language.

Both Finnish and Estonian have two types of plural morphemes, usually called *i*- and *T*-plurals. In addition, in Estonian plural can be expressed by the stem alone. The distribution of the *i*- and *T*-plurals are different in the two languages, however (Hint 1986; Remes 1989). In Finnish, the *i*-plurals are by far more common than *T*-plurals, which are only possible in a few cases, while in Estonian a *T*-plural is always an alternative (except for some partitive forms, for further details see Remes 1995). Also, the *i*-forms are quite productive in Estonian. Both plural types can thus provide the necessary interface for transfer, with variance depending on the case and word paradigm in question.

The inflectional systems of Estonian, Finnish and Russian are all rich and complicated, but different domains of inflection are involved. There is no direct correspondence between the case system of Russian and those of Estonian and Finnish. Russian learners of Finnish thus lack

the necessary linguistic interface for transfer, be it negative or positive, available for Estonian learners.

5. Aims and hypotheses

The principal aim of this study is to show that **L1 influence at the level of the morphological forms can be found** in the domain of acquisition of L2 bound inflectional morphology and thus to contribute to the discussion about transferability in morphology. The arguments justifying this aim have been presented above. On the basis of them, it is predicted that the results of noun inflection tests in Finnish show an advantage for Estonian learners in comparison with Russian learners, particularly in the areas where the plural inflection of Finnish nouns matches that of Estonian. We assume this to be true regardless of whether or not the Estonian learners are aware of the converging inflectional patterns between L1 and L2.

The use of the L1 pattern in an inflectional process can also be misleading, particularly when similar stems are inflected differently in the two languages. With divergent inflectional patterns no difference is predicted between the Estonian and Russian learners.

The second aim is to examine the **relations between L1 influence and L2 proficiency.** This aim is based on the common bias towards negative transfer in the history of the study of L2 acquisition. Jarvis and Odlin (2000, 539) suggest, however, that comparisons of groups with different L1s can not only help to determine the negative transfer but are especially valuable in demonstrating the facilitating effects of similarities between learners' L1 and L2.

These aims can be formulated as the following hypotheses:

(2) (a) In a test of Finnish inflection, the Estonian learners produce more correct answers than the Russian learners.

(b) The difference is due to the better performance of the Estonian group in words with the same or very similar meaning, stem and inflection in Estonian and in Finnish.

(c) No difference is expected between the Estonian and Russian groups for words with different inflection in Estonian and Finnish.

(d) The words with a similar stem and different inflection will produce the lowest number of correct answers in the Estonian group.

(e) For the Russian groups there are no consistent differences between the test word groups.

(f) The positive morphological L1 influence is greater among the Estonian advanced learners than among the Estonian beginners.

(g) For the Russian learners there is no difference between the advanced group and the beginners in relation to the various test word groups.

6. Methodological considerations

The methodological starting point of this study is the framework for investigating the first language influence envisioned by Jarvis (2000, 249–61). According to Jarvis, a unified rigorous methodological framework for the study of L1 influence would minimally consist of three components:

(3) (a) a theory-neutral definition of first language influence

(b) a concise but exhaustive statement of the types of evidence that must be considered when presenting a case for or against L1 influence

(c) a list of outside variables to be controlled for in any rigorous investigation of transfer

To overcome the lack of consensus concerning what L1 influence is and how it should be investigated, Jarvis (*op.cit.*, 252) has proposed a common working definition that is broad enough to subsume the diverse types of evidence for L1 influence and serve as methodological heuristic for transfer researchers across disciplines and across theoretical perspectives: "L1 influence refers to any instance of learner data where statistically significant relationships (or probability-based relation) is shown to exist between some feature of learners IL[2] performance and their L1 background". In addition to this definition, Jarvis suggests a list of specific types of L1 effects which must be examined:

(4) (a) intra-L1-group homogeneity in learners' L2 performance

(b) inter-L1-group heterogeneity in learners' L2 performance

(c) intra-L1-group congruity between learners' L1 and L2 performance

The first effect of L1 influence, intra-L1-group homogeneity, is found when learners who speak the same L1 behave in a uniform manner when using the L2. This type of evidence is necessary to show that learners from the same L1 background behave as a group with respect to the L2 feature.

[2] IL = interlanguage. In this paper this term is not used. The learner language—at whatever level—is called L2.

The second potential effect, inter-L1-heterogeneity, is found when comparable learners of a common L2 who speak different L1s diverge in their performance. This type of evidence strengthens the argument of L1 influence because it shows that the learners' behavior is not something that every learner does to the same degree or in the same way regardless of L1 background. The third effect of L1 influence, intra-L1-group congruity between learners' L1 and L2 performance, is found where learners' use of some L2 feature can be shown to parallel their use of a corresponding L1 feature. This type of evidence shows what it is in the L1 that motivates the learner's behavior. According to Jarvis (*op.cit.*, 255) methodological rigor that requires testing for all three potential effects "not only allows for the verification of L1 influence, but also provides for a fuller characterization of the nature, strength, pervasiveness, and independence or interdependence of L1 influence relative to other factors".

The list of variables that should ideally be controlled for (to be held constant or actively investigated) is formulated as follows (Jarvis *op.cit.*, 260–1):

(5) (a) age
(b) personality, motivation, and language aptitude
(c) social, educational, and cultural background
(d) language background (all previous L1s and L2s)
(e) type and amount of target language exposure
(f) target language proficiency
(g) language distance between the L1 and L2
(h) task type and area of language use
(i) prototypicality and markedness of the linguistic feature

This study attempts to apply the notions of the proposed methodological framework and to come closer to sufficient methodological rigor. The details are described in the following sections.

7. Informants

Two groups learning Finnish as a foreign language were recruited for this study: 30 Estonian secondary level students from Tartu and Kärdla in Estonia and 30 Russian secondary level students from St. Petersburg in Russia. All subjects are from monolingual homes and had had no contact

with Finnish outside the classroom. The languages of instruction were the L1s of the subjects: Estonian in Estonia and Russian in Russia.

Each group consisted of two subgroups: "beginners" and "advanced learners". Both Estonian and Russian beginners had started their Finnish studies when entering the secondary level at the age of 16–17. They had studied Finnish as a foreign language for about 200 hours at the time of the test. Thus they were "beginners" only in relation to the "advanced" group. The group of the Estonian advanced learners began their Finnish studies in the sixth form at the age of 12–13 and had studied Finnish for about 450 hours at the time of the test. The Russian advanced learners had started their Finnish studies in the first form. They were tested at the end of the ninth form at the age of 15–16, by which time they had studied Finnish for about 550 hours. Thus the extent of the L2 studies of the learners in both groups was reasonably comparable. The fact that the Russian advanced group had studied Finnish approximately 100 hours more than Estonian advanced learners is a little problematic in theory, but not in practice: the rate of introducing material in teaching at the beginning of the elementary school is understandably slower than at the end of the elementary school.

All the Estonian learners and most of the Russian learners had previously studied two Indo-European foreign languages: Estonian students English and German or English and Russian, Russian students English and Swedish. Some of the Russian learners had studied only one foreign language, English. Thus learners' foreign language background and also their social, educational, and cultural background were similar. The age range of the learners at the time of testing was 17–18 for the Estonian group and 15–17 for the Russian group. Both in Estonia and Russia Finnish studies are optional for students, so they were highly motivated.

It was more difficult to control such factors as the personality and language aptitude of the learners, but according to the teachers, each test group consisted of approximately the same proportion of so-called "good", "ordinary" and "weak" students. Thus one of the variable factors concerning learner (personality and language aptitude) is controlled indirectly and all others directly. In terms of a unified methodological framework, comparable test groups of Estonian and Russian students made it possible to examine two effects of L1 influence: intra-L1-group homogeneity and inter-L1-group heterogeneity in learners' performance.

To control the third effect of L1 influence, intra-L1-group congruity between learners' L1 and L2 performance, 12 Estonian and 25 Russian

students were also tested in their L1. The informant configuration is shown in Figure 2.

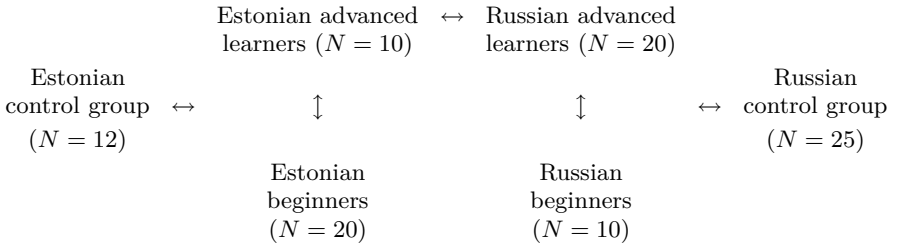

Fig. 2

The test groups and the control groups of the study

This article considers mainly the second effect of L1 influence, inter-L1-group heterogeneity in learners' performance. The first and the third types of evidence are used more as a background to ensure and demonstrate that both the Estonian and the Russian learners' L2 behavior within the group is homogeneous and that the performances in learners' L1 and L2 are congruent. Due to availability (Finnish is not commonly taught either in Estonian or Russian schools) the number of test subjects is quite small, making it impossible to analyze the results in terms of statistical significance but only in terms of probability-based relations.

8. Test tasks

The data were gathered by written and oral inflection tests. There were two different tasks in the written test. The learners were first asked to inflect 30 context-free words in the partitive, illative and elative plural. The cue form of the context-free words was the nominative singular, which is considered the basic form of Finnish nouns. The second task in the test was constructed so as to elicit the same plural forms of the test words in written narratives.

In exploring the L1 influence within inflectional morphology the possible effects arising from the interaction between other linguistic subsystems must also be considered. The influence may involve connections outside morphology as language learners may make interlingual identifications involving both semantic and phonological structures (Jarvis–Odlin 2000, 538). To account for this, all test words were bisyllabic and were chosen on the basis of both semantic and inflectional similarities and differences between Finnish and Estonian:

(6) (a) words having the same or very similar meaning, stem and inflection in the partitive, illative and elative plural of Finnish and Estonian (similar stem, similar inflection = SSSI), apart from the Finnish final sounds, e.g.,

F. *laine* 'wave'	*laineita*	*laineisiin* ∼ *-hin*	*laineista*
E. *laine*	*laineid*	*laineisse*	*laineist*

(b) words having different stems in Finnish and Estonian but a similar inflectional pattern in both languages (different stem, similar inflection = DSSI), e.g.,

F. *patsas* 'statue'	*patsaita*	*patsaisiin (-hin)*	*patsaista*
E. *kitsas* 'narrow'	*kitsaid*	*kitsaisse*	*kitsaist*

(c) words having the same or very similar meaning and stem in Finnish and Estonian, but different inflection (similar stem, different inflection = SSDI), e.g.,

F. *koulu* 'school'	*kouluja*	*kouluihin*	*kouluista*
E. *kool : kooli*	*koole*	*koolidesse*	*koolidest*

(d) words having both different stems and inflection in Finnish and Estonian (different stem, different inflection = DSDI), e.g.,

F. *veistos* 'sculpture'	*veistoksia*	*veistoksiin*	*veistoksista*
E. *skulptuur*	*skulptuure*	*skulptuuridesse*	*skulptuuridest*

Thus, with the first group of the test words (SSSI) Estonian learners can make interlingual identifications between L1 and L2 at three levels: at the level of phonology, morphology and semantics. The second group of the test words (DSSI) enables only phonological and morphological interlingual identifications, and the third group (SSDI) allows phonological and semantic identifications. In the fourth group of the test words there is no possibility for interlingual identifications between L1 and L2. It is important to emphasize that these identifications are not necessarily conscious: L1 influence may arise as an inert outcome of a shared conceptual system underlying both L1 and L2 structures. According to this view L1-based conceptual influence can take place even when the learner has not made any overt comparisons or interlingual identifications between L1 and L2 (Jarvis 2000, 250, 299).

The distance between L1 and L2 is consequently directly controlled. For Estonian learners there are areas of the L2 morphology that are similar to their first language, providing a distinct interface for transfer. For Russian learners there is no such link between the L1 and L2 morphological systems. The explanations for their results can only be based on the inflectional type, determined mainly by morphophonological cues, normally the last sound(s) of the word, or other factors, such as frequency, saliency, or productivity of the test words.

In each group of the test words there was one nonce word, for exploring how learners deal with words which are certain to be unknown to them, and one compound word for investigating word length effects.

The test for collecting Estonian L1 material resembles the Finnish language test. The informants were asked to inflect words in the partitive, illative and elative plural forms and to write a narrative where the same words are used. There were 23 Estonian words: 8 words of the SSSI group and 7 words of the SSDI group. Instead of the DSSI group there were 8 Estonian words with a phonological structure and inflectional pattern resembling the corresponding Finnish words, e.g., E. *koobas, vihje, kitsas* to replace Finnish *opas, ohje* and *patsas*. Instead of the nonce words similar real words were used, e.g., *kirgas* for *nirkas, rühm* for *syhmä*. Each group also had one compound word. The DSDI group could obviously not be included in the test. The Russian group was only asked to write a narrative as a similar inflection test cannot be constructed. The narrative was used to test how the informants express the functions of the partitive, illative, and elative cases in their mother tongue.

To gather data on differences between written and oral production, some of both the Estonian and the Russian informants performed the task of inflecting the context-free test words orally a few weeks before the written test. The learners were given the test sheet and they produced inflectional forms aloud. Their performances were tape-recorded. Yet another data-type consists of the comments of the learners on their processing. They were requested to think aloud while doing the written test and interviewed afterwards. All the instructions were given and the interviews conducted in the first language of the learners, in Estonian or in Russian. Thus the Estonian and the Russian learners had the same test tasks, as far as it is possible due to the differences between the languages, and did their test under the same conditions. The numbers of completed test performances are given in Table 2.

Thus seven out of the nine variable factors listed in (5) in section **6** are controlled directly in this study. The remaining two are indirectly controlled: personality and language aptitude by selecting an average class of students as subjects, and target language proficiency by defining it as the number of hours of instruction. The study also examines all the three possible effects of the first language influence (see (4) in section **6**), although the main attention is devoted to the second one, and the first and the third effect of the L1 influence are explored indirectly.

Table 2
The number of subjects in the various test tasks

	Written context-free words	Written narratives	Oral context-free words	Thinking aloud
Estonian	30	27	9	9
advanced learners	10	10		
beginners	20	17	9	9
Russian	30	30	4	3
advanced learners	20	20		
beginners	10	10	4	3
Estonian control group	12	12		
Russian control group		25		

In this article only the results of the written inflection tests of context-free words are discussed, due to limitations of space. The test results for inflection in other processing contexts confirm the conclusions (Kaivapalu 2005).

9. Results

The charts below present the results of the written inflection test: Finnish context-free nominals in three plural cases. The results of the two test groups (beginners and advanced learners together) are presented in Figure 3. The Estonian control group completed the task with no errors.

Figure 3 shows the percentage of correct answers[3] produced for the three test cases (partitive, illative, and elative plural) of Finnish nominals and the average across the cases. The main observation emerging from Figure 3 is the advantage of the Estonian learners where inflec-

[3] In this analysis "correct answer" refers to the corresponding plural form as given in the model word paradigms in *Suomen kielen perussanakirja* (PS 1990, XIV–XVII, the standard dictionary of Finnish). As the main aim of the analysis is to examine how the informants combine stem allomorphs and suffixes in the production process, errors of vowel harmony and the spelling of plosives have not been taken into account. In Estonian there is no vowel harmony which is a typical feature in Finnish. Also the spelling rules of plosives are different in Estonian and Finnish. The same principle is followed in the analysis of test answers of the Russian groups.

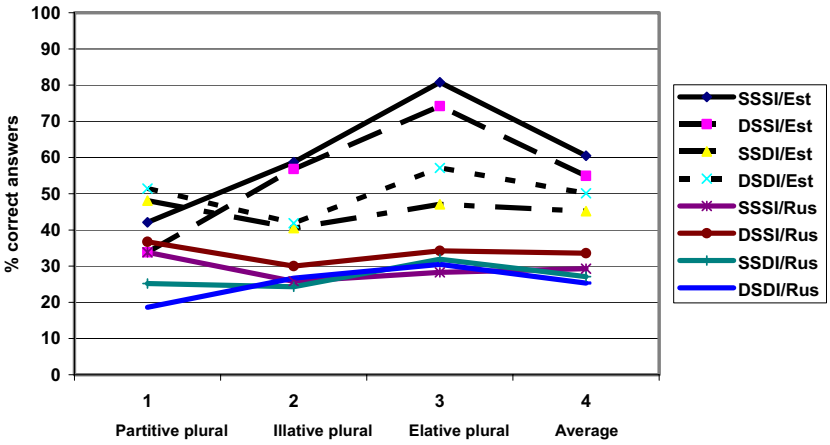

Fig. 3

The results of the Estonian ($N = 30$) and Russian ($N = 30$) learners of Finnish inflecting Finnish written context-free words

tional patterns in Estonian and Finnish converge: Estonian learners have inflected words of the SSSI- and DSSI-groups clearly better than other test words in the illative and elative plural. For Russian learners there is no significant difference between the word groups for these cases.

The positive influence of the first language morphology reaches its maximum when the L1 inflectional pattern best matches the L2 pattern. The first group of test words (SSSI) allows Estonian learners to make three types of interlingual identifications between L1 and L2: phonological, morphological and semantic. This (potentially conscious) comparison and analogy with the first language inflectional pattern produces the highest number of correct answers in L2. When learners can only make phonological and morphological interlingual identifications, as in the DSSI-group, the number of correct answers is somewhat lower than it is in the SSSI-group but still higher than in the test word groups where the inflectional patterns of L1 and L2 diverge (SSDI and DSDI).

The test results of the Estonian learners also support the hypothesis that words with the same meaning and a similar stem but different inflection in Estonian and Finnish (SSDI) will produce the lowest number of correct answers. The stem familiar from L1 leads learners to employ the (here misleading) L1 inflectional pattern. Consequently, interlingual identification by the learners at the level of morphology is necessary for the positive morphological L1 transfer.

Figure 4 presents the inflection test results of the Estonian and Russian advanced learners.

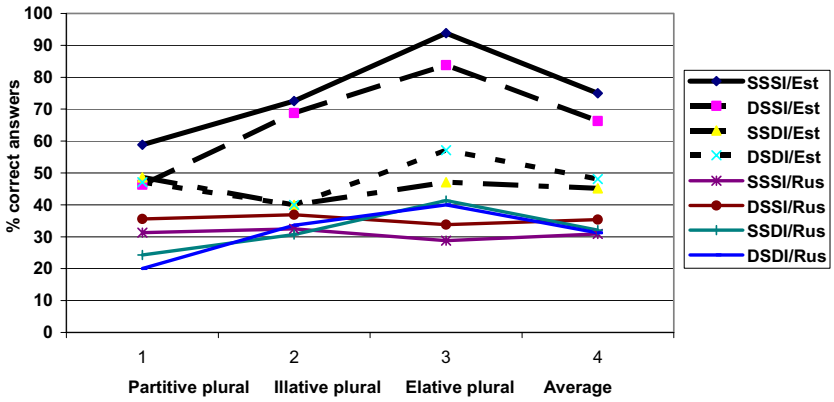

Fig. 4

The results of the Estonian ($N = 10$) and Russian ($N = 20$) advanced learners of Finnish inflecting Finnish written context-free words

The observations emerging from Figure 4 are the following:

1. The difference in inflection results between the inflectionally converging (SSSI and DSSI) and diverging (SSDI and DSDI) word groups is bigger for the Estonian advanced learners than it is for all the Estonian learners.
2. The results of the Estonian advanced learners for the inflectionally diverging word groups (SSDI and DSDI) are closer to the results of the Russian advanced learners in all word groups than they were when all learners were compared (Figure 3).

Figure 5 presents the inflection results of Estonian and Russian beginners. Figure 5 reveals the following:

1. For the Estonian beginners, the difference between word groups with converging (SSSI and DSSI) and diverging (SSDI and DSDI) inflectional patterns is much smaller than it is in results of the Estonian advanced learners, especially on the average across the cases.
2. The results of the Russian beginners for all the word groups and the results of the Estonian beginners for the word groups with diverging inflectional patterns are not as close as they are for the advanced learners.

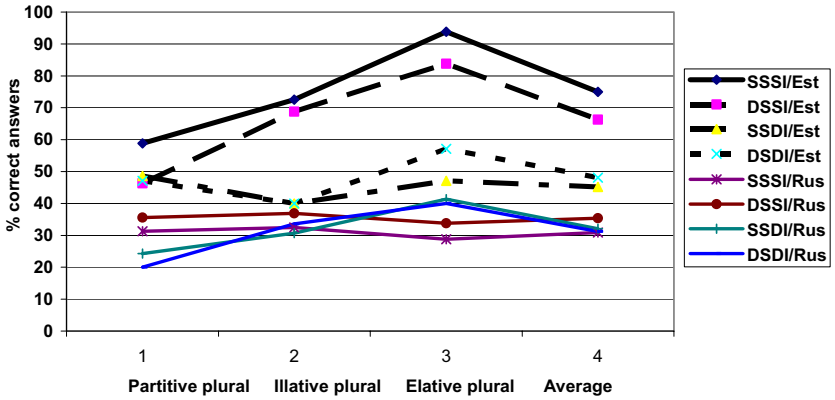

Fig. 5

The results of the Estonian ($N = 20$) and Russian ($N = 10$) beginners inflecting Finnish written context-free words

Comparing the results of the three test cases in the first two word groups (SSSI and DSSI), relevant to positive morphological L1 influence, significant differences arise between the results in Figures 3–5. The biggest difference in results between the converging (SSSI and DSSI) and diverging (SSDI and DSDI) word groups is in the elative plural. In the illative plural the differences are somewhat smaller. The results for the partitive plural are more complex: the advanced Estonian learners were able to utilize the converging inflectional patterns when producing SSSI-words, the words which make maximum interlingual identifications possible between L1 and L2. There is no L1 benefit in DSSI-words. Possible explanations for this observation as well as for other results of the study will be discussed in the next section.

The overall results for nonce words and compound words did not differ significantly from the results of existing two-syllable words (Kaivapalu 2005, 257–8).

10. Discussion

10.1. Transferability of bound morphology

The first aim of the study was to show that L1 influence can be found in the domain of acquisition of L2 bound inflectional morphology. The hypotheses in (2a–e) pertain to this aim. Hypothesis (2a) is clearly sup-

ported: the Estonian learners produce more correct answers than the Russian learners when all case forms are considered. This could be because of the generally higher level achieved by the Estonian learners during approximately the same amount of teaching of Finnish. However, the second and third hypotheses (2b–c) concerning L1 influence in the area with most potential for transfer (i.e., words with the same or a very similar meaning, stem and inflection in Estonian and in Finnish) and in the area with no potential for transfer (i.e., words with different inflection in Estonian and Finnish) are also supported. In other words, there is no doubt that positive transfer between L1 and L2 facilitates the learning of inflection.

Hypothesis (2d) assumes negative transfer for an area where semantic and phonological similarity exists but morphological does not. Evidence of negative transfer in this area is also found: the results for the SSDI group are the lowest of the four test word groups, even if they exceed the results of the Russian group.

The results of the Russian group are similar across the word groups, as expected, except for the partitive case. As the figures of correct partitive answers are also low for the Estonian learners, the differences between the cases deserve further discussion.

The test case with the best results, the elative plural of Finnish, involves only one possible morphological formative[4] (*-istA*), supported by the first language of Estonian learners. In the illative plural there were three possible formatives (*-ihin, -siin* and *-iin*) to choose from, none supported by L1, except for the general idea of combining a stem and a formative, common to all three languages. The most complicated case was the partitive plural: learners had to choose from three different morphological formatives (*-jA, -itA* and *-iA*). For Estonian learners the correct allomorph *-itA* converges with the respective formative of their first language. This formative is salient, but not as productive as *-jA*, which is the most productive and common partitive plural formative for two-syllable Finnish nouns (Niemi et al. 2001, 196). *-iA* is the most indeterminate as to expressing plurality: in some inflectional paradigms of Finnish *-iA* may occur at the end of singular partitive forms. The test responses of the Estonian learners (Kaivapalu 2005, 82) show that answers divide equally between the plural partive forms ending in *-jA* and those ending in *-itA*.

[4] The term *formative* here refers to the more or less transparent combination of plural marker and case suffix.

This situation gives rise to the expectation that the elative case should be the easiest for all learners, given that there is only one formative. As this formative also converges with the Estonian one, the results for Estonian learners should be better for elative than for other cases and better than those for Russian learners. This is true. For the Russian learners there is no difference between the elative and illative cases. The illative case results for Estonians are divided by the word type, as could be expected: even if the formatives differ, the words with a familiar stem are better inflected. The production of the partitive plural is more complex. There is no clear one-to-one relationship between form and meaning. This leads to somewhat random variation of the overall results.

The results of this study provide evidence of the transferability of bound morphology. They also suggest that both positive and negative first language influence have an important role in inflection at different stages of L2 learning.

10.2. Interaction between L1 influence and L2 proficiency

The second aim of the study was to explore the relationship between L1 influence and L2 proficiency. Hypothesis (2f) bears upon this relationship. A comparison of Figures 4 and 5 shows that, in addition to the generally better overall results of the advanced group, the difference between the converging and diverging word groups is clearly greater. Thus the advanced group is better able to take advantage of the L1 inflectional patterns for positive transfer. This result supports the notion of Giaccobbe (1992): the morphophonological, syntactic and semantic closeness of L1 and L2 does not benefit language learners until their L2 is sufficiently well developed for them to utilize the typological closeness or relatedness of the two languages. In other words, due to their similarity, the Estonian and Finnish morphological systems are at least partly overlapping in the minds of Estonian beginners while in the minds of the Estonian advanced learners the systems are increasingly separate.

Again, the partitive results differ from those of other cases. For the test words with maximum interlingual identifications between L1 and L2 (SSSI), the Estonian advanced learners overcome the complexity of the partitive plural inflection. In other word groups the results are less clear. The reason is the competition of different factors, such as word frequency, the strength of the morphophonological cue, the productivity and salience

of the morphological formative, and the properties of the L2 inflectional paradigm (Martin 1995, 186; Kaivapalu 2005, 284).

The final hypothesis (2g) on the lack of difference between the Russian beginners and advanced learners across the word groups is also supported. The overall results are somewhat higher in the advanced group, as could be expected, but there is no systematic relationship between the word group and L2 proficiency.

The role of negative L1 transfer in relation to L2 proficiency was also explored. No difference was found between the results of the Estonian advanced learners and Estonian beginners as to negative morphological L1 transfer: test words having the same meaning and similar stem but different inflection (SSDI) in Estonian and Finnish were misleading both for advanced learners and beginners.

The comparison of the test results of the Estonian and Russian beginners also reveals a general advantage (across test word groups) of learners with a closely related L1, especially at the early stages of L2 acquisition (Figure 5). Later this overall advantage decreases but the differences remain in the areas where the positive L1 transfer is possible (Figure 4), i.e., positive morphological L1 influence increases with L2 proficiency, while negative morphological L1 influence remains unchanged with increasing L2 proficiency.

It also becomes obvious that Jarvis' suggestion (2000, 246–7) for six possible relationships between L1 influence and L2 proficiency (see (1) in section **2**) is not detailed enough. As positive and negative transfer are not similar across the acquisitional stages, it is not possible to state whether L1 influence increases or decreases with increasing L2 proficiency without separating the two results of L1 influence. The present study demonstrates convincingly that separate exploration of positive and negative morphological L1 transfer is not only possible and worthwhile but also crucial as they lead to different directions in respect with the inflection results and act differently in different stages of L2 acquisition.

11. Conclusions

This article intends to contribute to the debate on the transferability of bound inflectional morphology and to confirm teachers' and researchers' anecdotal observations about positive L1 influence in learning closely related languages. An experimental study investigating the L2 production of inflectional morphology by learners with a closely related L1, in com-

parison with learners with a non-related L1, is reported. The results of the study provide evidence of the transferability of bound morphology.

On the basis of the results it is possible to conclude that the influence of the inflectional morphology of a closely related first language takes an active part in learning and processing foreign language morphological forms. It is important to emphasize that the first language influence of a closely related language is not a unitary phenomenon. There is more than one possibility for L1 influence in processing L2 morphological forms: interlingual identifications made by learners between L1 and L2 engender both positive and negative transfer from L1, depending on the convergence or divergence of L1 and L2 inflectional patterns and L2 proficiency.

The developmental path towards L2 proficiency can also be staked in relation to L1 influence. Three stages can be established on the basis of the results of the present study and the literature reviewed above (cf. the four phases of the acquisition of clitics, Towel–Hawkins 1994, 137):

(7) (a) in the first phase the convenient way of solving problems is to inflect the Finnish word in the Estonian way (for examples, see Sulkala 1996); the massive and unselective use of L1 (MacWhinney 1990)

(b) in the second phase the overgeneralization of the prototypical (salient, strong, frequent, unmarked) formatives (e.g., *-jA, -ihin*) is the strongest tendency; L2 system overcomes the L1 influence, or the L1 influence is random in nature

(c) in the third phase learners' L2 converges towards the target; L1 influence becomes more selective

In our study, both of the Estonian groups have passed the earliest phase. The group called "beginners" is at the second phase and the "advanced learners" are reaching the third phase.

In closely related languages like Finnish and Estonian, the L1 influence in inflectional morphology is considerably more positive than former studies have argued. This suggests that separate tackling of positive and negative L1 influence is methodologically necessary to avoid incomparability and inconsistency of research results regarding both the interaction between L1 influence and L2 proficiency and the nature of L1 influence in general.

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