How (not) to derive a *ABA: The case of Blansitt's generalisation

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Abstract In this paper, I provide an account for the so-called Blansitt's generalisation (Blansitt 1988). The generalisation says that in the linear sequence DATIVE—ALLATIVE—LOCATIVE, only adjacent functions may be marked the same. In previous work (Bobaljik 2012; Starke 2009; Caha 2009), analogous *ABA patterns have been encoded by the so-called feature cumulation. Feature cumulation means that the amount of features characteristic for individual categories monotonically grows in the order given in any such sequence. However, Blansitt observes that in the case of datives, allatives and locatives, the allative (which is in the middle) tends to be composed of the dative and the locative, so the account based on cumulation does not work. The present paper thus argues for a different representation of the underlying categories, namely as containing (abstractly) the features A, AB and B respectively (following in part Bobaljik & Sauerland 2017). I refer to this as the "overlapping" decomposition. When such a decomposition is combined with the Superset Principle (Starke 2009), it yields both the *ABA restriction and the observed syncretism and containment patterns. I further argue that this is a non-trivial result, since traditional underspecification approaches face significant challenges in deriving the *ABA pattern on the basis of the overlapping decomposition.

Keywords: *ABA; Blansitt's generalisation; linear contiguity; Nanosyntax; spatial case; syncretism

1 Blansitt's generalisation

Blansitt (1988: 177-8) notes that "the functions [...]

(1) DATIVE—ALLATIVE—LOCATIVE

can be identically marked only if the identically marked functions are contiguous in the order shown." I will refer to (1) as Blansitt's generalisation.

Before I start exploring the patterns, I devote some time defining the categories to be looked at. Blansitt defines them both broadly and quite simply: dative corresponds to *the recipient in a ditransitive construction*; allative is a *goal of motion*, and locative corresponds to the *place where*.

Such semantic definitions are necessary to ensure cross-linguistic applicability of the category (Haspelmath 2010). However, the execution is not always straightforward, because such broad definitions usually return a variety of markers, not necessarily comparable across languages. For instance, the recipient in English can be marked either by *to* or remain unmarked (Ø). As to which one of these markers should be matched against English locatives—or against datives in languages with only one type of a recipient marker—is an important and non-trivial question that has quite far-reaching consequences (see Starke 2017b). Simply as a way of proceeding in such situations, I adopt several conventions. The first general tendency in this work is to disregard Ø marking. This is not because such marking presents necessarily a problem, but because it rarely extends to allative and locative functions, which makes it of limited interest in the context of a work on syncretism.

The second tendency is to look more closely at simplex markers rather than at complex markers. For instance, in Pite Saami, there is clearly a single basic locative marker (*-n*), and other locative constructions are complex, featuring the locative suffix as a component.

Sometimes, however, we find several locative markers that are both overt and simplex. In English, for instance, we have minimally *at* (as in *at school/work*), and *in* (as in *in hospital/jail*); and it seems arbitrary to chose one over the other as *the* locative marker. In these cases, all such markers are taken into consideration, though explicit mention is given to those which show syncretism. In Japanese, for instance, the two basic locatives are *-ni* and *-de* (Takamine 2006). However, only *-ni* is syncretic with the allative and the dative (Rice & Kabata 2007), and that is why it is going to be discussed, while *-de* will not be mentioned.

A special issue with allatives qua *goal of motion* expressions is that they fall into at least two large groups. One type of goal-of-motion construction is dependent on the verb to yield the reading, the other is not (as reflected in Talmy's famous verb-framed vs. satellite-framed dichotomy, see Talmy 2000 for a recent discusion). In English, for instance, the preposition *in* has a goal-of-motion reading with verbs such as *jump* (*He jumped in the lake*), but not with verbs such as *walk* (*He walked in the lake*). *To*, on the other hand, has a goal of motion reading with both types of verbs. In this paper, I try to take into account only the latter type of markers, though they are not always easy to distinguish based on grammatical descriptions.

With the definitions in place, let me illustrate the logic of Blansitt's generalisation on data from a couple of languages. As a base line to the discussion of syncretism, let me start by showing that there is nothing wrong about differentiating all the three roles within a single language. Basque (as described in Hualde & de Urbina 2003) exhibits such a pattern:

(2) *Basque* (Hualde & de Urbina 2003: 856, 412, 392)

a. Nik alta-**ri** eta ama-**ri** oparia eman diet.
I father-DAT and mother-DAT gift give AUX
'I have given a gift to my father and my mother.' Recipient

b. Xabier bulego-**ra** dietu dute.
Xabier office-ALL call AUX
'They called Xavier to the office.' Goal

c. Patxik soro-**an** garia erein du.
Patxi field-LOC wheat sow AUX
'Patxi sowed wheat in the field.' Location

Against this background, I am going to discuss possible and impossible syncretism patterns, starting from the Japanese data in (3). What we see here is that the marker *-ni* can be used to mark all the three categories. The examples are given in the order of Blansitt's statement; the dative in (3a), allative in (3b) and locative in (3c).

(3) *Japanese* (Takamine 2010: 55, 57)

a. Taro-ga tomodach-**ni** hon-o ageta.
Taro-NOM friend-DAT book-ACC gave
'Taro gave a book to his friend.' Recipient

b. Kodomotachi-wa futatu-no kooen-**ni** itta.
children-TOP two.cl-GEN park-ALL went
'The children went to two parks.' Goal

c. Akiyama & Akiyama (2002: 51)

Ginza-wa Tokyo-**ni** arimasu.
Ginza-TOP Tokyo-LOC is
'Ginza is in Tokyo.' Location

In Pite Saami (Wilbur 2014), the dative and allative pattern together to the exclusion of the locative:[1]

(4) *Pite Saami* (Wilbur 2014: 86-7, 90)

a. Vadda Jåssjå-**j** aj.
give.IMP Josh-DAT too
'Give (one) to Josh, too!' Recipient

[1] The common DAT/ALL case marker *-j* has also an illative function, and it is called as such in Wilbur's grammar. I have taken the freedom here to change his glosses into a more semantic glossing convention, which reflects the particular function of the case marker in the given context.

b. Da vuodja bijla-jn Ornvika-**j**.
now drive.3PL car.COM Ornvika-ALL
'Now one drives to Ornvika by car.' Goal

c. Vágge-**n** Sálvo-jåhkkå l.
valley-LOC Sálvo-creek.NOM.SG is
'Sálvo Creek is in the valley.' Location

Finally in Dime (Cushitic), the allative and the locative are marked the same to the exclusion of the dative.

(5) *Dime* (Seyoum 2008: 47, 55, 152)

a. ʔaté šiftay-**in** mesáf-im ʔ́im-tub.
1.SG shiftaye-DAT book-ACC give-FUT
'I will give the book to Shiftaye.' Recipient

b. Kɛ́né ʔéh-**ó** ýiz-i-n.
dog house-LOC run-PF-3
'A dog ran home.' Goal

c. Ńits-is ʔéh-**ó** dán.
child-DEF house-LOC COP
'The child is in the house' Location

In his study, Blansitt looked at 71 genetically unrelated languages.[2] No language in his sample includes the fourth logical possibility for syncretism, i.e., the syncretism of locative and dative to the exclusion of the allative, which is the reason for stating the generalisation (1).[3]

The following table sums up the facts seen up to now:

[2] Accoli, Adamawa, Alawa, Awa, Basque, Bimoba, Birom, Cambodian, Chagatay, Chrau, Dehu, Dinka, English, French, Gidabal, Grebo, Guaraní, Gumbaynnggir, Guugu Yimiddhir, Hopi, Hungarian, Iai, Izi, Jalanga, Kalkatungu, Kamasu, Kapau, Kirghiz, Khasi, Kunjen, Kurdish, Kwanga, Lamani, Lithuanian, Manambu, Mandak, Maranungku, Mixteco, Moroccan Arabic, Orokaiva, Papago, Parji, Pengo, Quichua, Quiotepec Chinantec, Raramuri, Resigaro, Ronga, Sebe, Shuar, Shuswap, Spanish, Somali, Southern Sierra Miwok, Tahitian, Tamazight, Tarascan, Tatar, Tboli, Tigrinya, Tlingit, Turkish, Warao, Welsh, Yele.

[3] This paper clearly depends on the correctness of Blansitt's generalisation, although its full empirical discussion is beyond the scope of this paper. In a related later study of allative morphology, Rice & Kabata (2007) found that the generalisation holds true in their sample as well, though their main goal is to go beyond Blansitt's work in the range of meanings which they consider in their study.

(6) The syncretism patterns summed up

	DATIVE	ALLATIVE	LOCATIVE
Japanese			
Pite Saami			
Dime			
NOT ATTESTED	A	B	A

The main goal of the paper is to explore the mechanisms underlying these patterns. Before I get there, one last thing should be mentioned: such syncretisms do not necessarily target all nouns in a given language. For instance, in Diyari, a language of South Australia (Austin 1981), we find a pattern where singular nouns exhibit a DAT-ALL syncretism (the Pite Saami pattern), while plural and dual nouns exhibit an ALL-LOC syncretism (the Dime pattern).

(7) *Diyari* declension (Austin 1981: 3.2.5)

	person DU	person PL	stick SG	man SG
NOM	karna-wurl-u	karna-wara	pirta	mathar-i
ACC	karna-wurla-nha	karna-wara-nha	pirta	mathar-i
ERG	karna-wurla-li	karna-wara-li	pirta-li	mathara-li
DAT	karna-wurla-rni	karna-wara-rni	pirta-ya	mathara-ya
ALL	karna-wurla-ngu	karna-wara-ngu	pirta-ya	mathara-ya
LOC	karna-wurla-ngu	karna-wara-ngu	pirta-nhi	mathara-nhi
ABL	karna-wurla-ngu-ndru	karna-wara-ngu-ndru	pirta-ndru	mathara-ndru

Because of facts like these, I will understand and model syncretism as a property of markers, not of languages. As a special case, this approach also covers language wide syncretism (for instance, when there is just a single DAT/ALL marker). However, there is going to be one and the same account regardless of whether the relevant syncretism targets only a subset of the markers in a language (as in Diyari) or all such markers (Pite Saami, Dime).

I differ on this point from researchers such as Williams (1994), Calabrese (2008) or Harley (2008), who suggest a differential treatment of these phenomena depending on whether syncretism targets only some or all paradigms. For instance, Calabrese (2008) distinguishes between the so-called contextual and absolute syncretism, proposing that the former is a result of underspecification, while the latter is a consequence of the so-called Impoverishment. The reason why I do not follow these approaches is exactly the existence of generalisations like Blansitt's, which show that both types of syncretism are subject to the same restrictions. Specifically, neither absolute nor contextual syncretism leads to a *ABA pattern in a given order. This suggests that having a single mechanism is not only theoretically desirable, but also empirically justified.

In several recent studies on *ABA, such patterns are encoded by means of the so-called feature cumulation (see Bobaljik 2012; Starke 2009; Caha 2009; Taraldsen 2010; Pantcheva 2011; De Clercq 2013; Vangsnes 2013; Smith et al. 2015; Harðarson 2016; Lander & Haegeman 2016; Vanden Wyngaerd 2017; Baunaz 2017). The idea is that the categories which make up the contiguity sequence, decompose into features, and the number of such features monotonically grows as we go from one side of the generalisation to the other. Applying this standard approach mechanically to (1), we arrive at two possible decompositions, as depicted in (8).[4]

(8) Feature cumulation as a way of deriving *ABA

	FEATURES OPTION 1	FEATURES OPTION 2
DAT	A	ABC
ALL	AB	AB
LOC	ABC	A

Under either of these scenarios, there is no way of setting up lexical entries in a way that a *ABA pattern arises (Bobaljik 2012; Caha 2013).

With the abstract outlines of a theory in place, it would seem that the only thing left is to decide which of these two options is correct. The standard decision procedure would be to look at the actual morphological containment relations among these categories in various languages. If the option labelled 1 is correct, we should find cases where the locative contains the form of the allative, and also cases where the allative contains the dative as its base. If the option 2 is correct, then the morphological containment relations should be the other way around. It turns out that in the case of Blansitt's generalisation, we are headed for a surprise.

2 The curious case of Tigrinya

The idea of tracking both syncretism and morphological containment in a single linear order is not without precedent. As Plank (1991: 169-70) observes, one of the early 19th century proponents of linear ordering, Rasmus Kristian Rask, "was almost haunted by the desire to restore the inflectional paradigms [...] to their natu-

[4] See Pantcheva (2011: 256) for a version of this approach involving the categories in question.

ral order." Most importantly, he had "two main criteria: derivability, with 'derived' forms slotted after their bases [...] and homonymy, with terms sharing exponents earmarked for neighbourhood." These turn out to be exactly the same criteria that are relevant for the modern approaches based on feature cumulation.

Blansitt also pays attention to morphological containment. However, the diagnostic has a different meaning for him. Specifically, it is not the case that the base form should precede the derived form; rather, it seems that morphological containment for Blansitt is just a side-effect of contiguous distribution of individual markers. This becomes obvious from the following passage, where he writes: "The *Tigrinya* prepositions illustrate the contiguities [in (1)]: *ne* marks [...] prototypic and some other dative; *ab* marks locative; *nab* = (*ne ab*) marks allative [...]. It is probable, though evidence is scanty, that a morphemically complex marker composed of two function markers will contain exactly the two function markers of contiguous functions."

The following table (9) depicts Blansitt's logic. In the table, the fixed order of the functions (1) is encoded in the first line: DAT-ALL-LOC. The actual markers are then given below. I think that in order to make sense of Blansitt's statement that Tigrinya illustrates the relevant contiguities, one must assign the markers *ab* and *ne* to their functions as shown on the last two lines. The consequence is that for Blansitt, morphological containment in the allative (which I will also be calling case compounding) is actually a result of an overlap in two contiguous distributions. That also explains why complex markers should be always "composed of [...] function markers of contiguous functions."

(9) The distribution of markers in *Tigrinya*

	DATIVE	ALLATIVE	LOCATIVE
FORM	*ne*	*ne+ab*	*ab*
		ab	*ab*
	ne	*ne*	

Such facts are obviously incompatible with the cumulative approach to contiguity, recall (8). In such a decomposition, the middle form simply cannot contain the two forms which are on the side.

However, it is not absolutely clear how strong the evidence for the interesting containment pattern in (9) actually is. First of all, Blansitt mentions that this is a rare pattern. Second of all, the pattern is not crystal clear in Blansitt's poster-child language Tigrinya either, because of the phonological interaction between the two vowels. Can it be that the resemblance is only accidental? In a wider perspective, it turns out that the Tigrinya facts cannot be easily dismissed, because the same containment pattern can be found across various languages, some of which are discussed below.

The first language I look at is Macedonian. Macedonian shows virtually the same pattern as Tigrinya, including the order of the markers. Specifically, in the allative, the DAT *na* precedes the locative *kaj*, and they both precede the noun.

(10) *Macedonian*: DAT-LOC-N

a. Tomič (2006: 78)
   Mu go dal podarokot **na** sina i.
   him.DAT it.ACC gave present.DEF DAT son her
   'He gave the present to her son.' Recipient

b. Pantcheva (2011: 36)
   Odam **na kaj** parkot.
   I-go DAT LOC park
   'I am going to the park.' Goal

c. **Kaj** parkot sum.
   LOC park.DEF am
   'I am at the park.' Location

In Malayalam, a Dravidian language, the dative is marked by the suffix *kkə*, see (11a). The locative suffix is *-il*, see (11c). The allative is formed by affixing the dative after the locative; so we have a mirror image order of what Blansitt reports for Tigrinya.

(11) *Malayalam*: N-LOC-DAT (Asher & Kumari 1997: 107, 113)

a. Hanipha eni-**kkə** ii pustakan tannu.
   Hanifa I-DAT this book gave
   'Hanifa gave me this book.' Recipient

b. Kiḷihaḷ kunṭṭ-**ilee-kkə**[5] parannu pookunnu.
   birds nest-LOC-DAT fly-PP go.PRES
   'The birds fly to their nests.' Goal

c. Viiṭṭ-**il** aarokke uṇṭə?
   house-LOC who all be.PRES
   'Who are there at home?' Location

[5] There is an *ee* in between the locative *-il* and the dative *-kkə*, which is missing when these markers are used in isolation. Elsewhere in the language, *-ee* "can be suffixed to major constituents of the sentence—NPs, AdvPs, PostPs and verbs—to emphasise the constituent in question" (Asher & Kumari 1997: 178). If this *ee* is indeed an emphatic marker, the fact that it intervenes in between the two affixes strongly suggests that the locative and the dative affixes represent separate heads, an analysis I propose in the next section on independent grounds. For simplicity, I treat the *-ee* as a part

Such a system of attaching a dative marker after a locative marker seems to be relatively common. The Papuan language Waris (Brown 1988) distinguishes at least two distinct locative suffixes, depending on the animacy of the base, see (12c). Each of the locatives has a corresponding allative, see (12b), formed by attaching *-m* after the locative. The *-m* also serves as the recipient marker in (12a).

(12) *Waris*: N-LOC-DAT (Brown 1988: 44, 46, 55)

a. Him-ba buku ka-**m** vrahoi.
he-TOP book I-DAT gave
'He just gave me a book.' Recipient

b. Deuv-**ra-m** Luk-**ina-m** ka-va ga-v.
house-LOC-DAT Luke-LOC-DAT I-TOP go-PRES
'I go to Luke's house.' Goal

c. Ovla deuv-**ra** ka-**ina** dihel-v.
knife house-LOC I-LOC exist-PRES
'The knife is at my house' (lit. at the house at me). Location

A system similar to Waris and Malayalam is found in Tsez (Comrie & Polinsky 1998), a Nakh-Daghestanian language. The language has a relatively large number of locative cases, corresponding to various types of locative configurations. These are given in the *essive* column in table (13).[6]

(13) *Tsez* essives and allatives (Comrie & Polinsky 1998: 104)

	essive	allative
IN	-ā	ā-r
AMONG	-λ	λ-er
ON (horizontal)	-ƛ'(o)	-ƛ'o-r
UNDER	-ƛ	-ƛ-er
AT	-x(o)	-xo-r
NEAR	-de	-de-r
ON (vertical)	-qo	-qo-r

Importantly, Comrie & Polinsky (1998: 104) note that "[t]he allative suffix [*-(e)r*] is identical to the dative suffix, and therefore they must be subsumed as a single suffix, which we will arbitrarily call dative; thus, the so-called "dative" is the dative

of the locative marker (which disappears word finally). I am grateful to an anonymous reviewer for directing me towards the emphatic nature of the *-ee*.

[6] Comrie & Polinsky (1998: 104) note: "For the forms given with *o* in parenthesis, the form without *o* is used word finally after a vowel, e.g., *besuro* 'fish', *besuro-x*, but *is* 'bull,' *is-xo*. When further suffixes are attached, the *o* is always present, e.g. *besuro-xo-r*."

attached to the bare stem, while the so-called "allative" is the dative attached to a local stem bearing a suffix of local orientation."

Moving now to a different type of language, consider the data from Iatmul, a Papuan language of New Guinea. In this language, the noun also precedes both DAT and LOC, but the markers show the reverse order compared to Malayalam, Waris and Tsez:

(14) *Iatmul*: N-DAT-LOC (Staalsen 1965: 10, 21)

a. Kooda-**koot** viyoo-a?
who-DAT hit-1ST.DUAL
'For whom did we two hit?' Recipient

b. gay-**koot-ba**
house-DAT-LOC
'to the house' Goal

c. gay-**ba**
house-LOC
'in the house' Location

A more detailed discussion of these languages will be presented in section 4. The conclusion at this point is that the Tigrinya pattern is real enough to be taken seriously.[7]

3 The overlapping decomposition

The implication of the facts discussed in the previous section is that we cannot capture Blansitt's generalisation by feature cumulation, because such an approach

[7] An anonymous reviewer reminds me of English *into* and *onto* as yet another case where we (possibly) find the locative markers *in* and *on* combined with the dative marker *to*, yielding the allative. However, as pointed out by Noonan (2010), the problem is that the English item *in* is ambiguous between a directional particle (as in *He walked in*) and a locative preposition (as in *He walked in the woods*). From the current perspective, only the latter *in* is relevant for the containment between the allative and the locative (since the particle is not locative, but directional).

Noonan further argues that the *in* in *into* is more likely the directional particle. Her reasons are the following: (i) *into* is mirrored by expressions with unambiguous particles (like *up to*) and never with unambiguous adpositions (**above-to*). (ii) Some verbs do not combine with *to* (**She put the box to the tree*), but they combine with *into* (*She put the book into the box*). This would be unexpected if the underlying structure was *to in*, with *to* the allative head in both cases. However, if *in* is analyzed as a directional particle, then the grammaticality of *into* after *put* is compatible with the locality of selection, because *put* can combine with the directional particle *in*, as in *She put them in*. As a consequence of both the initial uncertainty about the status of *in/on* and Noonan's reasoning, I do not consider the English pattern in the following discussion as a relevant example of the containment at hand.

is at odds with the observed containment facts. In other words, there must be more than one way to derive a *ABA pattern in the grammar.

The particular solution I will be arguing for in this paper is shown in (15), drawing inspiration from Bobaljik & Sauerland (2017). The basic idea is that each of the Tigrinya suffixes faithfully reflects one underlying feature (or a set of features), which can be called A and B. This is depicted in the table below:

(15) Decomposing the *Tigrinya* forms

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
ab = [A]		*ab*	*ab*
ne = [B]	*ne*	*ne*	
FORM	*ne*	*ne+ab*	*ab*

What we see in the table is that the marker *ab*, which appears in the locative and the allative, corresponds to the pronunciation of a (set of) feature(s) labelled A. The marker *ne*, which appears in the dative and allative, spells out a different (set of) feature(s), call it B. In this decomposition, the allative has both (sets of) features, so both markers appear. To distinguish this type of decomposition from the traditional cumulative one, I will be calling it an overlapping decomposition.

The goal of the paper is to show that if the overlapping decomposition is adopted, the Nanosyntactic model of grammar is able to derive both the containment facts and the syncretism facts (i.e., Blansitt's generalisation reported in (1)). A crucial element of deriving the result will be provided by the so-called Superset Principle.

The second goal is to argue that this is a non-trivial result. In particular, I will show that under the overlapping decomposition, the Subset Principle (traditionally used in DM) cannot derive simultaneously the presence of an AAA pattern and the absence of a *ABA pattern, a crucial problem if Blansitt's generalisation is correct. This point also sets the current model apart from Bobaljik's and Sauerland's (2017) proposal, where the Subset Principle finds an analogue in the operation of feature unification.

Before I get to the argument, I need to enrich the overlapping decomposition by adding structure to the features A and B, as this is going to feed into a discussion about various types of DAT-LOC syncretism later on.

4 On the ordering of dat and loc

Let me start the argument for a layered representation of the features by repeating the original table with overlapping decomposition.

(16) Decomposing the *Tigrinya* forms

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
ab = [A]		*ab*	*ab*
ne = [B]	*ne*	*ne*	
FORM	*ne*	*ne+ab*	*ab*

In this table, the features A and B form a single feature set (a bundle), subject to insertion. Such a proposal (similarly to Blansitt's own depicted in (9)) leaves it very much open what the mutual order of DAT and LOC is going to be with respect to each other. Yet the data presented in section 2 point to an interesting asymmetry. In order to see it, let me abstractly recapitulate the orders we have seen:

(17) a. DAT—LOC—N (Tigrinya, Macedonian)
b. N—LOC—DAT (Malayalam, Tsez, Waris)
c. N—DAT—LOC (Iatmul)

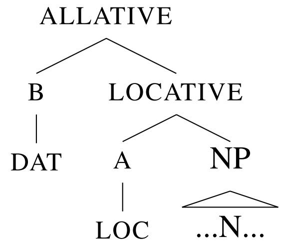
Ignoring (the rare) (17c) for the moment, we may note that the (relatively most popular) order (17b) is the mirror image of (17a) (and vice versa). In both of these orders, the locative marker is closer to the noun than the dative marker. However, this relatively strong tendency is not captured by the simple overlapping system of the Table (16).

4.1 A hierarchy of features

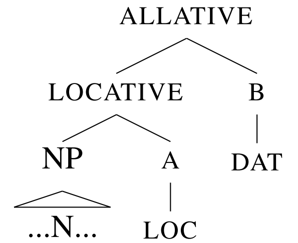
A simple way of extending the overlapping model and accounting for such orders is to postulate a *hierarchy* of features inside the allative. The LOC feature (which is closer to the noun) combines with it first, and the DAT feature joins them only later. This is shown in (18).[8]

[8] In the tree structures, I am assuming that datives and locatives have phrasal scope, and combine with a full extended NP. This has been the case in all of the languages we have looked at, which have a single case marker for the whole noun phrase, and this marker either precedes or follows the noun phrase. There are also languages where the case markers attach more narrowly to nouns. I will understand such languages as a special instance of the general scenario, namely one where the

(18) a. Tigrinya / Macedonian



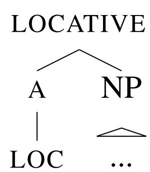
b. Malayalam / Tsez / Waris



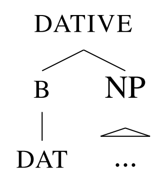
The hierarchies in (18) not only capture the orders (17a,b), they also make sense semantically. Specifically, in the literature on Paths (of which allatives are an instance), it has been repeatedly argued that Paths are construed on the basis of locations; see Jackendoff (1983); Koopman (2000); van Riemsdijk & Huybregts (2002); Zwarts (2005); den Dikken (2003); Cinque (2010); Svenonius (2010). In (18), we see nothing but an instance of this general scenario.

For completeness, let me also give here the structures I am assuming for locatives and datives in Tigrinya and Macedonian.

(19) a.



b.



The locative in (19a) denotes a static location, with the feature A mapping the NP object (a thing) onto a particular location defined with respect to that thing. The Feature B (which appears on top of that location in (18)) contributes the meaning of a transition to that location, such that at the end of the event, the Theme argument is at that location. When the very same feature is merged on top of an (extended) NP, as in (19b), it keeps the meaning of a transition. However, the Theme now does not undergo a transition to a different location, but (prototypically) to a different person (denoted by the complement of B in (19b)), which is quite in line with what datives actually mean.

Finally, I want to make explicit a convention that I am adopting in the labelling of the structures. In particular, the labels of the phrasal projections are chosen so as to reflect clearly the case of the whole NP, i.e., whether it is a locative, a dative or allative. More accurately, these constituents should of course be labelled as an AP or a BP, but this is quite unenlightening, so I prefer the intuitive labelling (even

NP contains just the noun (and all the modifiers are located outside of the constituent that contains the noun and its case marker). If also modifiers are marked for locative case, I assume that multiple projections hosting the features A and B are generated in the projection line of the NP modifier.

though it is less technically accurate). This leads to the consequence that the feature B sometimes projects to a dative, and sometimes to an allative, but this is just a consequence of the convention.

In sum, the idea is that the features A and B correspond to independent heads. When they both appear on top of the noun phrase, they are hierarchically ordered. But each of them may also be added directly on top of an NP independently of the other head. The lower head A thus counts as a "skippable" head in the sense that its presence is not required by the higher head B. In this respect, it is similar to negation, which may be present or not (Starke 2004). Note that it is exactly the possibility of "skipping" a head what gives rise to the overlapping decomposition; if the presence of that head was required by the higher B head (for semantic or other reasons), there would only be feature cumulation. So a potential conclusion at this point is that cumulation arises where functional heads may not be missing so to speak "in the middle" (as in Caha 2009 or Bobaljik 2012), while the overlapping decomposition arises when they can.

The last remark I want to add here is that the representations are simplified to the bare minimum. In reality, both the A and B features each corresponds to a number of separate functional heads (see Caha 2009 for a nanosyntactic approach to case and Pantcheva 2011 for spatial expressions), but this is irrelevant for the overlapping decomposition for as long as the middle cell is composed of the A region and the B region.

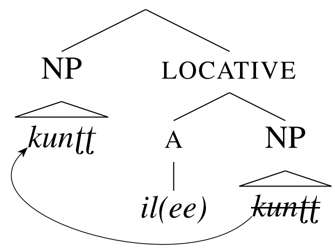
4.2 N-movement

Let me now come back to the Iatmul order N-DAT-LOC, recall (17c). This order is problematic, because the dative appears between the noun and the locative, as if the scope structure was reversed. How can we make sense of this?

It seems to be significant that the problematic example involves morphemes in the position after the noun, rather than before the noun, where only the scope respecting order is found. This asymmetry is reminiscent of Greenberg's (1963) Universal 20, as well as Cinque's (2005; 2009) work on the same topic. Specifically, both Greenberg and Cinque point out that modifiers preceding the noun always occur in a single (scopal) order, while their order may vary in the position after the head noun. Cutting a long story short (and relying on the reader's familiarity with Cinque's work), all of this suggests that the structure of the post-nominal order is slightly more complicated than suggested in (18b). (The analysis of the pre-nominal order remains intact.)

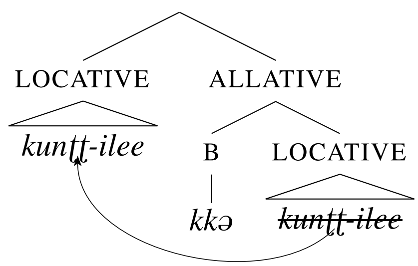
The basic idea that Cinque pursues is that all orders that deviate from the pre-nominal (scopal) order are derived via leftward movement of a constituent that contains the head noun. Let me illustrate the idea on the mirror image order attested in Malayalam, Waris and Tsez. I start by showing the structure of the locative in (20). Here, the NP is first merged as the complement of the locative marker (as it would be in Tigrinya or Macedonian). However, it then moves across that marker, and ends up preceding it as a result. (This movement is absent in Tigrinya.)

(20)



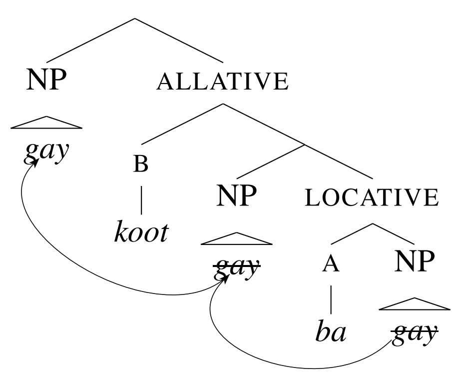
The allative is derived from the locative by the addition of the feature B, see (21). After B is merged, the whole locative structure then moves across this feature, leading to the mirror image order N-LOC-DAT. Once again, the movement of the noun (including its locative marker) across DAT is absent in Tigrinya and Macedonian. (21) is then the new structure for Malayalam and its kin.

(21)



Generating post-nominal orders by movement will now allow us to place Iatmul back on the map. In a theory along Cinquean lines, the start of the Iatmul derivation is the same as in Malayalam. Specifically, after merging the locative *ba* to the left of the noun, we move the noun across that locative exactly as we did in (21a). Then we add the dative, and the noun moves again. However, when this second movement takes the noun past the feature B in Iatmul, only the noun itself moves higher up; the locative is not pied-piped. The derivation is shown in (22).

(22)



The enrichment of our theory by movement thus brings a beneficial effect. Whereas before we couldn't make good sense of the Iatmul data (it seemed like a contradiction to the proposed scope relations), we can now understand the Iatmul structure as a very slight modification of the Malayalam structure. The difference between the languages has nothing to do with the underlying scope; the only difference is whether the noun pied-pipes the locative marker along or not.

4.3 Conclusions

In sum, by proposing a layered representation of the allative, we make an important step towards understanding the attested morpheme orders. Specifically, languages seem to prefer orders where the locative is closer to the noun than the dative. This is captured by the proposal that the locative feature A combines with the noun first and the feature B is added later.

By further adopting Cinque's theory of post-nominal orders, we can also explain the fact that in the post-nominal position, we find some rare mirror-violating orders. As always, there are alternative ways of accounting for such orders (see, e.g., Abels & Neeleman 2009). Nevertheless, a layered underlying representation is the key to explaining such facts on any account I am aware of.

5 Overlapping decomposition and the *ABA

With the layered overlapping decomposition in place, we are ready to tackle the initial observation (1): in the sequence DAT-ALL-LOC, only adjacent cases show syncretism. My main point in this section will be that two broad classes of theories can be distinguished by their (in)ability to derive all the attested syncretism patterns, while ruling out the one which is unattested. The first class of approaches is based on some form of "underspecification;" I argue that such theories fail to derive the constraint. The alternative is represented by an approach based on "overspecification;" this approach delivers the constraint in exactly the shape needed.

The term "underspecification" goes back at least to Jakobson's (1962) pioneering work on case syncretism. His idea was that lexical items, which appear in more than one cell of the paradigm, are "underspecified" with respect to a particular morphological context. For instance, if there are two cells, one with the feature A and another cell with the features A,B, a morpheme that is lexically specified as A may appear in both of these contexts. The so-called Subset Principle of Distributed Morphology (Halle & Marantz 1993; Halle 1997) is an example of this approach, but its logic is widely adopted across a relatively broad spectrum of theories.

(23) Underspecification

	CELL 1 [A]	CELL 2 [A,B]
marker α = [A]	α	

An alternative approach based on "over-specification" has recently been proposed by Starke (2009). In the context of Starke's work, the main reason for abandoning underspecification is that it does not work for phrasal spell out (see Caha 2017 for an overview of the issues). As a way of resolving the problems, Starke proposes that a successful spell out requires that the lexical entry corresponds to a superset of the syntactic structure to be spelled out, hence the name the "Superset Principle." The immediate consequence for syncretism is that if there are (the same) two cells, [A] and [A,B], a morpheme that appears in both contexts must be lexically specified as [A,B] (rather than just [A], as the underspecification approach would entail). Such a morpheme can appear in all cells whose feature specification it contains, and hence also in the two cells under discussion.

(24) Over-specification

	CELL 1 [A]	CELL 2 [A,B]
marker α = [A,B]	α	

The difference between the approaches may appear rather cosmetic and purely theoretical—and indeed, many morphological puzzles and generalisations find an explanation under both accounts. For instance, the *ABA pattern can be derived under the cumulative decomposition regardless of whether one adopts the underspecification approach (as in Bobaljik 2012) or the over-specification approach (as in, e.g., Caha 2013). However, for the case at hand, the shift from underspecification to over-specification has rather important empirical consequences. In what follows, I first show that an approach based on over-specification succeeds in restricting syncretism to the AAA, AAB and ABB patterns, while ruling out the *ABA pattern. Then I argue that an approach based on underspecification cannot achieve this goal (specifically, it cannot simultaneously allow an AAA pattern while at the same time ruling out a *ABA pattern). The result is that the move from underspecification to over-specification is not just a cosmetic change, but a step that is required on empirical grounds.

5.1 Deriving the *ABA

Let me now turn to the issue of how an over-specification based account derives the syncretism facts. “The syncretism facts” in the context of this paper corresponds to the following table, which is based on (6) and slightly enriched by the specific phonological shape of the relevant morphemes. On the last line of the table, I include also the fully differentiated pattern found in Basque.

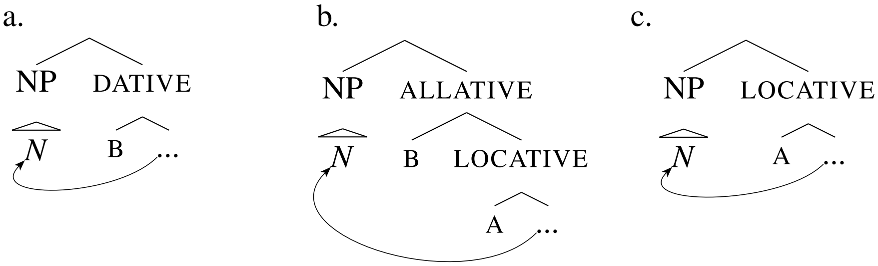
(25) The patterns to be derived

<table>
<tr><th></th><th>DATIVE
[B]</th><th>ALLATIVE
[A,B]</th><th>LOCATIVE
[A]</th></tr>
<tr><td>Japanese</td><td colspan="3">-ni</td></tr>
<tr><td>Pite Saami</td><td colspan="2">-j</td><td>-n</td></tr>
<tr><td>Dime</td><td>-in</td><td colspan="2">-ó</td></tr>
<tr><td>NOT ATTESTED</td><td>A</td><td>B</td><td>A</td></tr>
<tr><td>Basque</td><td>-ri</td><td>-ra</td><td>-an</td></tr>
</table>

For concreteness, I will present the account using a specific version of the over-specification theory, namely Nanosyntax (Starke 2009 et seq.), which is based on phrasal spell out. However, this is by no means necessary; one can also adopt sequential spanning (Williams 2003; Abels & Muriungi 2008; Taraldsen 2010) or various other conceivable approaches. As long as one keeps the logic of over-specification depicted in (24), the results follow, as will become clear as we proceed.

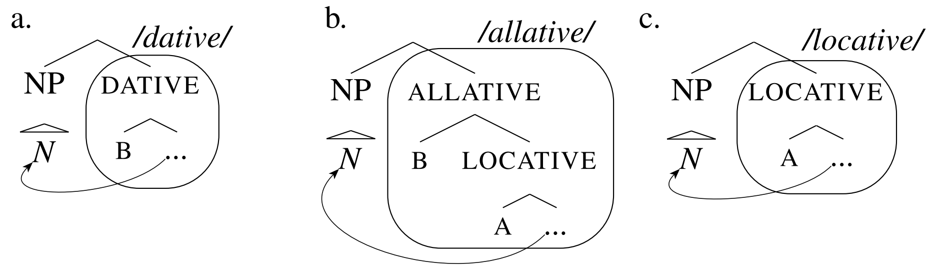
Phrasal spell out (which I adopt here) is a process that assigns phonetic interpretation to non-terminal (phrasal) nodes of the syntactic tree. For simplicity, I am assuming here that spell out actually makes no distinction between phrasal and terminal nodes, and applies equally well also to terminal nodes. Because of the reliance on node lexicalization, it is important to make explicit my assumptions about the structure of the languages with a single suffix like Japanese, Saami, Dime or Diyari. The basic idea is that the syntactic structures look the same as in Iatmul. In (26), I give the bare bones of such structures.

(26) a. b. c.

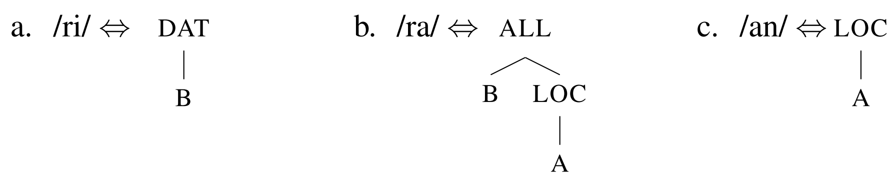


What these structures have in common is that the sister of the moved (extended) NP corresponds to a constituent which contains the features of the dative, the allative and the locative respectively.

These constituents are subject to spell out, as depicted in (27). Circles indicate the relevant constituents containing the features [B], [A,B] and [A] respectively.[9]

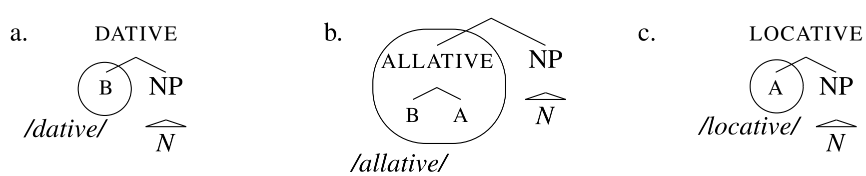
(27)


The constituents containing these features are pronounced by whatever phonology is provided by the language-specific lexical entry. For instance, recall that in Basque (2), each of the categories has a different marker. The lexical entries then look as in (28). Each of them perfectly matches its corresponding constituent in (27) (traces in (27) are ignored).

(28)


One technical thing that I want to mention here concerns the spell out of the allative. The allative contains the features A and B, so in principle, it could be realized by the combination of the locative and the dative marker (as in Iatmul, Malayalam and the like). This is blocked by the existence of the portmanteau marker *ra*, see (28b). In Starke (2009), this effect where a portmanteau entry blocks analytical expression

[9] For languages with prefixes/prepositions, I assume that the structures look as given in (i). See Starke (2017a); Baunaz & Lander (2017) for the discussion of how structures such as (ib) are generated.

(i)


by two markers is derived from the general mechanics of insertion and dubbed the "Biggest Wins Theorem."

Leaving Basque behind, the over-specification part of the theory becomes crucial when we want to account for syncretism. The particular technical implementation of the over-specification logic is given in (29). The principle has been proposed in Vanden Wyngaerd (2017) (building on Starke 2009).[10]

(29) *Revised Superset Principle (RSP)* (Vanden Wyngaerd 2017)
A lexical entry L may spell out a syntactic node SN if and only if the features of L are a superset of the features dominated by SN.

With the RSP in place, we can model the allative-dative syncretism (attested in Dime and Diyari) as a case where the lexicon lacks a dedicated locative marker, as indicated by the Ø in (30c). The specific phonology of the markers corresponds to that attested in Dime, but the same logic applies in all cases of ALL-LOC syncretism.

(30) a. /*-in*/ ⇔ DAT
B

b. /*-ó*/ ⇔ ALL
B LOC
A

c. Ø

With a dedicated locative entry missing, how is the locative structure—depicted in (27c)—pronounced? The answer is that the "allative" entry (30b) can apply at the relevant non-terminal node, because it contains all the features dominated by that node (i.e., A), as required by the RSP. In effect, this reasoning is a simple application of the general logic of over-specification to our specific case, as shown below:

(31) Over-specification in *Dime*

	LOC [A]	ALL [A,B]
-ó = [A,B]	*-ó*	

With the basic idea in place, let me now look at the Dime situation more closely. The important thing to note is that the entry for *-ó*, given in (30b), may in fact apply

[10] It would also be possible to use Starke's (2009) original formulation of the Superset Principle, if it was augmented with the pointer technology. Such an analysis is presented in Pantcheva & Caha (2012). I do not want to take a stand here on which of these two approaches is correct, but follow the one suggested in the main text for ease of exposition. Exploring the various technical consequences of the two approaches would take me too far away. Pantcheva & Caha (2012) also contain a discussion of the ablative case that is compatible with the current account.

not only in the allative and locative, as shown in (31), but also in the dative. The assumed insertion structure for the dative is in (27a), and the non-terminal contains just the feature B. Therefore, *-ó* with the entry (30b) can spell out this node, because it contains all the features dominated by that node.

Despite its applicability, we never see *-ó* in the dative. This is due to the existence of a dedicated dative entry for *-in*, depicted in (30a). This latter entry may also apply in the dative (it contains all the features), and this leads to a competition between *-in* and *-ó*. The winner is determined by the so-called Elsewhere Condition (going back to Kiparsky 1973). The Elsewhere Condition says that when two competing entries/rules may apply to a particular node, precedence is given to the rule which applies in a proper subset of cases compared to the other rule. And this is the dedicated dative entry.

In order to see more clearly how the competition logic works, let me repeat both entries and their applicability in a table. The applicability of a given entry in a particular case is highlighted by shading:

(32) Competition in *Dime*

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
-in ⇔ [B]			
-ó ⇔ [B [A]]			
AFTER COMPETITION	*-in*	*-ó*	*-ó*

What we see here is that the entry for *-ó* can apply in all of the relevant cases, because its entry contains the features of each and every cell. I will be calling this type of an entry a "default" or an "elsewhere" entry. Since the default is by definition applicable everywhere, it will always lose to a competitor, should there be one. In Dime, there is a competitor *-in* in the dative (where it wins against the default), and the default entry surfaces in all the other cases. The more specific *-in* is highlighted by a darker shade.

The very same system also easily captures the DAT-ALL syncretism attested in Pite Saami. The relevant entries are given below:

(33) a. Ø

b. /*-j*/ ⇔ [ALL B [LOC A]]

c. /*-n*/ ⇔ [LOC A]

The applicability of these entries is computed with reference the Revised Superset Principle (29) and depicted by shading in the following table:

(34) Competition in *Pite Saami*

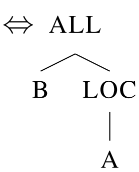
	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
-n ⇔ [A]			
-j ⇔ [B [A]]			
AFTER COMPETITION	*-j*	*-j*	*-n*

The table shows that *-j* is applicable in all the cases, and it loses in competition to the dedicated locative entry.

Finally in Japanese, we only find the default entry:

(35) a. Ø

b. /*-ni*/ ⇔



c. Ø

In Japanese, *-ni* has no competitor and appears in all the cells:

(36) Competition in *Japanese*

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
-ni ⇔ [B [A]]			
AFTER COMPETITION	*-ni*	*-ni*	*-ni*

At this point, we have seen how all the attested syncretism patterns arise. The general logic is that there is a maximally over-specified default entry which fills any cell for which a dedicated competitor is missing. The next crucial point is to show that—while allowing all the attested patterns—this system does not allow the generation of an ABA pattern. In order to show that, I will try to produce the lexical entries needed for an ABA pattern to arise. However, we will see that such entries are impossible to make. And because it is impossible to set up the required entries, this just means that the system cannot derive an ABA pattern.

Imagine then that we want to write the entries for A and B in a way that would yield an ABA pattern. The entry A appears in both DAT and LOC (the two endpoints of the scale), so A must be specified for both the dative feature B and also the locative A. In other words, it must be specified in exactly the same way as all the default entries like the Japanese *-ni*.

(37) $A \Leftrightarrow$ [B [A]]

What we now have to ask is how to set up a competitor to this entry that would win over it in the allative and no other case than the allative. In order to appear in the allative, the entry B would have to contain the features A and B, because these are the features that characterise the allative. By specifying the entry for all and only the allative features is the best strategy to make this entry specific to the allative. I write the entry below:

(38) $B \Leftrightarrow$ [B [A]]

However, what we now see is that the dedicated allative entry has (by necessity) exactly the same specification that we arrived at for the default entry in (37). So the two hypothetical entries are identical, which contradicts the set-up: we were supposed to create a competitor that *wins* in the allative, and not one that is at a tie with the default entry. (I assume the entries are in a tie because they have the same specification, so one cannot be more specific than the other.)

Whether languages can actually assign different phonology to two identical meanings is an orthogonal matter; if not, well and good, B cannot even exist. If languages can have two distinct ways to pronounce one and the same meaning, we will probably expect that there is either a phonological or some other conditioning that will break the tie; but this will lead to an AAA pattern in one phonological environment and to a BBB pattern in the other. But in no case do we get the ABA pattern (QED). To conclude, we may note that the over-specification approach—applied to the overlapping decomposition—delivers all and only the attested patterns of syncretism and rules out the one pattern which is not attested. This is an important result, since now we can simultaneously capture both Blansitt's generalisation and the (initially problematic) containment patterns. The cumulative decomposition gave us no means of doing so.

5.2 Underspecification and the *ABA

Let me now turn to underspecification-based approaches. I start the discussion by presenting one of the canonical instantiations of such an approach, namely the Subset Principle.

(39) *The Subset Principle* (Halle 1997)
[The Subset Clause:] The phonological exponent of a Vocabulary Item is inserted into a morpheme of the terminal string if the item matches all or

only a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme.
[The Elsewhere Clause:] Where several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features in the terminal morpheme must apply.

The Subset Principle can be divided into two parts; the first one (The Subset Clause) defines the range of applicability of Vocabulary Items (VIs). It basically says that a VI can apply when it corresponds to a subset of the node which it is to be inserted into. The second part says what happens when more than one VI can be inserted into single slot: we get competition among them, and the most specific entry is chosen.

What we now want is to see how the Subset Principle derives the range of the attested patterns, and rules out the unattested one. The relevant patterns are repeated in (40) for convenience. (The fully differentiated Basque paradigm is omitted as I will no longer discuss it.)

(40) The syncretism patterns to be derived

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
Japanese	*-ni*		
Pite Saami	*-j*		*-n*
Dime	*-in*	*-ó*	
NOT ATTESTED	A	B	A

The Subset Principle is standardly applied within a theory which spells out only terminal nodes. I will then simply assume that the more accurate layered representation is simplified into a single terminal node by Fusion prior to insertion. This has several drawbacks, but I will not dwell on the issues here (see Chung 2007; Caha 2009; Haugen & Siddiqi 2016).

Now in order to model Japanese, we will need to have a lexical entry which is applicable in all three cases. Since these cases have no features in common, this entry will have to be radically underspecified, and marked only for spelling out the case node, which I am calling K after Bittner & Hale (1996). The entry is given in (41), and corresponds to the default entry.

(41) $ni \Leftrightarrow [_K\ \text{Ø}]$

One could also introduce a feature C common to all three cases, and have *-ni* specified for this feature. This is not going to change the logic of the system, so I will simply go on with the entry (41).

Consider now the question of how to model Pite Saami. In this language, we have the ending *-j* which appears in the DAT and ALL. These two cases share the feature B. So in (42a), I show the entry for *-j* with exactly that specification.

(42) a. $\textit{-j} \Leftrightarrow [_{K}\ \text{B}]$
b. $\textit{-n} \Leftrightarrow [_{K}\ \text{A}]$
c. $\textit{-n} \Leftrightarrow [_{K}\ \text{Ø}]$

In Pite Saami, we also have the locative case ending *-n*. One could speculate that this marker spells out the feature A (characteristic for the locative and the allative); an entry like that is shown in (42b). This would correctly lead to the emergence of *-n* in the LOC. However, it would also lead to a competition between *-j* and *-n* in the allative, which has both the feature B of *-j* and A of *-n*. The Elsewhere Clause would not be able to determine a winner in such a competition, because both *-n* and *-j* are equally specific (each spells out one feature). So an extrinsic ordering statement would be needed to make *-j* win over *-n*.

Extrinsic ordering is avoided if instead *-n* is treated as a default and specified like the Japanese *-ni*, see (42c). With such a specification, it could in principle appear in all the three cases. However, due to the existence of a more specific competitor, *-n* will not appear in those cases where *-j* does. This leads to the correct result, as depicted in the table (43).

(43) Competition in *Pite Saami*

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
$\textit{-j} \Leftrightarrow [_{K}\ \text{B}]$			
$\textit{-n} \Leftrightarrow [_{K}\ \text{Ø}]$			
AFTER COMPETITION	*-j*	*-j*	*-n*

This approach to Saami is not only more elegant than the first one, it can be easily extended to Dime. For this language, we need the entry for *-ó* (which appears in DAT a LOC); this will be specified for the feature A (common to these two cases). The marker *-in* will then be maximally underspecified, and emerge in the dative simply for the lack of a more specific competitor. The following table shows the logic behind the proposal:

(44) Competition in *Dime*

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
-ó ⇔ [$_K$ A]		■	■
-in ⇔ [$_K$ Ø]	■	■	■
AFTER COMPETITION	*-in*	*-ó*	*-ó*

The conclusion is then that the Subset Principle when combined with the overlapping decomposition provides the tools necessary to capture all the attested patterns of syncretism.

However, what turns out to be problematic is that the generative capacity of the system is too great: the system can also generate ABA patterns (which are unattested). I show this by providing lexical entries for a marker A and a marker B such that their competition yields exactly the ABA distribution. Let me start by providing the specification for A. A can be modelled simply as an underspecified default marker, analogous to the default markers of Japanese, Saami and Dime. As shown in the table below, this marker can appear in all contexts. To this default entry, we add a marker B that is specified for the combination of the features A and B. The result is an ABA pattern:

(45)

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
B ⇔ [$_K$ A,B]		■	
A ⇔ [$_K$ Ø]	■	■	■
AFTER COMPETITION	*A*	*B*	*A*

It is not clear to me how to avoid this undesirable consequence. In Bobaljik & Sauerland (2017), the derivation of *ABA patterns is avoided by not allowing (within an abstract model) the existence of radically underspecified entries like the one for Japanese *-ni*. Once a radically underspecified entry is not allowed, it is impossible to set up the competition scenario shown in (45). At the same time, the impossibility of a radically underspecified entry leads to the impossibility to generate an AAA pattern, which is attested in the realm of Blansitt's generalisation. Within the system presented in Bobaljik & Sauerland (2017), an AAA pattern would require the introduction of a third feature, C, common to all the cells. With such a feature present, however, a *ABA pattern can be generated again. So the issue for the underspecification approach is how to provide for the existence of an

AAA pattern where a *ABA pattern is attested, keeping in mind the overlapping type of morphological containment.

As far as I am able to tell, there are two possible conclusions that the facts provide in relation to Bobaljik's and Sauerland's model. The first possibility is simply that Blansitt's generalisation is not an instance of the overlapping decomposition (in spite of the interesting containment facts). The second possible avenue to explore is to change Bobaljik's and Sauerland's model slightly in a way that underspecification is replaced by over-specification. If I understand the model correctly, underspecification finds an analogue in their system in the operation of feature unification/conjunction. It allows for the statement of rules such as: when a particular node/cell has *both* the feature A *and* B, spell it out as *x*. In this setup, changing underspecification to over-specification corresponds to replacing feature unification by feature disjunction, in effect leading to rules such as: if a cell contains the feature A *or* B, spell it out as *x*.

In relationship to the DM model overall, the implication is the same: either the decomposition proposed here is wrong, or the Subset Principle should be rejected in favour of an over-specification alternative. An anonymous reviewer points out in this context that in DM, there are actually at least two ways to model syncretism. Underspecification is one of them, and the other is Impoverishment. Impoverishment is a post-syntactic feature deleting operation; it can, for instance, eliminate the feature B in the context of the feature A, thus changing the allative specification [A, B] to a locative specification [A]. The result is a syncretism between the allative and the locative without the need to use underspecification. The reviewer then suggests that the current argument shows that underspecification may generate ABA patterns, but it is not clear how that relates to DM as a theory, since the theory has in fact more than one way to model syncretism.

I think that despite the correctness of these observations, my argument here does apply to DM to the extent that it uses the Subset Principle. The point is that any theory which contains an underspecification component will be able to generate an ABA pattern with an overlapping decomposition, regardless of how many additional ways of modelling syncretism (Impoverishment, rules of referral, etc.) it contains. DM would only be immune to the problem if it dropped underspecification altogether and all syncretism was treated by Impoverishment, depending, of course, how the details of that operation would be specified.

5.3 Conclusions

The goal of this section was to see how to derive the *ABA generalisation under the overlapping decomposition. In the first sub-section (5.1), I showed that the Superset Principle (more specifically, the Revised Superset Principle) interacts with the overlapping decomposition exactly as required to capture the facts; all the attested syncretisms can be derived, and a *ABA pattern is underivable. In section 5.2, I looked at the issue from the perspective of the so-called Subset Principle. What we have seen is that attempts to derive simultaneously the presence of an AAA pattern and the absence of the ABA pattern lead to non-trivial problems.

The most important conclusion is, however, that it is possible to derive Blansitt's generalisation in a model that does not rely on feature cumulation. If feature cumulation is replaced by feature overlap, we can capture both the containment facts and the syncretism facts surrounding datives, allatives and locatives. In general, we are led to the conclusion that there is more than one way to derive a *ABA pattern, and that the choice of the right analysis depends on the containment patterns found.

6 Locative nouns

In this section, I provide further evidence for the over-specification approach. The evidence is drawn from a rather peculiar instance of the DAT-ALL syncretism, available only for a small number of special nominals, called locative nouns henceforth. I argue that this particular instance of syncretism can be captured under the proposal that such nouns may spell out the locative feature A alongside with the N feature. In an over-specification approach, it is predicted that such locative nouns can also function as ordinary nouns (Ns). This is not so in an underspecification approach, where the specification N+A is incompatible with the regular noun use, characterised by N alone.

In order to show the pattern and its implications, I start by repeating the containment pattern found in Malayalam:

(46) *Malayalam*: N-LOC-DAT (Asher & Kumari 1997: 107, 113)

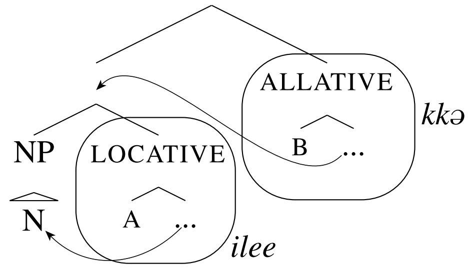
a. Hanipha eni-**kkə** ii pustakan tannu.
   Hanifa I-DAT this book gave
   'Hanifa gave me this book.' Recipient

b. Kiḷihaḷ kunṭṭ-**ilee**-**kkə** parannu pookunnu.
   birds nest-LOC-DAT fly.PP go.PRES
   'The birds fly to their nests.' Goal

c. Viiṭṭ-**il** aarokke uṇṭə?
   house-LOC who all be.PRES
   'Who are there at home?' Location

In (47), I provide the structure of the allative, including my assumptions about how the structure is spelled out.

(47)



The lexical entries of the individual markers are shown in (48). What leads to case compounding in Malayalam is simply the fact that there is no lexical entry that spells out both A and B at the same time, and so they have to be spelled out separately.

(48) a. *kkə* ⇔ ALL | B b. Ø c. *-il(ee)* ⇔ LOC | A

In other words, the only reason why Malayalam (and other languages like it) show case compounding is because they lack a portmanteau for A and B, as indicated in (48b). In fact, the existence of such languages (i.e., languages without a dedicated allative entry) fits perfectly into the logic explored in section 5.1, where we investigated the consequences of the absence of some tailor-made entries for particular cases. In that section, we looked at what happens when the dative or the locative entry were missing, but I did not comment on the third expected logical option, namely the absence of the allative entry. What we now see is that this expected logical option is attested, and it leads to case compounding.

Against this background, consider the following fact. It turns out that in Malayalam, there are actually a couple of nouns which have a different pattern than the one shown in (46). This new pattern is shown in (49). We see here an allative context, where the locative suffix is absent, and only the dative suffix appears on the noun. The result is a DAT-ALL syncretism.

(49) *Malayalam* (Asher & Kumari 1997: 225)
ɲaan tɪʃʃuur-kkə pooyi.
I Trichur-DAT go.PAST
'I went to Trichur.' Goal

How should we account for this fact? Note that it is impossible to treat this as a regular instance of a DAT-ALL syncretism, as in Pite Saami. In Pite Saami, recall, we had the entries in (50), which gave rise to the competition as in (51):

(50) a. Ø

b. /-*j*/ ⇔ ALL
 B LOC
  A

c. /-*n*/ ⇔ LOC
 A

(51) Competition in *Pite Saami*

	DATIVE [B]	ALLATIVE [A,B]	LOCATIVE [A]
-*n* ⇔ [A]			
-*j* ⇔ [B [A]]			
AFTER COMPETITION	-*j*	-*j*	-*n*

While this system does indeed lead to a DAT-ALL syncretism, the problem is that it does not provide any space for case compounding. If the Malayalam -*kkə* was like the Pite Saami -*j*, the regular case-compounding pattern would be a complete mystery. So we are forced to keep the entries (48) in place, and look for a different solution.

The very same pattern (leading to the very same puzzle) can be observed also in Tsez. In this language, the allative (-*xo-r*) also corresponds to the combination of the locative (here more specifically the adessive) and the dative, see the table below.

(52) *Tsez* (Comrie & Polinsky 1998: 101, 104)

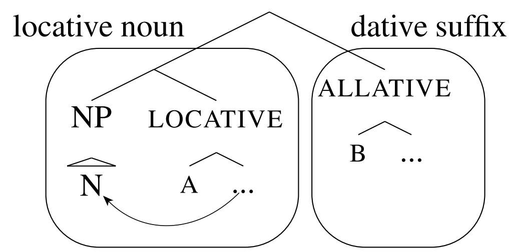
	fish
ABS	*besuro*
DAT	*besuro-r*
ADE	*besuro-x(o)*
ALL	*besuro-xo-r*

However, as Comrie & Polinsky (1998: 104) point out, the locative suffix may be absent "after certain nouns with inherently locational semantics," and the dative suffix -*r*, attached directly to such nouns, yields a spatial goal directional interpretation, see (53b). This fact is analogous to the unexpected DAT-ALL syncretism in Malayalam.

(53) a. *idu* 'home'
b. *idu-r* lit. 'to home'

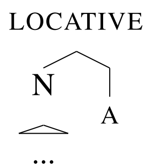
It turns out that the hierarchical model of feature arrangement provides a pigeonhole into which an account of such patterns can be fitted. The idea is that the particular special nouns "with inherently locational semantics" in fact spell out not only the N node, but also the locative feature A, thereby making the feature inaccessible for further insertion. This is depicted in (54).

(54)



The entry of these locative nouns (which allows them to spell out the relevant constituent) is shown in (55) (cf. Caha & Pantcheva 2015).

(55) inherently locative nouns ⇔



The Revised Superset Principle allows such entries to further spell out any subset of such a feature specification, and so these special locative nouns can also be used as regular nouns (inserted under N).[11]

With the "locative-noun" proposal in place, the result is that we now have two different ways to get a DAT-ALL syncretism. Interestingly, each of the two proposals predicts slightly different empirical patterns outside of the syncretism itself. I will now go through three such differences and show in what way they are predicted by the proposal in (55).

The first difference is the following. In Pite Saami, DAT-ALL syncretism arises because we have a default entry for the features A and B, which is in principle applicable in all cases. The reason why it does not appear in the locative is that in LOC, it loses to a dedicated competitor, recall (51). This predicts that we actually need such a locative competitor to appear in the place of the default ending. This is abstractly depicted in (56), which encodes the fact that the DAT/ALL AFF1 alternates with AFF2 in LOC.

(56) The abstract pattern of Pite Saami

a. DAT/ALL = noun-AFF$_1$
b. LOC = noun-AFF$_2$

[11] They could also in principle be used as the spell out of the feature A, but this does not happen due to competition: *il(ee)* is more specific in this context and wins.

In languages of the other type, there is no such default entry, and we actually do not need a dedicated competitor for the locative. Rather, the prediction is that the special locative noun should be able to express the meaning of a simple static location on its own.

(57) The abstract pattern predicted for locative nouns

a. DAT/ALL = noun-AFF$_1$
b. LOC = noun

The prediction borne out. For Tsez, Comrie & Polinsky (1998: 104) note that the form *idu* is not only the absolutive form of the noun 'home,' it is also a form that means 'at home.' The full paradigm is then as shown below:

(58) *Tsez* (Comrie & Polinsky 1998: 104)

	fish
ABS	*idu*
ADE	*idu*
DAT	*idu-r*
ALL	*idu-r*

The same seems to be true for Malayalam, although Asher & Kumari (1997) do not mention this directly. However, it can be deduced from the facts they discuss. The starting point is that with certain verbs, Malayalam allows the locative (without the accompanying dative) to express a goal of motion. (This is similar to the alternation between *He jumped in**to** the water* (goal overtly marked) and *He jumped in the water*, with a goal reading of a simple locative.) The Malayalm alternation can be seen in (59):

(59) *Malayalam* (Asher & Kumari 1997: 225)

a. ɲaan paʈʈaɳatt -ilee -kkə pooyi.
I town -LOC -DAT go.PAST
'I went to town.'

b. ɲaan paʈʈaɳatt -il pooyi.
I town -LOC go.PAST
'I went to town.'

It is tempting to analyse (59b) along the lines of Fábregas (2007), where the verb spells out the change-of-state feature B, leaving only the pure locative (the projection of A) for spell out by other markers.

The locative noun 'Trichur' is expected to participate in the same alternation. This means that in the construction analogous to (59b), we expect that the whole locative phrase (rendered by *N-il* in (59b)) is going to be spelled out by the special locative noun 'Trichur' alone. This prediction is borne out and the noun appears in its nominative shape without the locative marker:

(60) *Malayalam* (Asher & Kumari 1997: 225)
ɲaan tɹʃʃuurə pooyi.
I Trichur.NOM go.PAST
'I went to Trichur.'

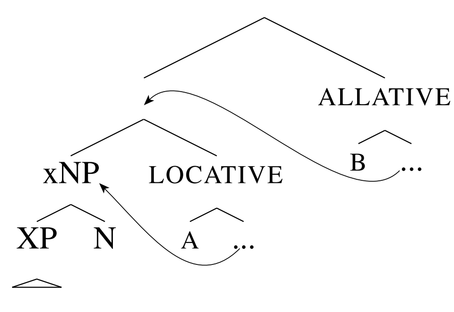
This shows that the noun itself can express a location, as predicted under the "locative noun" proposal.

The second difference between a language like Pite Saami and a language like Malayalam pertains to the number of nouns that exhibit the syncretism. In Malayalam, all nouns which exhibit the DAT-ALL syncretism must be lexically stored as a special class of nouns. In Pite Saami, the DAT-ALL syncretism is a matter of the affixes, and does not care about what the peculiar class of the noun happens to be.

This difference is confirmed by the initial observation that both in Tsez and Malayalam, the DAT-ALL syncretism is only available for a small subset of nouns that are explicitly mentioned in grammars as "exceptions." In Pite Saami, all nouns show the DAT-ALL syncretism.

The third predicted difference is that in a language like Malayalam, the DAT-ALL syncretism should be unavailable when the noun is modified. To see why that is so, consider again the structure of the Malayalam-style language below:

(61)



What we see here is a noun modified by an XP inside the extended projection of the noun, notated as xNP. This XP is located inside the constituent over which the locative feature A takes scope. (Recall that locative marking has phrasal scope in Malayalam, and it is realised on the last element of the extended NP, i.e., on the noun itself.)

In such a structure, the special locative noun cannot be inserted at the phrasal node containing the locative feature A and the noun, because this constituent also contains an intervening XP. So in case the noun is modified, the DAT-ALL syncretism should be impossible. The prediction is borne out, as shown in (62a), which makes a minimal pair with (49).

(62) *Malayalam* (K. Jayaseelan, p.c.)

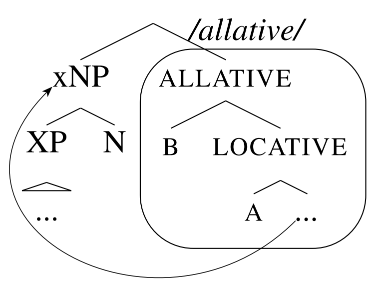
a. *ɲaan nammuDe aa pazhaya tɹʃʃuur-kkə pooyi.
I our that old Trichur-DAT go.PAST
'I went to our old Trichur.'

b. ɲaan nammuDe aa pazhaya tɹʃʃuur-**ilee**-kkə pooyi.
I our that old Trichur-LOC-DAT go.PAST
'I went to our old Trichur.'

How is the structure (61) lexicalised? The model predicts that when no portmanteau marker matches the whole constituent containing N, the feature A and the modifiers, then the abstract meaning components will have to be pronounced separately. Therefore, the locative noun will have to spell out only the N node, and the locative feature (A) will be spelled out separately, exactly as with any ordinary noun, recall (47). This prediction is borne out. When the locative marker is restored in a position after the noun Trichur, the sentence becomes grammatical again even in the presence of nominal modifiers, see Last. The restored locative marker *il(ee)* is in bold.

Pite Saami is expected to contrast with Malayalam on this count. In order to see why, recall that in Saami, the reason why there is just a single morpheme marking the allative function is due to the joint spell out of A and B. This is shown in (63), repeated from (27b), but with the noun modified:

(63)



In this structure, it does not matter for the joint spell out of A and B whether the noun is modified or not, because the modifier is not present inside the constituent that contains the relevant features. Therefore, we predict that the morpheme (syncretic for DAT-ALL) is the same both when the noun is not modified and when it is. The prediction is borne out, see (64a,b). In (64a), there is an example with a noun that is not modified. In (64b) the noun is modified. Unlike in Malayalam, the morphology on the noun is identical, as predicted.

(64) *Pite Saami* (Wilbur 2014: 239)

a. Da vuodja bijla-jn Ornvika-**j**.
now drive.3PL car.COM Ornvika-ALL
'Now one drives to Ornvika by car.'

b. Dä ij del almatj sida nagin sadjá-**j** vuällget.
then NEG obviously person want [some place]-DAT go.INF
'Then one obviously doesn't want to go anywhere.'

In sum, splitting the features A and B into separate terminals allows the feature A to interact with the noun. One of the interactions (predicted to be possible under the phrasal spell out account) is that the feature A may be lexicalised as a part the noun. We have seen that Tsez and Malayalam exhibit a special class of locative nouns, whose properties provide a tight match with those predicted.

The phenomenon in general is an instance of a wider pattern called "A blocks A+B" in Caha (2017), AbAB for short. The essence of such patterns is that the regular combination of two elements (e.g., **sheep+s*) is blocked by one of the expected parts (*sheep*). In this specific case, N+LOC is blocked by N itself. As argued in Caha (2017), this pattern is hard to capture in a theory with underspecification. The reason why over-specification is important here is that underspecification does not allow us to make a contrast between "locative nouns" and "regular nouns." The reasoning is this: in order to express the ambiguity between a locative noun use (N+A) and a pure noun use (N), an underspecification account must seek a common denominator of the two environments, which is just N. But specifying locative nouns as N fails to distinguish them from ordinary nouns, and hence, encode a distinction which is empirically needed. If correct, this shows that the underspecification account both over-generates (cannot derive the *ABA) and under-generates (fails to make the empirically needed distinction between ordinary nouns and locative nouns), while the over-specification account provides an explanation for both phenomena.

7 Conclusions

In this paper, I have investigated the so-called Blansitt's generalisation that connects datives, allatives and locatives in a linear sequence, where only adjacent categories may be subject to identical marking. In this domain, we find an AAA pattern, an AAB pattern, and an ABB pattern, but no ABA pattern.

The main theoretical point of this paper is that the existence of a *ABA constraint is in principle compatible with multiple analyses. More specifically, I have argued that in order to account for the specifics of Blansitt's generalisation, we need the so-called overlapping decomposition. In this type of decomposition, the categories are characterised by the features [A]—[A,B]—[B] (c.f. Bobaljik & Sauerland 2017). This decomposition quite likely co-exists with the classical cumulative decomposition, which seems appropriate for the cases it has been used for in recent work on the topic. In syntactic terms, the difference between them consists in whether heads higher in the *fseq* require the presence of lower heads, or whether intermediate heads may be skipped. An important empirical point is that the choice among the two options should be guided by the containment facts we find.

I have further argued that if an overlapping decomposition is in fact the underlying cause of some *ABA generalisations, then there are reasons to favour an over-specification approach to an underspecification approach, conclusion backed by the behaviour of the so-called locative nouns. If correct, this is the second important theoretical consequence of the recognition of the new pattern.

Abbreviations

1 = first person, 3 = third person, ACC = accusative, ALL = allative, AUX = auxiliary, COP = copula, DAT = dative, DEF = definite, DUAL = dual, FUT = future,IMP = imperative, INF = infinitive, LOC = locative, NEG = negation, NOM = nominative, PAST = past, PF = perfective, PL = plural, PP = participle, PRES = present, SG = singular, TOP = topic

Acknowledgements

The work on this paper has been supported by the Czech Grant Agency, GAČR, project number GA 17-10144S (Exploring linear contiguity), awarded to Pavel Caha. I am also grateful to three anonymous reviewers, Guido Vanden Wyngaerd and Michal Starke for their comments on the previous draft of this paper.

References

Abels, Klaus & Peter K. Muriungi. 2008. The focus particle in Kîîtharaka: Syntax and semantics. *Lingua* 118. 687–731.

Abels, Klaus & Ad Neeleman. 2009. Universal 20 without the LCA. In José M. Brucart, Anna Gavarró & Jaume Solà (eds.), *Merging features: Computation, interpretation and acquisition*, 60–79. Oxford: Oxford University Press.

Akiyama, Nobuo & Carol Akiyama. 2002. *Japanese grammar*. New York: Barron's Educational Series.

Asher, R. E. & T. C. Kumari. 1997. *Malayalam* (Descriptive Grammars). London: Routledge.

Austin, Peter. 1981. *A grammar of Diyari, South Australia*. Cambridge: Cambridge University Press.

Baunaz, Lena. 2017. Decomposing complementizers: The fseq of French, Modern Greek, Serbo-Croatian and Bulgarian complementizers. Ms. Universität Zürich, to appear in Exploring Nanosyntax volume at OUP.

Baunaz, Lena & Eric Lander. 2017. Nanosyntax: The basics. Ms. Universität Zürich & Göteborgs universitet, to appear in Exploring Nanosyntax volume at OUP.

Bittner, Maria & Ken Hale. 1996. The structural determination of case and agreement. *Linguistic Inquiry* 27(1). 1–68.

Blansitt, Edward L. 1988. Datives and allatives. In Michael Hammond, Edith Moravcsik & Jessika R. Wirth (eds.), *Studies in syntactic typology*, vol. 17 (Studies in Languages), 173–191. Amsterdam/Philadelphia: John Benjamins.

Bobaljik, Jonathan. 2012. *Universals in comparative morphology: Suppletion, superlatives, and the structure of words*. Cambridge, MA: MIT Press.

Bobaljik, Jonathan & Uli Sauerland. 2017. *ABA and the combinatorics of morphological features. Ms. Uconn and ZAS, to appear in Glossa, available at lingbuzz/003320.

Brown, Robert. 1988. Waris case system and verb classification. *Language and linguistics in Melanesia* 19(1-2). 37–80.

Caha, Pavel. 2009. *The nanosyntax of case*. Tromsø: CASTL, University of Tromsø dissertation.

Caha, Pavel. 2013. Explaining the structure of case paradigms through the mechanisms of Nanosyntax. *Natural Language and Linguistic Theory* 31. 1015–1066.

Caha, Pavel. 2017. Some notes on insertion in Distributed Morphology and Nanosyntax. Ms. Masarykova univerzita Brno, to appear in Exploring Nanosyntax volume at OUP.

Caha, Pavel & Marina Pantcheva. 2015. Locatives in Shona and Luganda. Ms. Masarykova univerzita, lingbuzz/002220.

Calabrese, Andrea. 2008. On absolute and contextual syncretism. In Asaf Bachrach & Andrew Nevins (eds.), *Inflectional identity*, 156–205. Oxford: Oxford University Press.

Chung, Inkie. 2007. Suppletive negation in Korean and Distributed Morphology. *Lingua* 117. 95–148.

Cinque, Guglielmo. 2005. Deriving Greenberg's universal 20 and its exceptions. *Linguistic Inquiry* 36. 315 – 332.

Cinque, Guglielmo. 2009. The fundamental left-right asymmetry of natural languages. In Marcel Dikken, Liliane Haegeman, Joan Maling, Sergio Scalise, Elisabetta Magni & Antonietta Bisetto (eds.), *Universals of language today*, vol. 76 (Studies in Natural Language and Linguistic Theory), 165–184. Dordrecht: Springer.

Cinque, Guglielmo. 2010. Mapping spatial PPs: An introduction. In Guglielmo Cinque & Luigi Rizzi (eds.), *The cartography of syntactic structure*, vol. 6, 3–25. New York: Oxford University Press.

Comrie, Bernard & Maria Polinsky. 1998. The great Daghestanian case hoax. In Anna Siewerska & Jae Jung Song (eds.), *Case, typology and grammar: In honor of Barry J. Blake*, 95–114. Amsterdam: John Benjamins.

De Clercq, Karen. 2013. *A unified syntax of negation*. Ghent: Ghent University dissertation.

den Dikken, Marcel. 2003. On the syntax of locative and directional adpositional phrases. Ms. CUNY.

Fábregas, Antonio. 2007. An exhaustive lexicalisation account of directional complements. In Monika Bašić, Marina Pantcheva, Minjeong Son & Peter Svenonius (eds.), *Nordlyd, special issue on space, motion, and result* (Tromsø Working Papers on Language and Linguistics 34.2), 165–199. Tromsø: CASTL, University of Tromsø.

Greenberg, Joseph H. 1963. Some universals of grammar with particular reference to the order of meaningful elements. In Joseph H. Greenberg (ed.), *Universals of language*, 73–113. Cambridge, MA: MIT Press.

Halle, Morris. 1997. Impoverishment and fission. In Benjamin Bruening, Y. Kang & Martha McGinnis (eds.), *Papers at the interface* (MITWPL 30), 425–449. Cambridge, MA: MIT.

Halle, Morris & Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In Kenneth Hale & Samuel Jay Keyser (eds.), *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge, MA: MIT Press.

Harðarson, Gísli Rúnar. 2016. A case for a weak case contiguity hypothesis—a reply to Caha. *Natural Language & Linguistic Theory* 34(4). 1329–1343.

Harley, Heidi. 2008. When is syncretism more than a syncretism? Impoverishment, metasyncretism and underspecification. In Daniel Harbour, David Adger & Susana Béjar (eds.), *Phi theory: Phi-features across modules and interfaces*, 251 – 294. Oxford: Oxford University Press.

Haspelmath, Martin. 2010. Comparative concepts and descriptive categories in cross-linguistic studies. *Language* 86. 663–687.

Haugen, Jason D. & Daniel Siddiqi. 2016. Towards a restricted realization theory: Multimorphemic monolistemicity, portmanteaux, and post-linearization spanning. In Daniel Siddiqi & Heidi Harley (eds.), *Morphological metatheory*, 343–385. Amsterdam: John Benjamins.

Hualde, José Ignacio & Jon Ortiz de Urbina. 2003. *A grammar of Basque*, vol. 26. Berlin: Walter de Gruyter.

Jackendoff, Ray. 1983. *Semantics and cognition*. Cambridge, MA: MIT Press.

Jakobson, Roman. 1962. Beitrag zur allgemeinen Kasuslehre: Gesamtbedeutungen der russischen Kasus. In *Selected writings*, vol. 2, 23–71. The Hague: Mouton.

Kiparsky, Paul. 1973. 'Elsewhere' in phonology. In Paul Kiparsky & Steven Anderson (eds.), *A Festschrift for Morris Halle*, New York: Holt, Rinehart and Winston.

Koopman, Hilda. 2000. Prepositions, postpositions, circumpositions, and particles. In Hilda Koopman (ed.), *The syntax of specifiers and heads*, 204–260. London: Routledge.

Lander, Eric & Liliane Haegeman. 2016. The nanosyntax of spatial deixis. *Studia Linguistica* Early View.

Noonan, Máire. 2010. À to zu. In Guglielmo Cinque & Luigi Rizzi (eds.), *The cartography of syntactic structure*, vol. 6, 161–195. Oxford: Oxford University Press.

Pantcheva, Marina. 2011. *Decomposing Path. The nanosyntax of directional expressions*. Tromsø: CASTL, University of Tromsø dissertation.

Pantcheva, Marina & Pavel Caha. 2012. Contiguity beyond linearity. Talk at Worse, University of Tromsø, June.

Plank, Frans. 1991. Rasmus Rask's dilemma. In Frans Plank (ed.), *Paradigms: The economy of inflection*, 161–196. Berlin: Mouton de Gruyter.

Rice, Sally & Kaori Kabata. 2007. Crosslinguistic grammaticalization patterns of the allative. *Linguistic Typology* 11(3). 451–514.

Seyoum, Mulugeta. 2008. *A grammar of Dime*. Leiden: Universiteit Leiden dissertation.

Smith, Peter W., Beata Moskal, Jungmin Kang, Ting Xu & Jonathan Bobaljik. 2015. Pronominal suppletion: Case and number. In Thuy Bui & Deniz Özyıldız (eds.), *Proceedings of the 45th annual meeting of the North East linguistic society*, vol. 3, 69–78. Amherst: GLSA, UMass.

Staalsen, Philip. 1965. Iatmul grammar sketch. Https://www.sil.org/resources/archives/31101.

Starke, Michal. 2004. On the inexistence of specifiers and the nature of heads. In Adriana Belletti (ed.), *Structures and beyond: The cartography of syntactic* *structures*, vol. 3, 252–268. New York: Oxford University Press.

Starke, Michal. 2009. Nanosyntax. A short primer to a new approach to language. In Peter Svenonius, Gillian Ramchand, Michal Starke & Tarald Taraldsen (eds.), *Nordlyd 36: Special issue on Nanosyntax*, 1–6. Tromsø: University of Tromsø. Available at www.ub.uit.no/munin/nordlyd/.

Starke, Michal. 2017a. Complex left branches, spellout and prefixes. Ms. CASTL UiT, to appear in Exploring Nanosyntax volume at OUP.

Starke, Michal. 2017b. Resolving (DAT = ACC) $\neq$ GEN. Ms. CASTL UiT, to appear in Glossa.

Svenonius, Peter. 2010. Spatial P in English. In Guglielmo Cinque & Luigi Rizzi (eds.), *The cartography of syntactic structure*, vol. 6, 127–160. Oxford: Oxford University Press.

Takamine, Kaori. 2006. The Axial Part phrase in Japanese. In Peter Svenonius & Marina Pantcheva (eds.), *Nordlyd, special issue on adpositions* (Tromsø Working Papers in Linguistics 33), 78–97. Tromsø: CASTL, University of Tromsø.

Takamine, Kaori. 2010. *The postpositional hierarchy and its mapping to clause structure in Japanese*. Tromsø: CASTL, University of Tromsø dissertation.

Talmy, Leonard. 2000. *Toward a cognitive semantics: Concept structuring systems*, vol. I. Cambridge, MA: MIT Press.

Taraldsen, Tarald. 2010. The nanosyntax of Nguni noun class prefixes and concords. *Lingua* 120(6). 1522–1548.

Tomič, Olga Mišeska. 2006. *Balkan Sprachbund morpho-syntactic features*. Dordrecht: Springer.

van Riemsdijk, Henk & Riny Huybregts. 2002. Location and locality. In Marc van Oostendorp & Elena Anagnostopoulou (eds.), *Progress in grammar: Articles at the 20th anniversary of the comparison of grammatical models group in Tilburg*, 1–23. Amsterdam: Meertens Instituut.

Vanden Wyngaerd, Guido. 2017. The feature structure of pronouns: A probe into multidimensional paradigms. Ms. KU Leuven, CRISSP, to appear in Exploring Nanosyntax volume at OUP.

Vangsnes, Øystein A. 2013. Syncretism and functional expansion in Germanic wh-expressions. *Language Sciences* 36. 47–65.

Wilbur, Joshua. 2014. *A grammar of Pite Saami*. Berlin: Language Science Press.

Williams, Edwin. 1994. Remarks on lexical knowledge. *Lingua* 92. 7–34.

Williams, Edwin. 2003. *Representation theory*. Cambridge, MA: MIT Press.

Zwarts, Joost. 2005. The case of prepositions: Government and compositionality in German PPs. Paper presented at the 21st Annual Meeting of the Israel Association for Theoretical Linguistics, Haifa, June 23, downloadable at: http://www.let.uu.nl/users/Joost.Zwarts/personal/Papers/CofPs.pdf.