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Acquisition of Locative Case Markers in Finno-Ugric languages: A case study on Finnish L2

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Abstract:

The aim of the paper is twofold: in the theoretical part we review the main proposals on the syntactic encoding of locatives and we sketch a new formalization which we fully develop in related work (Bellucci, Dal Pozzo, Franco, Manzini, in preparation); in the experimental part novel data on the acquisition of locative case markers by L2 lower-intermediate Finnish speakers, native speakers of Italian is discussed. The language combination we have chosen may be revealing in more than one respect: in Finnish four locative cases (inessive, illative-the so-called internal cases- and adessive and allative- the so-called external cases) broadly correspond to the Italian preposition *a* which can be used to express both stativity and directionality. We created a written translation task aimed at eliciting the locatives cases in the L2. Interestingly the L2 grammar is sensitive to the different properties of internal vs. external cases and stative vs. directional cases (non-native-like behaviour is also attested). A clear difference is found between stative and directional cases in the L2, a pattern already attested in Finnish L1 and atypical acquisition. Moreover, a difference is observed between internal and external cases, adding new evidence to previous findings.

Keywords: Finnish Locative Cases, Finnish L2 Acquisition, Spatial Relations

1. *Introduction*[*]

Case (and case assignment) has been one of the most debated topics since the early days of the generative enterprise (Chomsky 1981; for a recent

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overview of topics in case theory within GB and Minimalism see Bobaljik and Wurmbrand 2008). In our view, the cross-linguistic study of the acquisition of case across different populations can be a very fruitful area of research: it can shed light on the nature of case by showing how (and to what extent) competing theoretical models fare with the acquisition data. With the present paper we want to join the debate around the notion of case by providing psycholinguistic evidence on the acquisition of locative case markers by L2 speakers of Finnish with Italian as L1. Investigating locative (oblique) case experimentally in an L2 population seems crucial in the light of the fact that a number of studies have looked at how children acquire the structural vs. lexical case divide in their L1 (Schütze and Wexler 1996a on L1 English), but few studies have examined the acquisition of locatives (and motion verbs more generally) in a second language (Juffs 1996; Inagaki 2002 on L1 Japanese L2 speakers of English).

The choice of the particular L1 Italian/L2 Finnish language combination is not accidental. We are interested in comparing two languages which cut up the (locative) conceptual space in rather different ways.

Our starting point is an observation originally formalized by Fillmore (1968) according to which oblique cases are the morphological counterpart of prepositions. Under this perspective, it becomes interesting to show which target and non-target patterns emerge when lower-intermediate L2 learners are faced with the task of acquiring a different way of syntactically encoding basic motion/stative locative meanings in the target language. In other words, we expect that L1 speakers of Italian might have difficulties in tuning into a target language like Finnish which crucially expresses location and motion by means of dedicated locative case markers rather than via Italian-like locative prepositions. Our study becomes all the more relevant in the acquisition literature since to the best of our knowledge the acquisition of locative case markers in L2 Finnish has not yet been investigated within the generative framework.

The article is structured as follows: Section 2 provides the reader with the relevant background. In Section 2.1, we describe the Finnish case system. In Section 2.2 we briefly discuss the status of structural case; in Section 2.3, we discuss previous research on spatial cases and relations in Finnish, taking into account in particular the work of Asbury (2006), Svenonius (2006), Pantcheva (2011) and Manzini *et al.* (2016). In Section 3, we review some relevant literature on the category P, with a special focus on the Italian locative preposition *a* which concerns us more directly in the paper. Section 4 presents our proposal which consists in analysing the *-l/-s* locative morphemes of Finnish locative cases as specializations of the fundamental oblique ($\subseteq$). In other words, locatives can in this sense be considered as specialization of the basic inclusion ($\subseteq$) relation. In Section 5, we turn to acquisition. We briefly report on existing studies, though within different frameworks, on Finnish L2 and we also report previous findings on the acquisition of locative case markers by Finnish typically developing children, SLIs and agrammatic patients. Section 6 presents the experimental design and the participants to the study. In Section 7, we move to the discussion of the results in the light of our proposal. Section 8 concludes the paper.

2. *Background on Finnish and locative cases*

2.1 *The Finnish Case System: the paradigm*

In the present section we offer an overview of the Finnish case paradigm, focusing on locative cases in particular. As schematized in Table 1, Finnish has a rather complex case system featuring up to fifteen cases generally classified in structural or grammatical (nominative, genitive, accusative, partitive), semantic (the local cases) and marginal cases (Karlsson 1999, Kiparsky 2001). Local cases, which are the object of our investigation, can be subclassified in external, internal and general local cases. Note that the terms 'internal' and 'external' do not refer to thematic positions. Rather, they are just descriptive labels which we use in order to present the Finnish way of cutting up the conceptual space. In Finnish, the physical properties of the location that includes the element whose location is evaluated play a crucial role. The splits between state-in/motion-to/and motion-from yield a six-way locative case system. Depending on whether the location is bounded or unbounded ('internal' like a school or 'external' like a lake) different case markers will be selected to express stativity (state-in) or directionality (motion-to).

We will focus our attention on 4 locative cases, excluding the elative and ablative cases (motion-from) from further investigation. Illative is the case which expresses motion to an internal location. Allative is the case that is used to express motion to an external location. Adessive in turn is used to express stativity, in an external location. Finally, inessive is the corresponding internal stative case.

Table 1. Finnish Nominal Case Paradigm (Adapted from Karlsson 1999)

	talo 'house'	Case gloss
Nominative	talo	basic form
Accusative	talo, talo-n	direct object
Genitive	talo-n	possessor
Partitive	talo-a	indefinite quantity/atelic
Inessive	talo-ssa	'in a/the house'
Elative	talo-sta	'from/the house'
Illative	talo-on	'to a/the house'
Adessive	talo-lla	'at a/the house'
Ablative	talo-lta	'from a/the house'
Allative	talo-lle	'to a/the house'

2.1.1 *Breaking down the Finnish Case system: Structural cases*

There is a long-standing debate which has not settled yet around the inventory of structural cases in Finnish. As already mentioned, in this paper we are mainly concerned with the status of the different locative cases, therefore in this Section we will only briefly review some relevant works in the literature. In generative linguistics it is standardly assumed that Nominative and Accusative are the canonical structural cases (Chomsky 1981, 1995). However, theorists do not agree on the status of accusative in Finnish. Accusative exhibits a tripartite marking including: zero-marking in (1a); the *-t* ending only showing up on personal pronouns (and in plural forms) in (1b); and the *-n* ending which is syncretic with the genitive (possessor case) in (1c). The *-t* ending on pronominal objects is also identical with the plural morpheme showing up on lexical DPs in the nominative and accusative.

(1) a. Syö omena!
eat-IMP.2p.sg. apple-ACC-0
'Eat a/the apple!'

b. Näin hänet kadulla.
see-PAST.1p.sg. s/he-ACC street-ADE
'I saw her/him on the street'

c. Ostin kirjan.
buy-PAST.1p.sg. book-ACC
'I bought a book.'

Asbury (2006) correctly observes that if we add the genitive of possession structures into the picture, we see that in these contexts both lexical DPs and pronouns are inflected for the genitive *-n*. This can be taken as an indication of the fact that the *-t* marking found on pronouns is the real accusative, a fully distinct case which is employed for the marking of internal arguments.

Let us now turn to partitive. Interestingly, in Finnish partitive alternates with nominative on subjects and with accusative on objects, where the interpretation conveyed has to do with indefinite quantity or negation (Karlsson 1999). On the basis of this observation a number of scholars have analyzed partitive as structural case. Vainikka (1993) argues that it is the case that is assigned in complement position and Karlsson (1999) descriptively numbers partitive amongst the 'grammatical cases'. However as Asbury (2006) notes, analyzing partitive as structural case is not unproblematic because such an analysis implies claiming that Finnish has a structural case that is not typically found in other languages. Proposing that partitive in Finnish is an inherent case in turn is not straightforward either, since its syntactic behavior doesn't fully match the one of prototypical instances of inherent case marking where

selection is determined by the verb. For a recent overview of the pending issues revolving around partitives in a crosslinguistic perspective we refer the reader to Luraghi and Huumo (2014).

Genitive in turn is commonly regarded as the possessor case (Karlsson 1999; Kiparsky 2001; Asbury 2006). Asbury (2006) applies and extends the insights of Déchaine and Wiltschko (2002) on the nature of the pronominal system in Halkomelem to the Finnish case paradigm. In a nutshell, she proposes that Finnish morphological cases spell-out different extended projections of the noun: P (spatial cases), Q (partitive *-a*), D (genitive *-n*), ϕ (accusative *-t*), N (nominative -Ø). Her proposal is intuitively appealing and has one desirable feature, namely it decomposes Finnish morphological cases treating them as the spell out of categories/projections that are independently needed in the theory. Whether such decomposition happens in the morphology as the author argues, or whether it happens in the syntax is an arguable issue which crucially depends on one's theoretical assumptions. Though we believe that Asbury's (2006) proposal might work for a language like Finnish, we are not sure about how the proposal would fare with the genitive patterns of other languages. In particular, as far as we can see, saying that genitive is the spell-out of D, fails to account for the well-known genitive-dative syncretism of Latin or Slavic. If genitive is just the spell out of D, why would it overlap with the dative so frequently in natural languages? Datives have been shown to have widera different syntactic scope with respect to genitives, in other words, the former belong to the vP/VP domain, whereas the latter target the DP domain (Kayne 1975; Boneh and Nash 2011; Cuervo 2003; Manzini and Savoia 2011; Manzini *et al.* 2016).

Recently Manzini *et al.* (2016) have put forth a proposal concerning the status of dative (and genitive) arguments which maintains the fundamental insight of placing genitives in the DP domain but at the same time it provides a principled explanation for the attested genitive-dative syncretism. What Manzini *et al.* (2016) basically propose on the basis of empirical evidence coming primarily from different Romance varieties is that genitives target the D domain, datives can scope up to the vP projection, yet they are often syncretic in Latin and Romance because they ultimately share a common conceptual core, amounting to the possession or part-whole relation. Genitives and datives are analyzed as different instantiations of the (same) basic part-whole relation. That datives are formally linked to possession has been independently argued for in the literature (e.g. Kayne 1989; Pesetsky 1995; Belvin and Den Dikken 1997 a.o.). We will return to Manzini *et al.* (2016)'s work in the next Section when we will discuss the properties of the Italian preposition *a* 'to' which is both compatible with a dative and a locative interpretation. Furthermore in Section 4 we will sketch an analysis of the Finnish locative cases in the spirit of Manzini *et al.* (2016).

2.1.2 *Breaking down the Finnish Case system: Spatial cases*

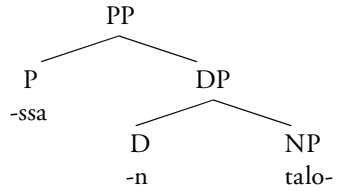
2.1.2.1 *Asbury (2006): Finnish spatial cases as the spell-out of Ps*

In her 2006 paper, Asbury analyzes Finnish locative cases as the spell-out of P. Her argument crucially relies on the ill-formedness of structures like (2a) below. The noun talo can't be inflected for both genitive and inessive. Asbury is well-aware of the fact that this one-slot restriction can be language-specific, indeed she mentions Lezgian as a good example of a language which displays case-stacking.

(2) a. *talo-n-ssa
house-GEN-INESS
in the house.'
b. talo-ssa
house-INESS
'in the/a house.'

In (3) we report Asbury's formalization of a locative case-marked NP in Finnish. The author observes that instead of spelling out all suffixes in such a structure, only the P is spelt out. This in turn leads Asbury to propose that there is competition for morphological realization. Only one slot is available on the noun for realization of a functional projection and morphological Fusion (in the sense of Distributed Morphology (DM)) takes place amongst the functional projections. The highest projection that is present wins, so D is not spelled out when P is present.

(3)



(Asbury 2006: 27)

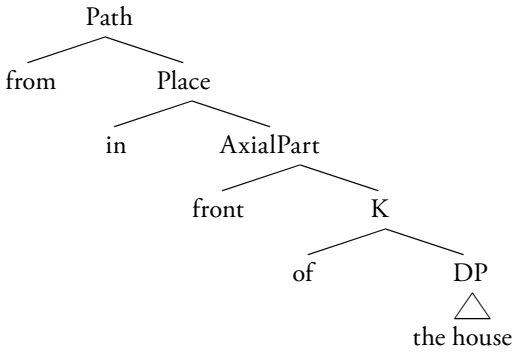
Furthermore, following Manzini and Savoia (2005) and subsequent works we embrace the view that it is neither unproblematic nor desirable to separate the morphological component from core syntax in the way of DM. We refer the reader to the previously quoted works for an overview of arguments in support of the claim that morphology and syntax can be unified

in a minimalist perspective, in that for structure building purposes both the former and the latter resort to the same core operation Merge (a view shared by DM), but crucially no special morphological operations (Fusion, Fission, Impoverishment) are allowed.

2.1.2.2 *Nanosyntactic approaches to locatives in Finnish: Svenonius (2007, 2010) and Pantcheva (2011)*

Before turning to two nanosyntactic works which deal with Finnish locative cases let us first introduce some useful terminology. In a Figure/Ground configuration (Talmy 1991, 2000) the Ground is the reference object/entity with respect to which location/motion/path of another entity is evaluated. The Figure is the object/entity involved in the motion/location event. As for the Axial Parts, these correspond to elements such as *near, beside, bottom, top, front* etc.; they are typically developed from nouns (Svenonius 2006). Axial Parts take the oblique introducing-elements (K) as their complements and as external argument the projection of locative expressions: *in, on* etc. The semantic function of AxPart would be to identify a region (a set of points/vectors in space, cf. Zwart 1995; Kracht 2002) based on the Ground item (i.e. the complement DP). Svenonius's (2007, 2010) proposal assumes that spatial prepositional elements can be further decomposed in the syntax into (at least) Path and Place with Place embedded under Path as shown in (4).

(4)



(Svenonius 2007: 2)

While Place elements give information about the physical configuration of the relationship between a Figure and a Ground, Path elements give information about a trajectory and specify whether a Place is to be interpreted as a goal or a source. In English, the preposition *to* has been argued to be a (telic) Path head (Koopman 2010; Svenonius 2010) while *at* lexicalises Place. One

diagnostic that illustrates this contrast is shown in (5). Place heads can be selected by stative verbs, but the dynamic preposition *to* cannot.

(5) a. John is at the store.
b. *John is to the store.

For what concerns the Path vs. Place distinction in Finnish, Svenonius (2006) assumes that a locally case-inflected noun like *talossa* 'in a house' is a PP, more precisely at least a PlaceP and possibly a PathP (see Svenonius 2004b on the issue whether locative PPs project higher than Place). The K projection in turn, takes the DP as its complement. This projection typically hosts inflectional or non-inflectional elements which are compatible with the semantics of genitive case cf. *of* in (4). We believe that Svenonius' (2007) formalization is theoretically sound. It proves to be empirically adequate and it is fully compatible with our own model. A crucial difference might however be worth mentioning at this point. We depart from nanosyntactic approaches in that we adopt Early Insertion rather than Late Insertion of the terminals/lexical items in the core syntax.

Furthermore, as we will show, the Finnish L2 data cannot be fully captured by this nanosyntactic model. Pantcheva (2011) extends Svenonius' original insights regarding the mapping between the syntax and the semantics of spatial expressions. In her dissertation Pantcheva attempts to argue for a fine-grained decomposition of Path much in the spirit of Nanosyntax (Starke 2009) building on evidence coming from a good number of (also typologically unrelated) different languages such as Uzbek and crucially Finnish. Pantcheva (2011) argues that spatial markers are compositional in Finnish, with the important exception of *-(h)Vn*, the illative locative marker, which is no longer morphologically transparent. Following Comrie (1999) and Svenonius (2006), Pantcheva suggests that Finnish has two 'series markers': *-s* 'in' and *-l* 'on.' These series markers combine with the Locative ending -CA to express Location (where C copies the preceding consonant and the vowel A is subject to vowel harmony and alternates between *a* and ä). To express Goal, the marker -Ce attaches to the series marker. Table (2) below summarizes Pantcheva's (2011) decomposition of Finnish locative cases.

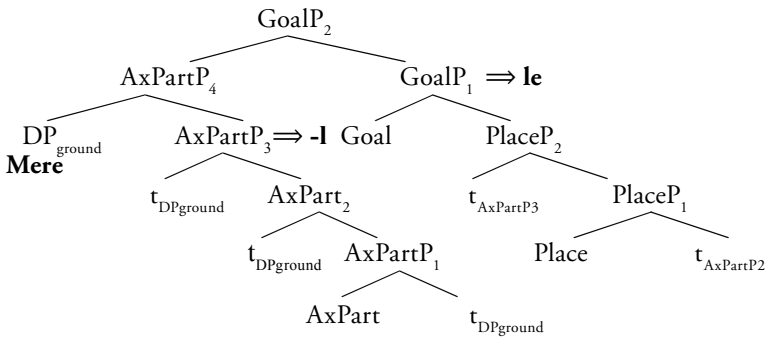
Table 2. The Finnish locative system in Pantcheva (2011)

Series		Location	Goal	Source
IN	-s	-s-CA	-(h)Vn	-s-tA
ON	-l	-l-CA	-l-Ce	-l-TA

In (6) we show the derivation for the Finnish NP *merelle*, inflected for allative case. Note that the allative case is syncretic with the dative. In other words, DP dative arguments (with a beneficiary semantic role) are marked

with the allative. We will return to this point when discussing Manzini *et al.*'s (2016) analysis of datives.[1]

(6) mere-lle
sea-ALL
'to the seaside'



(adapted from Pantcheva 2011)

The derivation is rather complex as it involves quite a number of projections. It crucially relies on Spell-Out driven movement (along the lines of Starke 2011) according to which the shape of a lexical entry can trigger movement of a syntactic constituent such that the right configuration for insertion is created. The expansion of the nodes in the derivations can be seen as a direct consequence of the adoption of Spell-Out driven movement. That movement comes for free, and that stretching out syntactic trees is unproblematic is not to be taken for granted as these issues are currently debated in the literature (Neeleman 2015). Another potential problem that Pantcheva's account faces has to do with the fact that terminals are allowed to spell out constituents of variable size. For example, in order to merge a GoalP, PlaceP and Axial PartP have to necessarily be projected as well. It is by no means clear why we would want to project the latter. It is also not clear in our view what the interpretive import due to the presence of the Axial Part P would be in the derivation of *merelle* 'to the seaside' in (6) above. Finally, Pantcheva's analysis of the *-l* and *-s* series as Axial Part elements could also run into problems since Bellucci *et al.* (in preparation) show that crosslinguistically Axial Parts are nominal in nature and they are in general either mono or bi-morphemic. Thus, it could be problematic to assume that Finnish involves submorphemic AxialParts.

[1] Accounting for the proximity between the locative allative case and the 'dative' allative case of Finnish will become crucial for the explanation of the L2 Finnish data.

3. *The debate on the category P*

In the previous Section we have examined the relevant formal literature on (the syntax of) locative case markers. Let us now address the status of (locative) prepositions. In the theoretical literature several proposal have been advanced in order to account for the status of prepositions. The main divide between different approaches has to do with the issue of interpretability. One set of approaches (broadly DM-oriented approaches and the Applicative literature) assumes that prepositions, on a par with case, are radically uninterpretable. Prepositions must check their features against some abstract functional head in order to be licensed. Similarly, oblique case is the reflex of an underlying Agreement relation with some functional head. Another set of approaches (Manzini and Savoia 2011a; Manzini and Franco 2016) argue that (oblique) case and (locative prepositions) are interpretable, and defend the idea that a common conceptual core can be individuated, specifically possession.

Let us review the Applicative literature first. Under this approach, non-core (dative) arguments are introduced into VP by special applicative heads. Applicative functional heads introduce a DP, which is structurally and semantically related to a constituent c-commanded by it. Following Marantz's (1993) and Pylkkänen's (2008) work, applicative heads are divided into two different types: high, which denote a relation between an event and an individual, syntactically attaching above the VP, and low, denoting a relation between two individuals, syntactically attaching below VP. The preposition à/a in Romance has notably been analyzed as the spell-out of an ApplicativeP projection (Cuervo 2003 building on Spanish, Boneh and Nash 2012 for French). The main problems with such applicative treatments has to do with the fact that in true applicative languages, i.e. Bantu languages for instance (Pylkkänen 2008), Appl heads are overtly realized by verbal rather than prepositional morphology, therefore it is not clear what the morphological counterpart of Applicatives would be in Romance.

There are other approaches which maintain with the Applicative literature that prepositions (and case) are radically uninterpretable i.e. they are the reflex of agreement with a functional head. DM-based proposals typically emphasize the lexical vs. functional divide and heavily rely on abstract/functional heads. Under DM approaches (Halle and Marantz 1993), locative prepositions are nothing but feature bundles. There are no such objects as Ps in the numeration/lexicon. (Lexical) roots enter the narrow syntax devoid of any morphophonological or semantic information. The actual phonological terminals corresponding to abstract features are only inserted after a level of morphological structure where readjustment rules apply (Late Insertion). Lexicalist approaches instead assume that Ps are lexical items which enter the narrow syntax with their categorial and selectional features which will be checked off/valued during the course of the derivation. Under this approach

the computational burden is placed in the narrow syntax rather than in a separate morphological component. This set of approaches assumes that Early Insertion of the lexical material applies.

Recently Wood and Marantz (2015) have put forth a proposal whose aim is to reduce the inventory of functional heads with which syntactic structures are built via Merge. The authors argue that syntactic heads crucially involved in the interpretation of argument structure-heads like *v*, Voice, *p* and Appl, as in (7), are subject to contextual allosemy at the semantics interface. Each head may have a particular range of meaning (including an expletive meaning), depending on the syntactic context. Under this perspective, syntactic heads do not carry certain features relevant to their interpretation, rather, the features are computed contextually at the point of semantic interpretation.

(7) a. Voice introduces the external arguments of vPs (often agents)
b. low Appl introduce an argument related to a DP
c. little *p* introduces the external arguments of PPs (figures)
d. Prepositions introduce non-core arguments in a manner syntactically different from high Appl
e. high Appl introduces a non-core argument

(Wood and Marantz 2015:2)

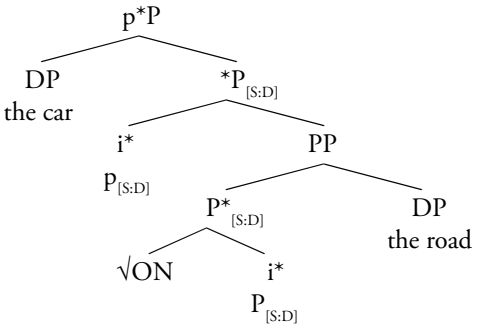
The range of argument introducing heads listed in (7) is reduced to a single argument introducer which is labeled i*. The differences between apparently different uses of i* are imputed to rules that are sensitive to the syntactic context in which it occurs. In other words, from a syntactic point of view, there is a single argument-introducing head, i*, categorially unspecified which selects for a syntactic constituent of category D (the D-selecting property being the defining property of argument-introducing heads). The interpretive differences between what are traditionally viewed as distinct heads are now cast in terms of contextually determined interpretation rules of the type indicated in (8). i* will therefore variably introduce figures or agents depending on the relevant syntactic context.

(8) a. ⟦i*⟧ ↔λx λs. FIGURE(x,s)/ ___(locative PP)
b. ⟦i*⟧ ↔λx λe. AGENT(x,e)/ ___(agentive vP)

Let us now focus on the case of P which is more directly relevant for the purposes of the present article. Under this approach, $P_{[S:D]}$ is a head of category P that selects (S) for a constituent of category D. Since i* is categorially unspecified it does not start out with a categorial feature but rather is a feature bundle like {[CAT:_], [S:D]}, where the underscore indicates an unvalued CAT(egory) feature; i* is a notation standing for this feature bundle. Let us now state more explicitly the main technical details of this proposal:

First, i* can merge with a variety of syntactic categories, so its interpretation is read off of its structural position. Second, the categorial feature of i* may be valued by the first or the second constituent it merges with. Third, lexical roots may adjoin to i*; the adjoining of a lexical root to i* will affect the interpretation of i*. In (9) we illustrate how the derivation of a pP small clause involving a locative preposition such as *the car on the road* works.

(9)



First, √ON adjoins to i*. This i* merges with the DP *the road* satisfying the selectional [S:D] feature; at this point the categorial value of i* is valued as P, so it projects a PP. Then another i* merges with this PP, which values i*'s categorial feature as *p*, resulting in $p_{[S:D]}$. Since the selectional feature [S:D] has not been checked yet, the resulting constituent is $p^*P_{[S:D]}$, a pP that c-selects a constituent of category D. Finally the DP the car merges with the $p^*P_{[S:D]}$ to form a p*P. The interpretive rule in (8a) applies so that *the car* is interpreted as a figure of the spatial relation introduced by the locative preposition *on*. To sum up, the lexical roots of prepositions adjoin to i* to form a DP selecting preposition. When this i* merges with a DP, its selectional feature may or may not be checked. When it is checked the categorial feature of i* is automatically valued as P. What we are left with is thus a configurational definition of a preposition: a preposition is an i* that checks its selectional features without valuing its categorial feature. The lexical semantics of the preposition doesn't stem directly from the preposition itself but rather from the root or from the contextually-determined interpretations of i* in the context of the root. Thus, *in* is different from *on* because the root √IN has or conditions different semantics from the root √ON.

Let us now evaluate the proposal in some detail. We believe that a parsimonius inventory of functional categories is desirable in any theory of syntax and it is much in the spirit of the Minimalist enterprise (Chomsky 1995 ff.). However, we wonder whether Wood and Marantz's recent unifying proposal successfully achieves the goal of dispensing with some of the generally assumed argument-introducing heads. The picture that arises seems to be one in which narrow syntax is minimally simple; however, keeping the narrow syntax simple implies burdening the LF component which must feature context-sensitive

interpretive rules. All the different functional heads Voice, *p*, low Appl, high Appl and P are reanalyzed in terms of instances of bare i* merging with different categories i.e. vPs, PPs and so on. However, the various instances of bare i* are not exactly parallel in the different syntactic contexts as far as we can see. If we want to maintain that there is a single argument-introducing head, this might be a problem.

For instance, in the case of prepositions, Wood and Marantz assume that lexical roots are adjoined to an instance of i* that checks its selectional D feature but is categorially unspecified. In its *p* version instead, bare i* is a syntactic object which merges with a PP which values its categorial feature as *p*. This *p* needs to select/take a figure/external argument so the remaining selectional D features can be checked off. How does the syntax know that the adjoining of the lexical root is only compatible with the categorially unspecified instance of i*? In other words, assuming that the categorial feature of i* may be valued by the first or by the second constituent it merges with might pose a look ahead problem. The fact of having i*'s categorial features optionally being checked off either during the first or the second application of Merge seems a technical solution, that ultimately ensures that the merger of a *p* to the structure (in its i* version) is different than the one of a P-like element, by virtue of the differences in terms of (time of) checking of the respective categorial features. If that is the case, the status of i* as the single argument-introducing head is potentially undermined.

This DM treatment of prepositions as feature bundles might straightforwardly account for the semantically vacuous uses of prepositions (i.e. *of*) as pointed out in a footnote by the authors. However, the locative uses of prepositions, which concern us directly here, reveal that at least in some syntactic contexts, the semantic content of prepositions cannot be completely overlooked, for instance in the examples from Italian in (10) below.

(10) a. Vengo a casa.
I.come to home
'I come home'
b. Vengo da casa.
I.come from home
'I come from home'

Finally, let us observe that this model fails to capture the formal parallel between the locative uses of prepositions in languages like Italian and the use of dedicated case morphemes in order to express the same range of meanings in languages like Finnish. This broad typological distinction cannot be so easily accounted for by a model which analyses prepositions in terms of i*, unless the K(ase) Phrase is also (presumably) seen as yet another instance of i*.

Let us now discuss a different approach to the syntax of locative prepositions. We have already mentioned that there are proposals in the literature that assume that prepositions are interpretable. In what follows we will extend the treatment of genitives and datives developed in Manzini and Savoia (2011a), Manzini and Franco for DOM to the locative preposition *a*. The starting point is an intuition originally formalized by Fillmore (1968), is that oblique case is the inflectional counterpart of prepositions (English *to* = dative, English *of* = genitive, etc.). If a preposition is a predicate introducing a relation between the argument it selects and another argument, so therefore is oblique case. If we say that (oblique) case has a relational content (it is effectively an inflectional counterpart of elementary predicates like Ps), then it is evident that we take the category case, or to be more precise oblique case, to be interpretable - i.e. endowed with some interpretive content, albeit elementary. Let us consider the examples from Italian in (11). In languages without case inflections, genitive and dative are lexicalized by prepositions, for instance Italian *di* 'of' or *a* 'to'.

(11) a. Ho dato il libro a Gianni
I. have given the book to Gianni
'I have given Gianni the book'
b. Il libro di Gianni
the book of Gianni
'Gianni's book' *Italian*

The preposition *di* in (11b) is canonically taken to introduce the possession relation between 'Gianni' and 'the book'. That 'possession' is in fact a surface manifestation of the more elementary part-whole relation has been independently established in the literature. Belvin and den Dikken (1997: 170) define the relation introduced by 'have' as 'zonal inclusion' in the following terms: "the 'meaning' of have […] denotes a special kind of inclusion relation […] dubbed 'zonal inclusion'[…] Entities have various zones associated with them, such that an object or eventuality may be included in a zone associated with an entity without being physically contained in that entity […] The type of zones which may be associated with an entity will vary with the entity". Boneh and Sichel (2010) take the Part-Whole relation to be the conceptual core of partitives (e.g. 'three of them') and of inalienable possession (e.g. 'John's nose') - though they factor out alienable possession (e.g. 'John's car'). Thus, the Romance *a* preposition (or dative case) establishes a possession (or inclusion, or part/whole) relation between the argument it embeds (the whole or possessor) and the theme of a transitive verb - at least in so far as goal datives are concerned.

Let us now turn to locative prepositions. In Italian as shown in (12) state and motion-to can be variably lexicalized by the *a* or the *in* preposition; *a* is the generic locative preposition, while *in* denotes a proper containment relation.

(12) Sono/Vado a/in casa
I.am I.go to/in home
'I am/I go home'

We treat *a* as a locative specialization of the elementary predicate which we notate Loc ⊆. Under this approach possession rather than location is the relevant primitive (*contra* Freeze 1992). What the locative preposition *a* does in (13) is imposing a locative restriction on the basic inclusion relation.

(13) [$_{VP}$ sono/vado [$_{PP(Loc\subseteq)}$ in/a casa]]
I.am I.go to/in home
'I am/I go home'

In the next paragraph we will adopt the same line of reasoning in the analysis of the spatial cases of Finnish. As we shall see, it might turn out that natural languages can feature even more fine-grained locative specializations of the basic ⊆ relation, Finnish seems a case in point.

4. *The present proposal*

In the previous Sections we have reviewed some of the theoretical literature on the Finnish (locative) case systems and on prepositions. A crucial observation that we have made for Finnish, is that undeniably, there is a one-to-one mapping between different locative case forms and different locative meanings. We have also pointed out that the choice of the dedicated locative ending in Finnish will crucially depend on the actual properties of the Ground object (Talmy 1991, 2000). In particular, if the Ground object qualifies as a unbounded or external location (for example the noun *järvi* 'lake') then it will be solely inflected for what have been traditionally called the external cases i.e. allative *-lle* and adessive *-lla/-llä*, whereas if it is a bounded or internal location (such as *museo* 'museum') it will only be inflected for the internal cases, i.e. illative *-V(h)n* and inessive *-ssa*.

In this section we will sketch a proposal regarding the syntax of the locative cases in Finnish. Research on adpositions has shown that local case suffixes (e.g. Finnish adessive *-lla /-llä* 'on, at', allative *-lle* 'to, onto') spell out P (Fillmore 1968; Emonds 1985; but see Bobaljik 1995 for a different view). There is a growing body of research in theoretical syntax that seeks to explain the underlying formal similarities and differences between prototypical prepositions (e.g. English *in, to* etc.), adpositions/postpositions (e.g. *next,* Svenonius 2006), locative cases (such as the inessive *-ssa* in Finnish), prefixes (Dutch *in*) and particles. An even stronger claim about the status of P has been investigated in the literature, namely whether locative cases, locative adpositions prefixes

and particles should not all be considered members of the P category. For instance Asbury *et al.* (2006) investigate this range of structures in Hungarian and Finnish and they correctly note that this range of phenomena pattern alike syntactically in a number of important respects, therefore there might be evidence in support of a unifying approach. However, Bellucci *et al.* (in preparation) point out that once a wider range of Finno-Ugric varieties is brought into the picture a unifying approach is no longer feasible (i.e. there are reasons to believe that at least adpositions/AxParts must be factored out).

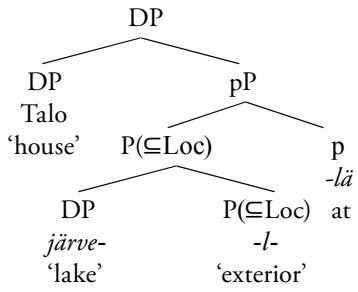
The authors extend Manzini *et al.* (2016) treatment of genitive/dative case to the analysis of locatives in Uralic.

Following Manzini *et al.* (2016), who treat (genitive/dative) case morphemes as (elementary) predicates introducing a relation between the argument they selects and another argument, in Bellucci *et al.* (in preparation) a proposal concerning the syntax of Finnish locative case system is developed. The proximity of dative/genitive and locative specifications, corresponding to frequent syncretic lexicalizations of dative and locative is also addressed. The main point that is made in the Bellucci *et. al* (in preparation) work is that the *-ll-s* locative morphemes of Finnish (Ylikoski 2011) can be analyzed in terms of locative specializations of the fundamental oblique (⊆). Locatives are as a specialization of the part-whole relation, roughly 'x included by y, y a location', see (13) above, where different locatives introduce different restrictions on inclusion.

This is schematized in (13') below. In a Figure/Ground configuration (Talmy 1991, 2000) the DP Ground complement i.e *jarvi* 'the lake' is introduced by means of the (⊆LocP) node. The head of ⊆LocP is lexicalized as *-l*. What the *-l* morpheme does is to impose a restriction on the basic inclusion relation of the type 'x included by y, y an external location'. The Figure DP *talo* 'talo' in turn is introduced (provisionally) by means of the *p* node that contributes the stativity property in (13').

(13') Talo järvellä.
the/a house-NOM the lake-ADE
'The/a house at the lake'

(13')



This model predicts the existence of languages like Finnish which displays a syncretism between dative and locative (specifically allative) as they share the same conceptual core, ultimately having to do with possession/part-whole (Manzini and Savoia 2011, Manzini *et al.* 2016). Of course, languages can have dedicated morphemes corresponding to core obliques (dative/genitive) and dedicated morphemes for locative marking. Crucially though, it is expected that languages can express dative and locative in a syncretic form. In Finnish, allative case is simultaneously a locative marker corresponding to the English preposition *to* and the dedicated case marker for beneficiary dative-NP arguments, as illustrated in (14).

(14) a. Menen joelle
go-1p.s. river-ALL
'I go to the river.'
b. Kirjoitan professorille.
write-PRES.1.sg professor-ALL
'I write to the professor.'

In present terms, the type of restriction that the *-l* morpheme introduces on the basic (⊆) content (cf. (13)) is of the type 'x included by y, y an external location'. The fact that *-l* can only be affixed to nouns/Ground objects (Talmy 2000) denoting external locations therefore follows from the properties of *-l* morpheme itself. Differently put, the *-l* morpheme can only be attached to a subset of Ns denoting external locations, because of its lexical content which imposes a specific restriction on the basic inclusion relation. The same logic applies to the *-s* morpheme, with the only difference that the *-s* morpheme imposes the opposite restriction on the basic inclusion relation to the nouns it attaches to ('x included by y, y an internal location'). Something more needs to be said about the fact that it is the allative ('external location') rather than the illative ('internal location') that is syncretic with dative. There are essentially two ways to go. One is to say that the dative (goal, beneficiary, etc.) has a semantic or conceptual affinity to exterior rather than to interior location. The other way to go is the one we prefer - namely to say that we have so far characterized as exterior location is in fact, the Elsewhere of the system. In other words, only the *-s* subset is explicitly characterized for 'interior location'. The *-l* set is simply locative inclusion or in fact simple inclusion, by default.

Where Italian and Finnish crucially differ is that as we have just shown, Finnish has different specialization of the Loc ⊆ predicate/projection; conversely, Italian lacks such highly specialized Finnish-like locative specializations, therefore it is expected that in the same context it may resort to an all-purpose preposition, which in fact may appear also in dative contexts. When it lexicalizes dative, the preposition retains its basic formal properties, it is the

head of the part-whole/⊆ projection. When it appears in a locative environment, it lexicalizes Loc ⊆, that is a specialization of the basic ⊆ projection. No further distinctions/specializations are presumably available in Italian. There is just one locative specialization of the core ⊆ relation surfacing with obliques. The fact that the Finnish-like multiple locative specializations are missing in Italian then could explain why the *a* preposition co-occurs both with stative and motion verbs, as in (15) (see Troberg 2011 for a discussion of similar phenomena in contemporary and Medieval French).

(15) a. Vado a scuola
I.go to school
'I go to school.'
b. Sono a scuola
I.am at school
'I am at school.'

5. Previous studies on the acquisition of Finnish spatial relations

The previous sections were devoted to the examination of the relevant theoretical literature on locatives. In Section 4, we have also sketched our proposal concerning the status of the Finnish locative case-markers as specializations of the basic part-whole or inclusion relation (Bellucci *et al.* in preparation). Let us now turn to acquisition.

Finnish is an interesting testing ground for the acquisition of different nominal suffixes, and studies on L1 acquisition and agrammatism have shown interesting results. Moreover, as far as we know, the acquisition of the nominal declension system and in particular of the local case system is a rather unexplored domain in Finnish L2 acquisition within the generative framework, though see Siivelt and Mustonen (2013) on Finnish L2 acquisition of locative cases by Estonian L1 speakers based on Jackendoff's (1983) conceptual semantics – and Martin *et al.* (2010) for an analysis of acquisition processes within the DEMfad model.

In their study on two aphasic patients Niemi *et al.* (1990) observe among other things the use of the six local cases. Using their terminology, cases are classified in External vs. Internal (adessive, allative, ablative vs. inessive, illative, elative, respectively) and Dynamic vs. Stative (allative, ablative, illative, elative vs. inessive, adessive, respectively). The authors notice that there is a difference in the production of local cases with respect to the control group. In particular, the most relevant results for the present study are that (i) the External cases seem to be more vulnerable, hence more problematic, with respect to the Internal ones and (ii) Dynamic cases show more resistance with respect to Stative cases. Hence, the less corrupted case turns out to be the internal stative inessive case while the hardest cases are the external dynamic

allative and ablative. The facts are explained by the authors in terms of different 'degree of cognitive complexity' (Niemi *et al.* 1990: 1025) as static cases consist of a two arguments system (e.g. *x* is at *y*) whereas dynamic cases have three arguments (e.g. *x* moves from *y* to *z*). Along these lines, the internal stative case is the most unmarked case. However, why the external stative adessive case does not show a pattern similar to the internal stative inessive, and hence why there is a difference between internal and external cases, is not discussed in detail. Interestingly, also in child L1 Finnish typical development it is observed that inessive case is the least problematic among local cases and this finding is imputed to the frequency of distribution of the various local cases (Toivainen 1980).

Dasinger (1997) presents a crosslinguistic comparison on the L1 acquisition of Finnish, Hungarian and Estonian. The different order of acquisition of locative cases is assumed to be ascribable to conceptual and pragmatic factors, namely to the frequency of these cases in the received linguistic input. A different analysis is presented in Laalo (1998) where it is observed that at the two-syllable stage in Finnish L1 acquisition (1;9-1;10 years), illative case (dynamic, internal) tends to be the first local case form to appear and it is used before allative (dynamic, external). Illative is also generalized to the contexts in which allative case would be required. The facts are explained in terms of morpho-phonological development, as the use of allative would require the use of one syllable more (unavailable at this stage). It is the morpho-phonological complexity together with the frequency in the input that are assumed to be the main reasons in the early acquisition of non-local cases (nominative, genitive, accusative, partitive). As a matter of fact, structural cases are morphologically less complex and very frequent in the linguistic input received by the child. From the data discussed in Laalo (2009) it also emerges that children occasionally use internal local cases instead of external ones and the reverse pattern is never attested. Laalo suggests that there could be a functional and formal explanation as internal cases are purely local whereas external cases are not, as both adessive and allative have highly relevant functions (frequent in terms of distribution) different from the local ones, i. e. possessor/instrument and beneficiary, respectively.[2]

[2] Interestingly, in their study on Hungarian L1 acquisition Pléh, Vinkler and Kahlman (1997) observe that two thirds of the produced local cases are internal local cases. This may suggest a higher frequency of distribution of internal local cases crosslinguistically, at least in these two related Finno-Ugric languages. However, we want to suggest that the preference for internal local cases cannot to be solely imputed to the higher frequency rates in the linguistic input. Rather, this attested pattern could be explained in a more principled/theoretically sound way. Recall that we have proposed that only the *-s* morpheme is associated with the inner specification, while, 'external location' is the Elsewhere. It might be the case that the Elsewhere local cases are more problematic than the inner local cases.

6. *The study*

6.1 *Aims and predictions*

The aims of the current study are twofold: (i) it tests the validity of the proposal presented in 4 through empirical data from L2 acquisition and (ii) it proposes to contribute to the ongoing debate on the optionality/vulnerability observed in L2 acquisition and in particular on the availability of (nominal) inflectional morphology in L2 acquisition, by providing new data from a relatively unexplored language pair. Theories on the morphological variability observed in L2 acquisition can be broadly classified in two main approaches. A first approach postulates a representational deficit in L2 grammars (Hawkins and Chan 1997; Tsimpli 2003; Papadopoulou *et al.* 2011); by contrast, a mapping difficulty between syntax and morphology is proposed within the Missing Surface Inflection Hypothesis (Prévost and White 2000b).

With a view to contributing to the ongoing debate, in this study we aim at investigating how L1 Italian learners of L2 Finnish acquire the highly articulated Finnish locative case-system, more specifically the four locative cases corresponding to the Italian preposition *a* and whether non-target patterns show a sensitivity to the different conditions of locative cases (inner vs. outer, stative vs. directional) through a translation task. More specifically, the research questions we aim to answer are the following:

(i) to what extent is the L2 grammar sensitive to the inner vs outer distinction in the selection of locative cases?

(ii) is there a preference for stative vs directional locatives in L2 Finnish acquisition?

(iii) can any transfer effect be observed from the L1 to the L2?

Previous studies on the acquisition of nominal morphology (Gurel 2000; Haznedar 2006; Papadopoulou *et al.* 2011) observed difficulties in the surface realization of Case. Based on the very different way of encoding spatial relations in Italian, the L1 of the participants, and in Finnish, the L2 of the participants, we expect that L2 Finnish speakers might have difficulties in identifying the exact nature of the different locative case-markers and that variability may emerge in the target-like production of these forms. In addition, we expect that non-target patterns are found in the use of inner *vs* outer stative cases and inner *vs* outer directional cases rather than e.g. stative *vs* directional cases. More specifically, a higher rate of difficulties with outer directional cases will support data from L1 typical and atypical development and the hypothesis that children L1 and adult L2 acquisition have similar developmental paths and hence both access Universal Grammar - at least for these aspects (White 2003; Schwartz 2003). We also expect

filler items, created using non-local structural/grammatical cases (nominative, genitive, accusative, partitive) and we expect allative as a beneficiary (all-BEN, namely dative), as will be described in 5.2.2 below, to be less problematic with respect to local cases, in line with the observations in L1 acquisition presented in Section 5.

From a theoretical point of view, it leaves open the possibility that a difference in target-like productions might be due to difficulties with pragmatic/semantic-syntactic interface conditions rather than with the syntactic module *per se*. More interestingly, recall that in Section 4 we have suggested that the inner vs. outer case distinction in Finnish relies on associating just the *-s* morpheme with the inner specification - while the *-l* morpheme is treated as the Elsewhere. This creates a formal disparity between internal and external cases, which may lead one of the two to be favoured. Specifically, we may predict on grounds essentially of the Subset principle (Manzini and Wexler 1987 and references cited that inner cases are more easily learned than the Elsewhere outer cases.

6.2 *The experimental design*

6.2.1 *Participants*

Twenty-three native speakers of Italian, who have acquired Finnish as an L2 in their adulthood, and eleven native speakers of Finnish, constituting the control group, participated in the study.

Table 3. Background information for L2 speakers.

	Mean (years)	*Range (years)*
Length of Study of the L2	2,3	1,4-2,4
Age (at the moment of testing)	22,1	20-26

The L2 participants were all Italian students of Finnish recruited at the University of Florence, Bologna, and Naples. The participants were asked to do the elicitation task in the most spontaneous way, in other words, they were asked to use the first translation that comes to mind. The participants also answered to a background questionnaire on the age of first acquisition of the L2, their age at the moment of testing, their length of study of the L2, their knowledge of other languages (all the participants know some other language, Germanic and/or Romance). The L2 level was assessed considering the level of the courses in which they were taking part at the university where they were enrolled; the level was considered adequate in so far as the L2er was able to complete the task. Information on the participants is provided in Tables 4 and 5.

Table 4. L1 Finnish participants (control group).

N=11	Min.	Max.	Mean	Std. Dev.
Age of Testing (AoT)	25	70	36,4	13

Table 5. L2 Finnish participants.

N=23	Min.	Max.	Mean	Std. Dev.
Age of Testing (AoT)	20	26	22.1	0.56
Length of Study of the L2 (LoS)	1.4	3	2.3	2.16

6.2.2 *The task*

The experiment is novel and was created for the purpose of this study. It consists of an elicitation task that involves translation from Italian to Finnish of sentences with locative forms. A pilot version of the sentences was checked with native speakers of Finnish in order to control the validity of the contexts. As the focus of the study is on the four locative cases corresponding to different functions of the Italian preposition *a*, we created four conditions, for allative, illative, adessive, inessive cases, respectively[3] (see Sections 2.1.1 and 2.1.2 for a description of the Finnish case system). Each condition has twelve sentences for a total of 48 sentences. In addition, 26 filler sentences were created using non-locative cases (5 for nominative, 5 for genitive, 5 for partitive, 5 for accusative) and allative as a beneficiary (dative-interpretation, 6 sentences). Examples of target items for the four Finnish cases are given in (16).

(16)	Sentences to be translated	Expected case and classification
a.	Timo è a scuola fino alle cinque. (koulu; viisi; asti) Timo on koulussa viiteen asti. Timo-NOM is-PRES3sg school-INE five-ILL until 'Timo is at school until 5 o'clock'	*inessive (locative, internal)* expected answer
b.	Siamo al mercato a comprare pesce. (tori; ostaa; kala) Olemme torilla ostamassa kalaa. be-PRES1pl market-ADE buy-INF.INE fish-PARTsg 'We are at the market to buy some fish.'	*adessive (locative, external)* expected answer

[3] Ablative and elative cases, indicating motion-from were excluded because the present study focuses on the mapping difficulties in Finnish L2 acquisition with respect to the Italian preposition *a*.

c.	Vado in albergo a dormire (hotelli; nukkua) Menen hotelliin nukkumaan. go-PRES1sg hotel-ILL sleep-INF.ILL 'I go to the hotel to sleep.'	*illative (lative, internal)* expected answer
d.	Andiamo alla fontana a prendere l'acqua. (vesilähde; hakea; vesi) Mennään vesilähteelle hakemaan vettä. go-PASS. fountain-ALL take-INF.ILL water 'Let's go to the fountain to take some water.'	*allative (lative, external)* expected answer

Each sentence (target and filler) is provided with the relevant words in the base-form in order to avoid difficulties in retrieving lexical items in the L2, to facilitate the translation process and to allow the participant to focus just on the inflectional form of the given words. Aids such as grammar books or dictionaries were obviously not allowed. Target items were classified on the basis of the external/internal and locative/stative distinction. Sentences were randomized in three different lists. The task was administered in one session, time factor was not considered relevant and in general the task took about 40-60 minutes to be completed.

7. *Results and discussion*

7.1 *Main results*

L2 learners of Finnish at an intermediate level show striking differences in the expression of spatial relations, namely in the production of the target-like locative case-marker, as represented in Graph (1).

Graph 1. L2 target production of locative case-markers and of allative-BEN

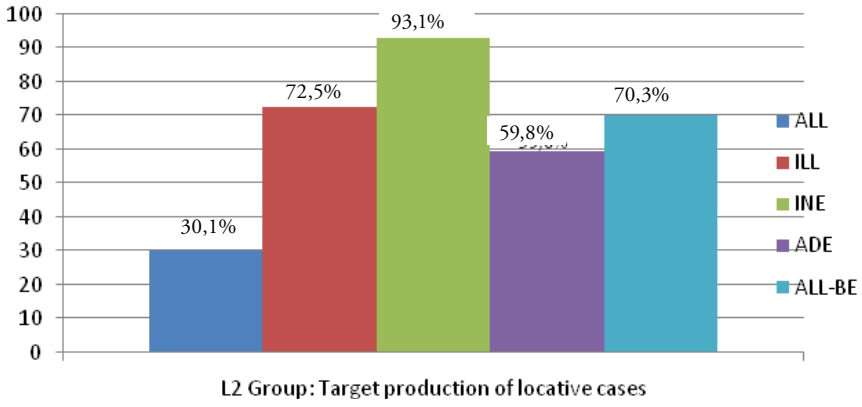


Table 6. Absolute numbers and rates of L2 target productions (n=23)

	Allative	Illative	Inessive	Adessive	Allative-beneficiary
Target	84/276 30,1%	200/276 72,5%	258 93,5%	165 59,8%	97/138 70,3%
Non-target	185/276 67%	72/276 26,1%	15/276 5,4%	99/276 35,9%	35/138 25,4%

As we can observe from Graph 1 above, L2 participants perform better in the inessive and illative conditions. Nevertheless, inessive is significantly less problematic than illative ($t(22) = -2.073$, $p \leq .000$). Conversely, a poorer performance emerges in the allative and adessive conditions, the external cases. In addition, the L2ers perform remarkably better in the allative-beneficiary condition with respect to the allative-locative condition:[4] a Wilcoxon Signed-Ranks Test indicated that target productions in the allative-beneficiary condition were statistically significantly higher than target productions in the allative-locative condition ($Z = 2.4$, $p < .016$). Interestingly, L2ers have minor difficulties with non-locative (structural) cases. This is reminiscent of the 'developmental path' described in studies on L1 Finnish (Toivainen 1980; Laalo 2009) where it is shown that structural cases are acquired relatively early, see Section 5.

Graph 2 shows the results of the control Group. The absolute numbers and rates for the L2 target productions are reported in table 6 above (see also table 7 for a comparison with the target production rates of the controls).

Graph 2. L1 target production of locative case-markers and of allative-BEN.

Table 7. Absolute numbers and rates of L1 target productions (n=11).

	Allative	Illative	Inessive	Adessive	Allative-beneficiary
Target	122/132 92,4%	124/132 93,9%	129/132 97,7%	130/132 98,5%	66/66 100%

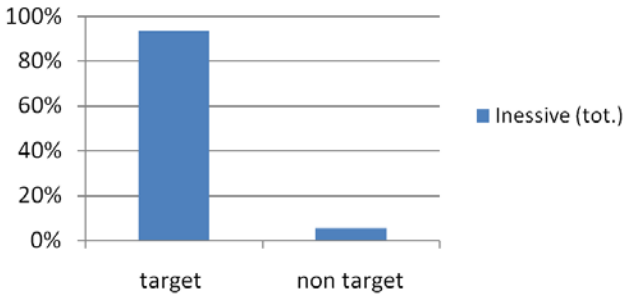
[4] Recall that the locative allative case marker (corresponding to English 'to') is syncretic with the dative-beneficiary case marker in Finnish.

7.2 *Non target patterns*

The most common non target pattern consisted in substitution of the expected form with another local case. Analysis of non-target forms shows that substitutions are not distributed randomly but can instead coherently be captured under the assumption that L2 discriminate between internal and external cases and between local and directional cases. In the graphs 3 to 10 we will give the total amount of target and non-target productions and then the detailed analysis of substitution errors for each local case. In the graphs of non-target patterns there is a column for each other case of the task. The column 'other' includes use of other forms (e.g. non marked base-form) as well as incomplete sentences.

7.2.1 *Inessive (internal, locative)*

Graph 3. Production of target and non-target forms for inessive case in the L2 group.



Graph 4. Substitution patterns for inessive case in the L2 group

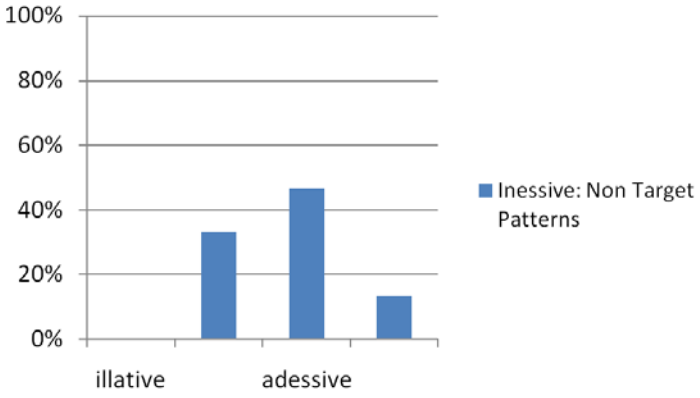


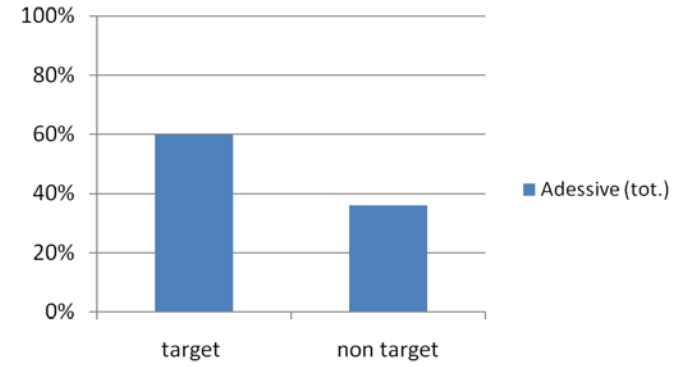
Table 8. Absolute numbers and rates of substitution errors in the inessive condition

Inessive Non-target patterns	illative	allative	adessive	other
Tot. 15	0 0%	5/15 33,30%	7/15 46,70%	2/15 13,30%

The production of target-like forms in the inessive case is target-like in the L2 group (no statistically significant difference with the control group) and target (mean=11.22, SD=0.9) and non-target (mean= 0.65, SD= 0.71) forms differ significantly ($t(22)= -2.07$, $p \leq .000$). As for non-target patterns, represented in Graph 4, we see that inessive case was mainly substituted with adessive, the corresponding external case.

7.2.2 *Adessive (external, locative)*

Graph 5. Production of target and non-target forms for adessive case in the L2 group



Graph 6. Substitution patterns for adessive case in the L2 group

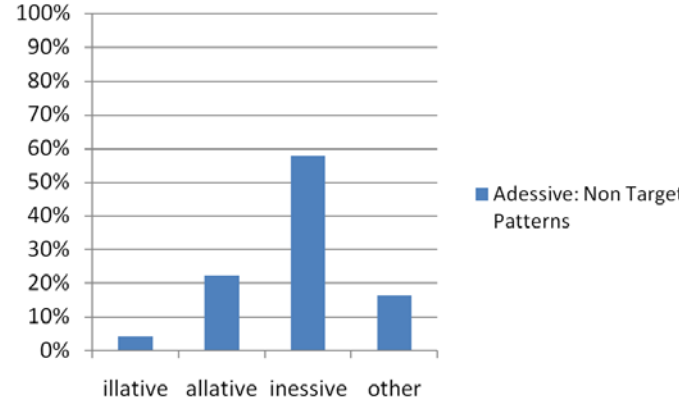


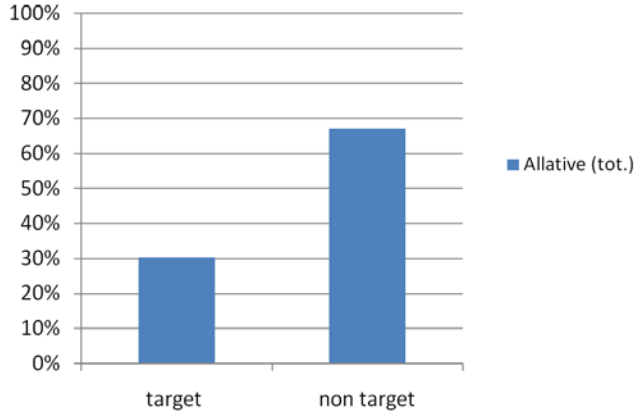
Table 9. Absolute numbers and rates of substitution errors in the adessive condition

Adessive Non-target patterns	illative	allative	inessive	other
Tot. 99	4/99 4%	22/99 22,2%	57/99 57,6%	16/99 16,2%

The L2ers have a poorer performance with adessive case, the corresponding external case to inessive. However, the production of target and non-target forms differ significantly (t(22)= -2.074, p= .011). Conversely for what we observed for inessive case, the most frequent substitution tendency consists of inessive case when adessive is required. In other words the form to which L2ers resort when displaying non-native-like behaviour in the adessive condition is the inessive, which is the corresponding internal stative case.

7.2.3 *Allative (external, lative)*

Graph 7. Production of target and non-target forms for allative case in the L2 group



Graph 8. Substitution patterns for allative case in the L2 group

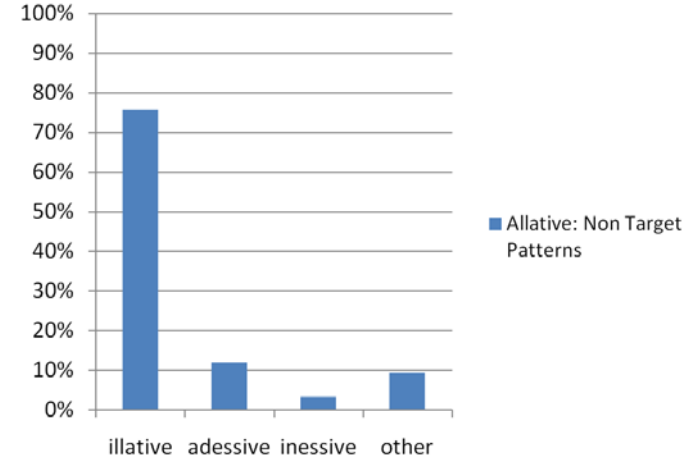


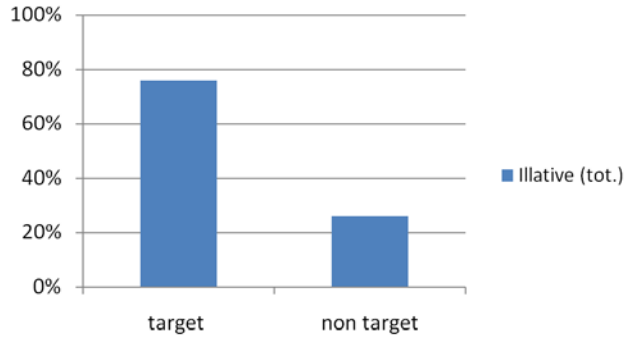
Table 10. Absolute numbers and rates of substitution errors in the allative condition

Allative Non-target patterns	illative	adessive	inessive	other
Tot. 185	140/185 75,7%	22/185 11,9%	6/185 3,2%	17/185 9,2%

Allative case show a high rate of non-target patterns and thus seems to be a very problematic case for L2ers (a paired T-Test shows a significative difference in the production of target and non-target patterns: t(22)= -2.979, p= .006). When allative is not produced the most frequent substitution occurs with illative case, disregarding the other cases almost completely.

7.2.4 *Illative (internal, lative)*

Graph 9. Production of target and non-target forms for illative case in the L2 group



Graph 10. Substitution patterns for illative case in the L2 group

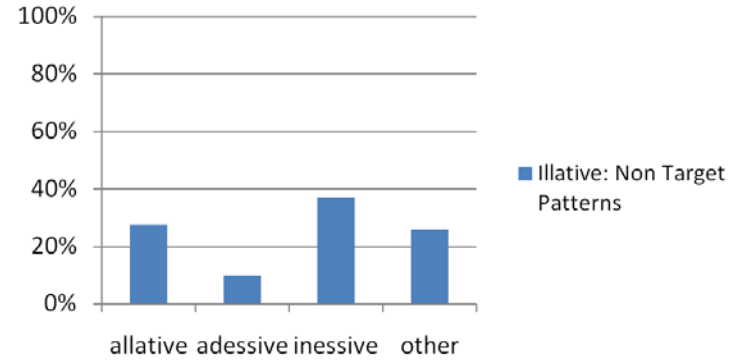


Table 11. Absolute numbers and rates of substitution errors in the illative condition

Illative Non-target patterns	allative	adessive	inessive	other
Tot. 72	22/72 30,6%	6/72 8,3%	27/72 37,5%	19/72 26,4%

From graph 10 above we can see that substitutions mainly occur with allative and inessive cases. Graph 9 shows a clear target/non target patterns (good performance with illative) but unclear distribution of non-target forms across cases. Summarizing the results presented above, for the intermediate L2ers participating to this study the less problematic cases are inessive and illative (target rate over 75%), the two internal cases, independent of the stative/directional feature. The most problematic case results to be allative, external lative/directional case. Adessive case is somewhere in between: it does not seems to be as difficult as the allative but still does not show a target rate similar to the internal cases. More testing at different levels of proficiency and larger groups of participants is needed in future research.

7.3 *Discussion*

In this paper we have reviewed some of the existing literature on the Finnish case system with particular attention to locative cases. We have endeavoured to give a formal characterization of a subset of 4 locative cases in Finnish (allative, illative, adessive, inessive). We have provided L2 data which in our opinion may be regarded as a valuable tool for the evaluation of competing theoretical proposal concerning the syntax of spatial expressions. Our study remarkably differs from previous corpus-based research as we created a task which aims at eliciting the target structures in the most spontaneous way in controlled contexts.

Our main finding is that the L2 Finnish grammar is sensitive to the four conditions tested in the task: internal, external, stative, directional. More specifically the internal cases (illative, inessive) result to be more readily available to the L2ers whereas the external cases ones (allative, adessive) are more problematic. Nanosyntactic approaches correctly predict that stative cases corresponding to the Place projection should be less complex than directional cases corresponding to the Path projection (since Place and Path are hierarchically ordered). However we have shown that the L2 Finnish grammar is not only sensitive to the stative and directional conditions but crucially also to the internal and external conditions. Hence alternative proposals seeking to account for the attested patterns are to be welcomed.

In the model we are proposing the stative vs. directional distinction does not correspond to different syntactic projections which are hierarchi-

cally ordered, hence no prediction regarding the complexity of one condition over another is made. As for the differences observed in the different rate of production of external vs. internal cases, we reiterate what we already stated in outlining our predictions. In Section 4 we have suggested that the inner vs. outer case distinction in Finnish relies on associating just the *-s* morpheme with the inner specification - while the -l morpheme is treated as the Elsewhere. This creates a formal disparity between internal and external cases, which may lead one of the two to be favoured. Specifically, we may predict on grounds essentially of the Subset principle (Manzini and Wexler 1987 and references quoted there) that inner cases are more easily learned than the Elsewhere outer cases.It is worth noting that the model also correctly predicts that the dative (allative as beneficiary) condition should be less problematic for the L2 speakers than its locative counterpart (allative as locative). Under this approach the representation of the core inclusion relation lexicalized by datives should be the same both in Italian and Finnish. Conversely, L2ers systematically avoid the production of allative as a locative case because presumably they have not yet access to the relevant representation in the L2. This is due to the fact that the Italian grammar crucially lacks the Finnish-like more structured locative specialization ($\text{Loc} \subseteq_{\text{internal/external}}$).

8. *Final remarks*

This study provides novel data on the Acquisition of locative case markers by L2 Finnish speakers. This is a rather understudied topic in the acquisition literature. Conversely, there is a growing body of theoretical literature revolving around the formal properties of spatial expressions (Svenonius 2010; Pantcheva 2011; Lestrade *et al.* 2011, a.o). We believe that L2 data can be a valuable source of evidence for the evaluation of competing theoretical proposals on the market.

In Section 2, we have illustrated the Finnish case paradigm. We have focused our attention on the locative case system. We have remarked that the different locative case-endings can be classified according to a three-way contrast of entering, residing and exiting a state/location. We have analyzed a subset of four locative cases (allative, illative, adessive, inessive) which can be translated into Italian using the preposition *a*. We have mentioned that there is an additional crucial distinction which targets the stative vs. directional divide in the locative paradigm, namely the difference between the internal vs. the external cases.

Moreover, we have reviewed some theoretical proposals on the status of the Finnish structural and locative cases. In Section 3 we have discussed some of the main theoretical proposal concerning (locative) prepositions. In Section 4 we have sketched a proposal which accounts for the formal properties of Finnish locatives and that seems to fit the L2 data. Then we have turned to acquisition in Section 5, where we have reported the findings of the previ-

ous studies on the acquisition of locative case marking in L1 Finnish across different populations. Section 6 is devoted to the experimental design and to the description of the written translation task we have created for the purpose of eliciting the locative case-marked NPs in Finnish L2. Section 7 focuses on the target and non-target results and on the discussion.

The aim of this study was to check whether the L2 grammar was sensitive to the stative vs. directional distinction as we predicted (taking into consideration the findings of the L1 Finnish acquisition literature), but also we were interested in testing to what extent the L2 learners had acquired the internal vs. external distinction which is crucially lacking in their native language. Results suggest that the L2 grammar is sensitive to the stative vs. directional distinction. More importantly, we found a preference for internal cases, a finding that was reported for other populations, namely child L1 development and agrammatism (Niemi *et al.* 1990; Laalo 2009 a.o.).

In a nutshell, the study shows two interesting novel findings: first of all the L2 grammar is not only sensitive to the broad stative and directional distinction but it can also discriminate between internal and external locative cases. Secondly, the L2 learners have two distinct representations for the allative case marker, suggested by the remarkably better performance in the allative as beneficiary (dative) condition with respect to the allative as locative condition. Therefore, a model that can predict these facts might be on the right track (see also Bellucci *et al.* in preparation). We expect that further crosslinguistic research on other Uralic languages could be revealing in this sense.

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