Case in adpositional phrases

Pavel Caha
CASTL, Tromsø

August 22, 2011

Abstract

This paper argues that case marking applies to PPs, and not to the DPs embedded inside them. I argue that this view sheds light on a number of empirical domains, including syncretism between spatial and non-spatial cases, P-drop, attested and non-attested morpheme orders, and the syntax of P-stranding.

1 The received wisdom and three paradoxes

Across various frameworks, it is widely assumed that verbs and adpositions (spatial ones in particular) take noun phrases as arguments/dependents, and determine their case marking. To give an example of the received view, I quote from a textbook on case by Blake: "Case is a system of marking dependent nouns for the type of relationship they bear to their heads. [...] Cases can also be governed by prepositions or postpositions" (Blake 1994, p.1,2).

This view has also been incorporated into main-stream generative syntax at least since Chomsky (1980, 24), Chomsky (1981, 50). Depending on the details of implementation, case is then understood either as a feature of N/D or as a projection below P which is valued/checked by the preposition (van Riemsdijk and Huybregts 2002, den Dikken 2003, Pesetsky and Torrego 2004, Caha 2007, Svenonius 2008).[1]

This paper proposes an alternative to the received view; in particular, I am going to claim that case marking applies to PPs, rather than to the DPs embedded inside them (possessive marking aside). Before I start developing this view in greater detail, let me first motivate the departure from the received view by pointing out three sets of data, which turn out paradoxical under the standard conception, i.e., in a theory where both verbs and adpositions assign case to their complements in a parallel fashion.

The first paradox has to do with an asymmetry that exists between VPs and PPs when it comes to prefixal vs. suffixal case marking. More specifically, prefixal case marking of a DP seems to be absent in PPs. To see that, consider Standard Czech and Standard Macedonian, two Slavic languages that contrast (a.o.) in the marking of their recipient (indirect object) arguments. In Czech, the marking is suffixal, while it is prefixal in Macedonian:

(1) Czech: the author, Macedonian: Tomič (2006, p.81)
   a. Řekni [svýmu strejd-**ovi**], at' dojde!
      tell your uncle-DAT to come
   b. Reči mu [**na** strika ti] da dojde!
      tell him DAT uncle your to come
      'Tell your uncle to come!'

Such a contrast in suffixal vs. prefixal marking of dative DPs is fairly regular across classes of verbal arguments, and I summarize it abstractly below:

(2) a. Czech: V [N-K]
   b. Macedonian: V [K-N]

Now if case marking works the same in VPs and PPs, one would expect to find a similar contrast between prefixal vs. suffixal marking of DPs inside Czech and Macedonian PPs:

(3) a. Czech: P [N-K]
   b. Macedonian: P [K-N]

[1] See Bayer and Bader (2007) for a dissenting view.

With absolute regularity, this expectation fails. The dative suffix, seen in (4-a), does not find a prepositional counterpart in a position following the spatial adposition, as shown in (4-b).

(4) Czech: the author, Macedonian: Tomič (2006, p.85)
   a. Šel [k [tvé maminc-**e**]]
      he-went to your mother-DAT
   b. *Otide [kaj [**na** majka ti]]
      he-went at DAT mother yours
      'He went to your mother's place.'

In a theory where verbs and adpositions assign case in the same way, this constitutes a paradox: (allegedly) identical conditions lead to different outcomes. Of course, one should try to patch things up, and I do not wish to claim that this is impossible. But suppose for a while that the alternative I am about to propose is correct, and that dative case marking is applied to the whole PP, rather than the embedded DP. If that is so, then the bracketing of the Czech (4-a) is in fact as shown in (5) (i.e., the dative case marker is suffixed to the PP, and not the embedded DP):

(5) Šel [[k tvé maminc]-**e**]
   he-went to your mother-DAT
   'He went to your mother's place.'

If that is indeed the correct bracketing, then we expect the Macedonian *na*, the counterpart of the Czech dative suffix, to precede the whole PP, rather than just the embedded DP. And that is exactly what one finds:

(6) Otide [**na** [kaj majka ti]]
   he-went DAT at mother yours
   'He went to your mother's place.' Macedonian: Tomič (2006, p.85)

The second paradox comes from the comparison between VO and OV orders on the one hand, and pre- vs. post-positional orders on the other. As an example, consider Czech (VO) and Wolaytta (OV, a Cushitic language spoken in Ethiopia). These are both dependent-marking languages (case attaches to the DP and not to the verb), and case marking is suffixal. An example from each language is below (note the boldfaced instrumental markers, which will be of concern shortly).

(7) Czech (the author) vs. Wolaytta (Cushitic) Lamberti and Sottile (1997)
   a. Lid-i krájej mas-o nož-**em**
      people-NOM cut meat-ACC knife-INS
      'People cut the meat with the knife.'
   b. ashu-wa ase-y billamaa-**n**^{i} k'aant'ees^{e}
      meat-OBJ people-SUBJ knife-INS he-cuts
      'People cut the meat with the knife.'

Abstractly, the patterns can be summarized as follows:

(8) a. Czech V OBJ-K
   b. Wolaytta: OBJ-K V

When it comes to adpositional phrases, the two languages once again contrast in the order of adpositions and their complements. Czech has prepositions (P>O), while Wolaytta has postpositions (O>P). Following the abstract pattern (8), and substituting P for V, one would expect:

(9) a. Czech: P OBJ-K
   b. Wolaytta: OBJ-K P

That is, however, not exactly what one finds. Czech (10-a) patterns according to expectations, and the locative case marker (homophonous with the instrumental across the board) is suffixed to the noun. Despite the fact that Wolaytta possesses the same homophony (LOC=INS), suffixing such a case marker to the noun in Wolaytta is impossible, see (10-b):

(10) Czech (the author) vs. Wolaytta (Lamberti and Sottile, 1997, 120)
   a. před dom-**em**
      in front of house-LOC
      'in front of the house'
   b. *keetta-**n**^{i} garsa
      house-LOC inside

'in the house'

The discrepancy between the expected (9-b) and the ungrammatical instantiation in (10-b) then constitutes the second paradox.[2] However, suppose once again that the current hypothesis is correct, and that case marking applies to PPs rather than to the DPs embedded inside them. For Czech, this will make no difference in the expected word order (only in constituency). Thus, the prepositional phrase [P DP] is suffixed by a case marker, leading to [[P DP]-K]:

(11) [[před dom]-**em**]
in front of house-LOC
'in front of the house'

Extending the same reasoning to Wolaytta, however, leads to a result different from (10-b). In particular, we now expect that the case suffix attaches to the whole postpositional phrase [DP P], with the (grammatical) result shown in (12):

(12) [[keetta garsa]-$\mathbf{n}^{i}$]
house inside-LOC
'in the house'

These two paradoxes show that the traditional approach (Ps case mark DPs) seems to be biased towards explaining a single word-order pattern, characteristic of classical languages like Latin and Greek, illustrated in the text by structurally similar patterns found in present day Czech. Once we move beyond these prepositional, case suffixing languages, we cannot fail to notice that case markers show up at unexpected places.

However, the traditional theory encounters problems even in languages whose patterns it was designed to capture. To show that, let me turn to a paradox for compositional interpretation of cases in PPs that Zwarts (2005) calls "crossing." First of all, Zwarts observes that in German, there is a systematic correspondence between the dative case and static interpretation, and the accusative case and a goal interpretation (among others). To see that, consider the data in (13-a,b). Both examples have an identical adposition (*über* 'over'); the static location reading then correlates with dative marking of the DP in (13-a), while accusative marking in (13-b) leads to a directional interpretation.

(13) German
a. Die Lampe hing über dem Tisch
the lamp hung over the.DAT table
'The lamp hung above the table.' (static location)
b. Er hängte die Lampe über den Tisch
he hung the lamp above the.ACC table
'He hung the lamp over the table.' (goal)

However, if the syntactic structure is as in (14), there seems to be no obvious way to interpret such patterns compositionally, a conclusion that Zwarts establishes in great detail.

(14) [P [K DP]]

In Zwarts' terms, the problem is "that case is syntactically in the wrong position to compose with the preposition. It should have been 'outside' the preposition and not 'inside' it." I show the latter option in (15), noting that this is the hypothesis I argue for here:

(15) [K [P DP]]

Summing up: the ambition of the current proposal – stating that case marking applies to PPs – is to present a view on case marking in adpositional phrases that naturally captures a broader spectrum of typologically diverse languages, and fits well with current theories of semantic composition.

2 Broader theoretical perspective and a brief outline of the paper

Semantically speaking, there are at least three items in a spatial adpositional phrase that will be of interest in what follows. First of all, there is the so-called Ground argument (Talmy 2000), a

[2] To my knowledge, this paradox has first been pointed out by Jayaseelan (2009).

reference object with respect to which the location is determined. In (16-a-c), 'the bridge' is the Ground argument.

(16) *under the bridge* as a location, source and goal (Svenonius 2010):

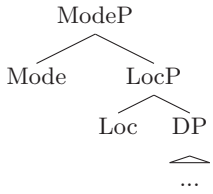
a.	LOC	The boat drifted	**Ø**	under the bridge
b.	GOA	The boat drifted	(?**to**)	under the bridge
c.	SOU	The boat drifted	**from**	under the bridge

Second, there is an item that I will be calling *localizer* (following Kracht 2002). This item determines a spatial region relative to the reference object. In (16-a-c), *under* is the localizer.

Finally, there is an element that signals whether the subject of the sentence (the Figure argument, *the boat*) stays at rest at a location, or moves to, from or past that location. In (16), the morphemes *to* and *from* fulfill this function (as well as a possibly a null morpheme in (16-a)). Following Kracht (2002), I will be calling this element the modalizer (Mode for short).

In the literature on the topic (Jackendoff 1983, van Riemsdijk 1990, Koopman 2000, Kracht 2002, Svenonius 2010, Cinque 2010), it is agreed that these elements are subject to a strict hierarchy shown in (17):[3]

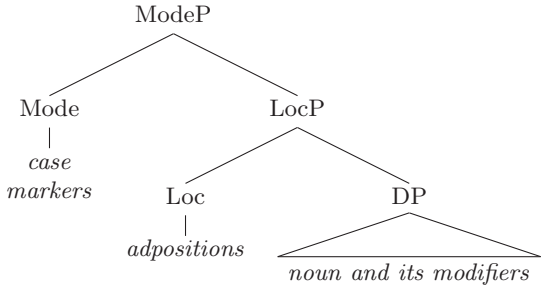
(17)



It is quite uncontroversial that formally, the two lowest semantic functions are prototypically expressed by noun phrases and spatial adpositions respectively, even though there is a growing consensus that spatial cases (in languages that have them) qualify as exponents of both Loc and Mode (van Riemsdijk and Huybregts 2002, Asbury et al. 2007, Svenonius 2010, Pantcheva 2010).[4]

Even in this strand of research, however, little or no connection is drawn between spatial and non-spatial markers. It is assumed that non-spatial markers are distinct from spatial markers, and spell out positions lower than Loc in the functional spine. The novelty of this paper lies in proposing that the function of Mode (i.e., determining static or dynamic aspects of the location) is formally encoded by case markers across the board, even when these are apparently 'non-spatial.' I show the proposal schematically below:[5]

(18)



In section 4, I will take the proposal one step further, and suggest that the function 'Mode' is a specific instance of 'case functions' in general. More specifically, I am going to argue that the meaning of goal, source or static location is an integral part of a system that is responsible for possessive, recipient, instrumental or comitative interpretations. In other words, the fact that case markers serve to express Mode is not a consequence of the fact that these morphemes are a multi-purpose underspecified elements with 'bleached/general' meanings. It is a consequence of the fact

[3] In the structure below, Loc and Mode should not be confused with the traditional Path and Place heads of Koopman (2000), or, more specifically, with the idea that static locatives are syntactically contained in directionals (van Riemsdijk 1990, Koopman 2000, den Dikken 2003, Svenonius 2010). LocP on its own does not denote a static location; rather, it denotes a region relative to the reference object, but it is not determined whether this region is to be interpreted as a static location, goal or source. This information is supplied by Mode.

The current proposal is compatible with (and sympathetic to) such decompositional ideas mentioned above (for the most elaborate account, see Pantcheva 2010, 2011), understood as hypotheses which concern the decomposition and internal structure of the Mode region of the sequence (17).

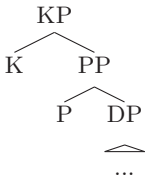
[4] I also mention here that Aboh (2010) argues that the function of Loc is universally expressed by nouns, and that the syntax of Loc-Ground corresponds in all instances to possessive structures. I do not adopt this conclusion here, but do not provide an in depth discussion for reasons of space.

[5] I have to mention that I am not dealing here with possessive marking that occurs in certain types of complex PPs. For example, the *of* in *in front of the house* falls out of the scope of the current paper. I come back to this later on.

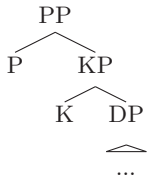
that the meanings traditionally associated to 'Mode' are built out of the same grammatical primitives (features) as other cases.

Given these proposals, I will be working with a version of the functional sequence that utilizes the formal (rather than functional) labels of the projections under discussion, see (19). This contrasts with the traditional approaches, which posit (20).

(19)



(20)



An immediate consequence of the proposal (19) is that – in the base (first-merged) structure at least – there is a constituent that contains the adposition and the DP to the exclusion of the case marker. In section 5, I argue that there are grammatical processes that target this constituent. This is hard to capture under the alternative account depicted in (20), since there is no such constituent.

Other consequences of the proposal depend in part on one's assumptions about linearization, and about admissible movement operations that may alter the structure in (19). In section 6, I argue for the following assumptions:[6]

(21) Linearization and movement
- a. The noun is the 'lexical' head of a sequence that includes adpositions and cases
- b. Asymmetric c-command maps onto linear precedence
- c. Movement targets only c-commanding positions (corollary: no rightward movement)
- d. Movements within a single functional sequence displace only constituents containing the 'lexical' head of the sequence (rules out certain types of remnant movement and certain instances of head-movement)

These assumptions lead to an interesting consequence: they do not allow us to derive a constituent that contains the DP and the case marker to the exclusion of the adposition. I argue in section 7 that this aspect of the proposal has interesting – and correct – consequences for the syntax of P-stranding, as well as its interaction with sluicing.

3 A background assumption

In this section, I review an assumption about case I will be making throughout this article. Part of the justification for this assumption will be provided as we go, in particular, I adopt it because it leads to interesting results within the domain under discussion (adpositional phrases). Admittedly, given the space of an article, I cannot fully justify it independently of the current debate. However, I am going to provide at least partial argumentation, together with references to works that are relevant in this respect.

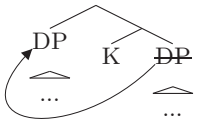
In order to illustrate the assumption on an example, recall that in the introduction, I have given two pieces of data which suggest that case marking applies to PPs, rather than DPs; see (6) and (12), repeated below for convenience.

(22)
- a. Otide [**na** [kaj majka ti]]
  he-went DAT at mother yours
  'He went to your mother's place.'
- b. keetta garsa-**n**^{i}
  house-LOC inside
  'in the house'

The argument presupposes a notion of *case marker* such that it covers the Macedonian *na* as well as the -n^{i} of Wolaytta. Consequently, I understand case marker as a formal device that signals the role of a noun phrase in the sentence – without any qualifications made concerning its 'morphological' status. To phrase this in a more theoretically involved way: case prepositions and case suffixes spell out identical underlying positions in the functional sequence. They differ only with respect to the position of the DP they embed:[7]

[6] For a more general motivation behind these proposals, see Grimshaw 1991, Kayne 1994, and in particular Cinque 2005 whose approach I follow closely.

[7] In the example where case is suffixed, potential complements of the DP have to evacuate to a high position, followed by the remnant movement of the KP (including the DP, but excluding the extraposed complements). See Cinque (2005) for the same solution to an analogous analytical problem.

(23) a. Case suffixes: 

b. Case prepositions 

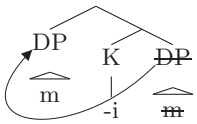
This is not uncontroversial; however, several arguments have been provided in favor of the view entertained here (see, a.o., Fillmore 1968, Řezáč 2008, Moravcsik 2009, Anderson 2009. Caha 2011). Let me review some of the reasons here briefly.

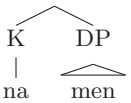
One argument in favor of the view I adopt here comes from general considerations of functional parallelism between case suffixes and case prepositions; to quote from Fillmore's influential (1968) paper: "[Case p]repositions [...] are selected on the basis of several types of structural features, and in ways which are exactly analogous to those which determine particular case forms in a language like Latin." This observation is particularly strong in the context of a cartographic approach to language structure (Cinque and Rizzi 2010): if the contexts for the emergence of particular morphemes are identical, then these morphemes reflect an identical underlying feature set. And since the distribution of features in the structure is fixed across languages (one of the conjectures of cartographic research), then case suffixes and case prepositions must originate in an identical position.

A striking illustration of such a parallelism comes from languages like Bulgarian (closely related to Macedonian), where a particular case can be expressed either by a suffix or a preposition depending on the class of the element. The Bulgarian example (24) shows this; the same function (recipient) can be expressed either by a suffixal form (the clitic *m-i*, which doubles the emphatic pronoun), or by a preposition (on the emphatic pronoun).

(24) [**Na** men] ne [m-**i**] go dade.
DAT me not me-DAT it gave
'He didn't give it to ME.'

Such an obvious parallelism between the case suffix and the case preposition *na* is immediately captured in a conception where both morphemes express the same underlying positions, and differ only in their ordering with respect to the noun phrase (clitics in Bulgarian move higher than all non-clitics; see Cardinaletti and Starke 1999 for similar observations):

(25) a. Case suffixes: 

b. Case prepositions 

Turning to a different type of argument, the study by Řezáč (2008) further observes that across a class of languages, the fact whether oblique case is expressed by a preposition or by a suffix "is irrelevant to its syntactic behavior" (p.87). This follows under the same view, namely that case suffixes and case prepositions spell out an identical part of structure, and differ only in their position with respect to the noun phrase.

There are other indications to treat case suffixes and case prepositions as identical. For example, case suffixes quite often exhibit syncretism: a single suffix expresses two distinct cases. The same range of effects can be observed for case prepositions (see Caha 2009, §1.5). Consider just one example, representative of a whole range of similar facts: the Macedonian *na*, alluded to earlier, has both the genitive and dative function. Such a syncretism is also widespread for case suffixes: half of the Australian case systems exhibit precisely this ambiguity, according to Blake (1977). Even more striking is perhaps the fact that the syncretism of particular case functions seems to be restricted (see Caha 2009 and the literature quoted there). For example, case suffixes that are syncretic between the genitive and the instrumental case are either non-existent, or extremely rare. And similarly, there are very few such (functional) prepositions (if any). Once again, this follows immediately under the assumption that case suffixes and case prepositions are underlyingly the same thing, and differ only in their position with respect to the noun phrase.[8]

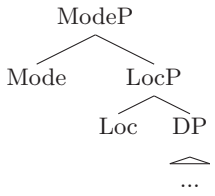
[8]I am aware that there are works that claim the opposite. E.g., Creissels (2009, 611) suggests that "spatial relation markers that are clearly affixal lend themselves to some generalizations that do not apply to those that are clearly adpositional..." As an example, he points out that "the ablative-genitive syncretism is common in adpositional systems, and therefore would be expected to be found in case systems too, but examples are not easy to find." However, Langer (2009, 591) points out that Jaru has it, and, according to Noonan and Mihas (no date), it is also attested in Jad, Kashmiri, Komi-Permyak, Udmurt. Noonan and Mihas (no date) add also a number of languages with partial genitive-ablative syncretisms.

4 Mode markers are case markers

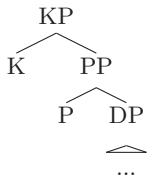
With the basic assumption clarified, I will now present the first piece of evidence which shows that the function of Mode may be formally expressed by case markers (as defined). I further argue that this points to the conclusion that Mode is in fact a specific instance of the category of Case. In other words, this section argues that the traditional semantic hierarchy (26-a) corresponds to the "formal" hierarchy (26-b).

(26) The hierarchies

a. semantic



b. formal



The evidence I present starts with the observation that across various languages and types of modes (static, goal or source), it is quite often the case that case markers (both oblique and structural) fulfill the role of expressing Mode. One example of such a language is the Sino-Tibetan Meithei, with an example in (27). In (27-a), we can see the genitive marker *gi* attached to a personal pronoun. (27-b) contains the locative marker *-də/-tə* 'in.' The ablative in (27-c) puts these together: the locative *-tə* is followed by the genitive *-gi*, which thus serves the role of indicating (source) Mode.

(27) Meithei

a. mə-si əy-**gi** yum -ni
this I-GEN house is
'This is my house' (Chelliah, 1997, 127)

b. yum-**də** mí məri lə́y
house-LOC men four live
'Four people live in the house.' (Chelliah, 1997, 126)

c. mánə Nyurk-**tə-gi** Jaipur-də čə́tkhí
he New York-LOC-GEN Jaipur-LOC went
'He went from New York to Jaipur' (Chelliah, 1997, 126)

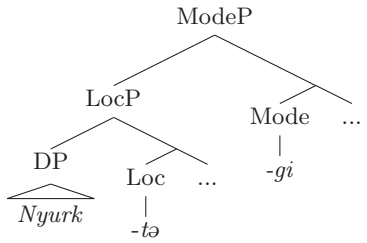
Semantic considerations suggest scope relations such that in the base structure, the case marker c-commands the LocP: ABL/GEN > LocP. This can be nicely shown on examples where the morpheme ordering (and the scope) is reversed:

(28) əkhoy ŋəraŋ Tombə-**gi**-də čə́tləmmí
we yesterday Tomba-GEN-LOC went
'Yesterday, we went to Tomba's house' (Chelliah, 1997, 128)

In (28), the genitive *-gi* precedes (rather than follows) the locative marker, and its interpretation is possessive (and not ablative). The contrast between (27-c) and (28) follows if the ablative interpretation requires a scope over PP, and the possessive one over the DP.

In conclusion, there is evidence that in examples such as (27-c), the genitive marker *gi/ki* is base-generated above the LocP (and its surface position is the result of (a roll-up type of) movement):

(29) Meithei:



As another example, consider case marking in Tsez, as discussed by Comrie and Polinsky (1998). First of all, note that the language has a suffix (*-r*) which marks indirect objects (30-a) as well as experiencers (30-b).[9]

(30) Tsez, (Comrie and Polinsky, 1998, 111)

[9] Comrie and Polinsky (1998) note that the use of this marker in (29-b) shares traits with 'grammatical' cases (as opposed to local/'semantic'). That is indicated by the fact that the verb in (30-b) agrees with the dative in class.

a. už-ā kid-be-**r** eλu teƛ-si
boy-ERG girl-TH-DAT blueberry give-PSTEVID
'The boy gave (the) blueberries to the girl (to keep).'
b. madina-**r** obiy Ø-eti-x.
Madina-DAT father II-like-PRS
'Madina likes father.'

When the same suffix *-r* follows an affix with the Loc function, it leads to a goal directional interpretation. This is summarized in the table (31).

(31) Tsez static location and goal direction ((Comrie and Polinsky, 1998, 104))

	'in'	'among'	'on'	'under'	'at'	'near'	'on'
static location	ā	λ	ƛ'(o)	ƛ	x(o)	de	q(o)
goal direction	ā-r	λ-er	ƛ'o-r	ƛ-er	xo-r	de-r	qo-r

Once again, this suggests a treatment according to which a (non-spatial) case marker (DAT) may be generated above LocP, yielding goal interpretation.

There is a large number of analogous examples from other languages that will be provided as we go. The amount of such examples makes it clear that we are looking at a systematic pattern. The crucial question is how to account for it, and two options come to mind.

First, one could maintain the view that Mode and K are distinct categories, and make recourse to categorial underspecification of markers. Such a theory would hold that markers such as the Meithei *-gi* and the Tsez *-r* may be inserted into two formally unrelated heads, notably Mode and K. This is clearly a weak stand to take; and there are various reasons for not adopting it.[10]

The strongest one is that it leaves unexplained certain formal patterns that I turn to now. In particular, as observed by Stolz et al. (2006), there are languages where the static-locative marker is homophonous with both the instrumental marker, and the comitative marker. I give the Salish language Lillooet as an example, see Stolz et al. (2006) for further illustrations:

(32) Lillooet (Salish) (van Eijk, 1997, 220-1)
a. **l-** ti- cítx^{w} -a
LOC- ART- house -ART
'in the house'
b. **l-** ti- x^{w}úk^{w}py' -a
INS ART knife -ART
'with a knife'
c. **l-** snúwa
COM you
'with you'

Following the categorial underspecification account, one would have to say that *l-* is a type of a marker that is not specified for category, and may occur both under K and Mode. The fact that the distribution of the marker comes out the way it does is a matter of lexical accident. In particular, we expect a language similar to Lillooet, but one which has a highly specified comitative marker in addition to the underspecified marker. And in fact, there are such languages in which the underspecified marker surfaces only in LOC and INS contexts:

(33) Swahili (Bantu) (Stolz et al., 2006, 127,142)
a. nilikuwa **kwa** Juma
I was LOC Juma
'I was in the house of Juma.'
b. John aliandika baruna hii **kwa** kalamu mpya
John wrote letter this INS pen new
'John wrote this letter with a new pen.'
c. aliondoka **na** baba yake
went away COM father his
'He went away with his father.'

Crucially, the same reasoning fails in the following case. Suppose that again we have a language like Lilloet with a marker underspecified for category (K or Mode), but one which has a lexicon with a tailor-made instrumental marker. The pattern would then look as follows:

(34) A hypothetical language

[10] I do not argue against underspecifications *per se*, since my own account will make reference to it. What I argue against is a type of underspecification where a single morpheme occurs in two formally unrelated heads.

a. A house
in house
b. B pen
with pen
c. A father
with father

However, as Stolz et al. (2006, 143) point out, there is a clear asymmetry between the patterns. While (32) and (33) are relatively common, (34) is virtually absent.

Such an asymmetry reveals that there must be some kind of a connection between the LOC and INS (since (33) is relatively common), which is absent between LOC and COM (since (34) is virtually unattested). However, stating this formally is impossible in a theory that holds that K (COM, INS) and Mode (static location) are distinct categories. The reasoning is this: if K and Mode are formally distinct categories, they have no features in common, and if they have no features in common, there is no formal substance over which to state similarity.

In view of such an empirical failure and its theoretical reasons, I am led to adopt a view according to which Mode and K are built out of the same ingredients (features), and consequently, they occupy identical regions in the functional sequence.

Regarding the details of implementation, the asymmetry between (33) and (34) plays a crucial role. I state this as (35):[11]

(35) Syncretism may not target discontinuous regions in the sequence LOC – INS – COM.

Seen from this perspective, the generalization is nothing but an instance of the so-called *A-B-A pattern. The mnemonic *A-B-A refers to the fact that discontinuous syncretism (two As across a distinct B) is ruled out. In our case, this is the syncretism of LOC and COM across a distinct INS. Note that LOC and COM may be non-distinct, but then the instrumental has to be the same as well (A-A-A, see (32)).

The theoretical significance of this pattern for various empirical domains has been recently stressed in works by Starke (2009), Caha (2009), Pantcheva (2010) and Vangsnes (2011), building on an earlier work by Bobaljik which now appears as Bobaljik (2011). The general conclusion of the works cited is that such a generalization points to a significant degree of formal similarity in terms of feature make up; in particular, it has to be the case that there is a containment relationship among the categories for which *A-B-A holds. I show this in (36):

(36) a. LOC = [... X]
b. INS = [... X,Y]
c. COM = [... X,Y,Z]

Above, the features of the locative are all contained in the instrumental, which has the feature Y in addition. The comitative is based on the instrumental by the addition of the feature Z. The feature representations capture the generalization (35) in the following way. Assuming that syncretism arises through underspecifiction, we generate Lillooet by specifying its three way ambiguous marker for the feature X only; this will make it compatible with all the environments. In Swahili, there will be in addition a dedicated comitative marker, specified as [...X,Y,Z]. This marker will restrict the occurrence of the underspecified marker to LOC–INS only.

Importantly, once a language has a dedicated instrumental marker [...X,Y] in addition to an underspecified marker ([...X]), then the underspecified marker cannot occur in the comitative. That is because in the comitative case ([...X,Y,Z]) the instrumental marker will be a better match than the underspecified marker. Thus, what we get with such entries is an A-B-B pattern. An example of such a pattern (from Dime, Cushitic) is provided below:[12]

(37) Dime (Seyoum, 2008, 55,114)
a. məŋ́-is t'ərəp'ez-is-**se** dáh-i-n
gourd-DEF table-DEF-LOC stay-PERF-3
'The gourd is on the table'
b. ʔaté ʔáʁ-im ɬ́ibz-is-**ká** k'árs'-'i-t
1.SG.S tree-ACC axe-DEF-INS cut-PF-1
'I cut the tree with the axe.'
c. nú ḱi-ko ḿič-**ká** ʔéh-**ó** ɬ́iengma-i-n
3.SG.M.S 3.SG.M.OBJ-GEN sister-COM home-LOC went-PF-3

[11] The formulation presupposes that the couple of counterexamples that Stolz et al. 2006 mention turn out to be spurious under scrutiny, or they have to be treated as instances of accidental homophony (two distinct lexical entries).

[12] There are, in fact, two distinct locative markers in the language (*se* and *ó*), but none of them is homophonous with the syncretic INS=COM (*ká*).

'He went home with his sister.'

In conclusion, two things are relevant. Seen from this perspective, languages where the locative marker shows no syncretism (like in Dime) fall out of the same theory as languages that do have a syncretism.

Second, if the decomposition (36) is correct, then Mode is a specific instance of case functions in general, and notions such as 'static locative' are built out of the same ingredients as non-local cases (or vice versa, non-local cases are built out of the same ingredients as local cases). I skip analogous discussion of allatives and ablatives, but similar facts can be reproduced in this domain as well (see Pantcheva 2011 for a discussion).

5 P-drop

What consequences does this analysis have for traditional PPs as we know them from Classical Indo-European languages? To see that on an example, consider the examples in (38-a-c). What is relevant from the current perspective is that the adposition *pará* 'at' combines with Grounds marked by a distinct case, leading to distinct 'Mode' interpretations.

(38) Ancient Greek Luraghi (2003, 76)

a. [parà nus] **-ì**
at ships- DAT
'**AT** in the hollow ships'

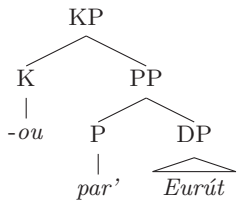
b. [par' Hēphaist] **-on**
at Hephaiston -ACC
'**TO** in Hephaestos'

c. [par' Eurút] **-ou**
at Eurytos -GEN
'**FROM** in Eurytos'

For example, in (38-a), the DAT marker yields a static locative interpretation of the spatial configuration denoted by the PP. Noting in addition that the dative in Ancient Greek is in fact ambiguous between an instrumental and a dative, it seems that Ancient Greek static locatives fall in line with languages such as Swahili (that is, as far as the LOC=INS syncretism is concerned), and hence, the same theory should apply.

Similarly, the genitive marking in (38-c) yields a source interpretation, a fact reminiscent of the Meithei pattern discussed in the preceding section. If the parallel is to be taken seriously, then the base-generated structure for Ancient Greek must be as shown in (39):

(39)



Such a structure may be independently justified by semantic considerations (see Zwarts 2005); but there is more than that. In particular, I argue that in at least some languages of the Ancient Greek type, the PP constituent may be subject to phrasal lexicalization. What that leads to is a surface disappearance of the exponent of P, as well as determiners and adjectives, since all these categories are contained in this phrasal category. However, case marking remains present on the noun, suggesting that it must be generated outside of this constituent.

The phenomenon that illustrates this theoretical option has been referred to as a P-drop by Ioannidou and den Dikken (2006), and I will be using their term here as well. The term refers to a situation where certain nouns are not required to have an overt spatial adposition (the exponent of Loc), obligatory for other nouns in the same function.

(40) illustrates the phenomenon on an example from (present day) Greek, a language which I choose because it has been extensively described and discussed by Ioannidou and den Dikken (2006) (c.f. Terzi 2010b). Now what happens in Greek is that the preposition *se* 'to,' present in (40-a), is missing in (40-b).

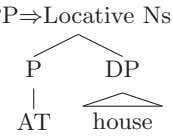
(40) Greek P-drop

a. gyrizo s- -to spiti
I-return to- -theACC house

b. gyrizo spiti
I-return house
Both 'I am returning home.'

There are reasons to believe that examples such as (40-b) have an underlying structure of PPs. The interpretation of such examples is the most striking one, but there are other facts that lead one to posit a PP-like internal structure (see McCawley 1988, Ioannidou and den Dikken 2006, Collins 2008 for relevant discussion). If that is so, one way to interpret the surface disappearance of the preposition (in spite of the PP structure) is that the nouns under discussion actually spell out a whole phrase that includes the P node (hence its surface disappearance):

(41)



The first piece of evidence in favor of the treatment in (41) is that it predicts P-drop to be lexically restricted. This is indeed the case, and only a class of nouns denoting conventional locations like 'house,' 'beach,' or 'cinema' allow for the omission of the adposition. The majority of nouns do not allow it, and this can be seen as a consequence of the (at least partly) arbitrary nature of lexical storage (keeping in mind that what is construed as conventional location may have extra-linguistic motivation, and hence, will not appear to be completely arbitrary).

The second argument in favor of such an analysis comes from the fact that all material which is located between the NP and PP becomes unavailable. In particular, when the adposition is missing, the determiner has to be missing as well. This is illustrated by (42-c).

(42) No Determiners in P-drop

a. gyrizo s- -to spiti
I-return to- -the$_{ACC}$ house

b. gyrizo spiti
I-return house
Both 'I am returning home.'

c. *gyrizo to spiti
I-return the house

Similarly, all adjectives must be missing just in case the adposition is omitted:[13]

(43) No Adjectives in P-drop

a. pao s-to megalo spiti
I-go to-the big house

b. *pao megalo spiti
I-go big house

Since determiners and adjectives are contained inside the PP, and the PP is spelled out by a single item, the unavailability of these modifiers follows.

Assuming an analysis along these lines, the crucial fact is that case-marking is preserved on the noun. (44) shows this; the noun 'cinema' has to be in the accusative, which is the same marking nouns take when embedded under the adposition *se*.

(44) pao kinematograf {-o / *-os / *-u}
I-go cinema ACC NOM GEN
'I go to the cinema.'

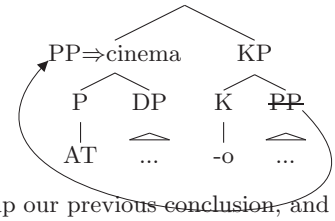
The fact that case marking is preserved under P-drop is compatible with the (otherwise successful) account only if the case marker is generated higher than P (i.e., under the traditional Mode):

[13] Collins (2008) notes a similar phenomenon in English:

(i) English (Collins 2008)

a. I miss (old sweet) home
b. Im going (*old sweet) home
c. Im going (*my) home (*my)

(45)



If correct, this reasoning then backs up our previous conclusion, and independently shows that even in garden-variety Indo-European, case markers are generated higher than adpositions.

There are two ways in which I would like to broaden the discussion of the Greek pattern in comparison to other languages. First of all, the analysis does in no way entail that P-drop is restricted to a particular language type (prepositional, case-suffixing), and that is the case. It is, for example, attested in Tsez. Thus, recall from the previous section that Tsez exhibits a homophony between the dative and the allative marker. Despite their homophony, they can be distinguished both formally and semantically. The dative marker attaches to nouns, and does not have a spatial reading, while the allative marker attaches to the so-called orientation markers, and contributes goal directionality. Thus, we find triplets such as

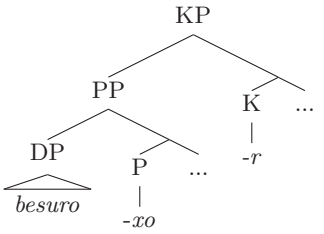
(46) a. *besuro-r* 'fish-DAT'
b. *besuro-x(o)* 'at the fish'
c. *besuro-xo-r* 'to the fish (spatial)'

However, as (Comrie, 1999, 111) points out, some nouns are exceptional, and the suffix *-r*, attached directly to such nouns, yields a spatial goal directional interpretation:

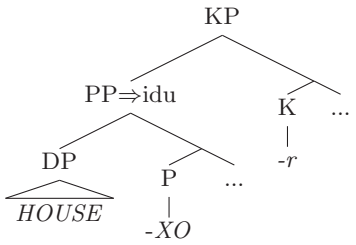
(47) a. *idu* 'at home'
b. *idu-r* 'to home'

Such examples plausibly illustrate the same phenomenon that we have seen in Greek, namely that certain inherently locative nouns may omit the exponent of P. In Greek, I have analyzed this as an instance of phrasal lexicalization, and this account easily covers the facts of (46) and (47) as well:

(48) Tsez:
a. No P-drop:



b. P-drop:



However, in the case of Tsez, it is hardly a surprise that the DP and the configuration marker *-x(o)* form a constituent to the exclusion of the word-final case affix *-r*. The surprising conclusion is that the same constituency should be extended to Greek, as the facts indicate.

The second direction in which I would like to broaden the Greek pattern concerns the range of possible case endings that nouns may bear under P-drop. In particular, Greek only allows the accusative case on the noun under P-drop. While this state of affairs is consistent with Greek grammar in general (nouns in adpositional phrases show no case alternations), it is sub-optimal when it comes to illustrating that case in P-drop constructions is actually related to Mode interpretation. However, there are languages which allow for two case markers to alternate. For instance, Colloquial Czech (like Greek) shows similar restrictions on noun modification under P-drop, as a consequence of which the forms are traditionally labeled as adverbs, rather than nouns:

(49) Sme (toho) (*velkýho) dom-a
we-are (that) (big) home-LOC
'We are at home.'

But unlike Greek, Czech morphologically distinguishes between the static locative reading and a goal reading by means of altering the case ending:

(50) Colloquial Czech
a. Sme dom-a
we-are home-LOC
'We are at home.'

b. Dem dom-ø
we-go home-DIR
'We are going home.'

The existence of contrasts such as (50) strengthens the conclusion that case morphemes in P-drop structures are generated high. Specifically, the example shows that the final vowel in *dom-a* 'at home' is not a frozen relic, but a morpheme that controls the Mode interpretation in the absence of an overt locative adposition.

6 Morpheme orders

This section looks at morpheme orders in PPs across languages with the aim to gain insight into two issues. First of all, assuming with Kayne (1994) (a.o.) that the ordering of elements provides insights into their structural arrangement in terms of c-command, I argue that these orderings provide evidence in favor of K being generated higher than P, and against generating K lower than P. Second of all, I argue (following Cinque 2005) that movements within the extended projection are restricted, with the consequence that certain morpheme orders cannot be generated.

Among the patterns which are well attested, two have a clear dominance; I list them below:

(51) a. K > P > DP
b. DP > P > K

I illustrate these orders for three types of modes, namely stative locative, allative and ablative. I am going to stick to examples where spatial and non-spatial cases overlap (LOC=INS, ALL=DAT and ABL=GEN); this is done for clarity of presentation. However, if I am right about the general format of the relations between spatial and non-spatial cases (see section 4), then this has no real significance.

The example (52) illustrates the pattern (51-a) on the example of Chamorro. (52-a-b) show respectively that *gi* is an instrumental marker, and that its presence in an adpositional phrase yields static locative interpretation:[14]

(52) Chamorro (Topping, 1973, 119-122)
a. **gi** lasu
by lasso
'by lasso'
b. **gi** papa' i lamasa
LOC under the table
'under the table'

(53) illustrates a similar pattern for goal marking in English. (53-a) shows that *to* is a dative marker. (53-c) shows that its addition to a locative PP (illustrated in (53-b)) yields an unambiguous goal-directional interpretation.[15]

(53) a. He gave the book **to** John
b. The boat floated under the bridge
c. The boat floated (?**to**) under the bridge

The same ordering can be also illustrated for source marking in some dialects of Dutch. In such dialects, it is possible to put the genitive marker *van* (illustrated in (54-a)) to the left of the configuration marker *onder* (illustrated in (54-b)), yielding a source directional reading in (54-c):[16]

(54) Dutch
a. het huis **van** de buurvrouw
the house of the neighbor
'the neighbor's house' (Weerman and de Wit, 1999, 1156)
b. Ik zit onder de tafel.
I sit under the table
'I sit under the table.' (Helmantel, 2002, 3)
c. dat hij **van** onder de auto is uit gekropen
that he from under the car is out come
'that he came out from under the car' (Helmantel, 2002, 52)

[14]The English bi-morphemic adposition *with-in* seems to illustrate the same phenomenon.
[15]A similar pattern has been illustrated for Macedonian, see (6).
[16]The Macedonian morpheme *od*=GEN/ABL has a similar distribution like the Dutch *van* (Koneski 1967).

Switching to the mirror image order (51-b), we find an example in Udmurt static locatives. (55-a) shows a noun in the instrumental case, bearing the suffix *-i̯n*. The same suffix follows the postposition *ul* 'under' in (55-b). (55-c) shows that replacement of the instrumental marker by an illative case changes the interpretation from static to goal directional; this suggests a direct link between the instrumental marker in (55-b) and a static reading (cf. (12)).

(55) Udmurt (Winkler 2005, 18,62)

a. busi-os-**i̯n**
field-PL-ins

b. ʒe̯k ul-**i̯n**
table under-INS
'under the table' (static)

c. ʒe̯k ul-e̯
table under-ILL
'to under the table'

Another example of such a word-order pattern can be provided by goal marking in Malayalam. The first two examples set the stage, and show the DAT marker, and the bare locative, respectively. (56-c) then shows that suffixing the dative to the locative yields goal directional interpretation.[17]

(56) Malayalam (Asher and Kumari 1997, 113, cf. Jayaseelan 2009)

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

b. Viiʈʈ-il aarokke uɳʈə
house-LOC who all be-PRES
'Who are there at home?'

c. kiḻihaḷ kunʈʈ-il-**eekkə** parannu pookunnu
birds nest-LOC-DAT fly-PP goPRES
'The birds fly to their nests.'

Another instance of such an ordering (with source marking identical to the genitive) can be found in Boraana Oromo, a Cushitic language spoken in Kenya. (57-a) shows the genitive form of a noun whose base (corresponding to the direct object form) ends in a short vowel (*cifa* 'chief'); the genitive is expressed by lengthening of the final vowel. (57-b) shows that the same process (lengthening of the final vowel) targets the adposition in ablative contexts. (57-c) then shows that the absence of such a lengthening correlates with the absence of a source interpretation:

(57) Boraana Oromo (Stroomer 1995)

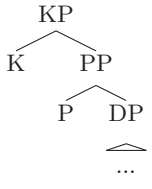
a. mina cif-**aa**
house chief-GEN
'the house of the chief' (p. 97)

b. innii mana kees-**aa** bae
he house in-GEN go-out.past
'He went out of the house.' (p. 100)

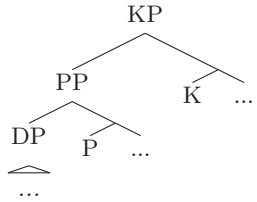
c. karaa keesa c'ic'iifti
road in lie
'lie in the road' (p. 123)

I assume that these two common patterns correspond to the base order (58-a), and its inverse derived by roll-up type of movement (58-b):

(58) a.



b.



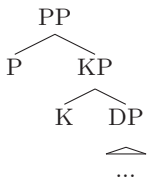
Based on the results in Cinque (2005), the two orders (51) (depicted structurally in (58)) are

[17] In the works cited, *kkə* and *eekkə* are treated as two allomorphs of the dative. I found the same syncretism with an identical order of affixes in Tsez, see (46), Burushaski (Anderson 2007) and two Tibeto-Burman languages Garo (Burling 2003) and Atong (van Breugel 2008).

expected to be the two most common ways to order a base-generated hierarchy K > P > DP, and the fact that this expectation is corroborated by the facts provides an argument in favor of positing such an underlying structure. Under the traditional view, according to which adpositions assign case down onto their complement, such orders are unexpected. That is because in all such examples, the case marker is separated from the noun by an intervening adposition. The theory leaves it is unclear why a case marker that belongs with the noun should detach from it in so many languages, and migrate to the periphery of the PP.

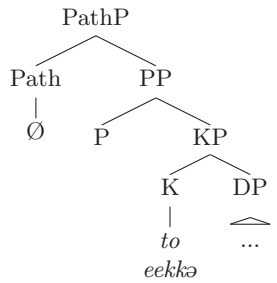
One attempt to explain this in the traditional theory has been made by Jayaseelan (2009). I am going to introduce a simplified version of the proposal briefly, and give some reasons for not adopting it. In thre proposal, all orders are derived from the traditional underlying sequence (59).

(59)



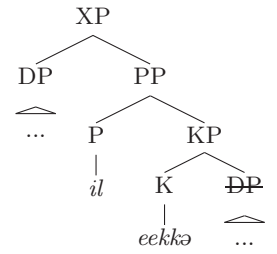
Further, Jayaseelan assumes that case morphemes are generated under K only. This is an important part of the analysis, one which accounts for the observed homophony. Specifically, if there is no locative structure errected on top of KP, these morphemes have their regular case reading. Now according to Jayaseelan's theory, their Mode reading arises by virtue of their ability to license a silent directional element generated above P. For example, the Malayalam and English datives have the power to license a null Goal Path:

(60)



The way the zero Goal Path gets licensed is by creating a configuration where K is string adjacent to Path. There are various ways this can happen, and these correspond to various word-orders. In Malayalam, the DP moves from within the KP (to create a constituent with K final), and lands above the projection of the locative case:

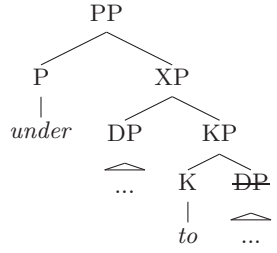
(61)



Here we have already reached the desired order: DP > Loc > Dat. Once we merge the null Path, we have to license it by a Dat final constituent. In Malayalam, this happens by moving the whole XP to Spec,Path, leading to the desired licensing configuration without any change in word order.

English differs from Malayalam on two counts. First of all, the DP lands below PP:

(62)



And second, once the null Path is merged on top of (62), only *to* moves higher up, leading to the

desired output (*to under DP*).

On the general level, it should be noted that Jayaseelan's theory is an interesting alternative in the present context, because it hods the promise of accounting for both the syncretism facts and for the various word order patterns. There are, however, several reasons that favor my proposal to the one sketched above, and I turn to these immediately below.

First of all, most of the stirring in the base structure is triggered by the need to license a null Path; but the manner in which the null Path gets licensed is not very elegant in several respects. The most pressing issue to my mind is why string adjacency should matter.

Second, in a language like Malayalam, there is no constituent that contains the noun and the Loc element to the exclusion of the dative marker at any level of representation. However, if I am right about the analysis of P-drop in section 5, then such a constituent is required to handle the Tsez examples in (47). To illustrate the reasoning on Malayalam directly, I turn to (63). In (63-a), the goal reading is expressed by stacking the dative on top of the locative, and the locative cannot be dropped. Omitting the locative marking is, however, possible with inherently locational nouns, such as the place name Trichur in (63-b).

(63) Malayalam P-drop (Asher and Kumari 1997, 225)

a. ɲaan paʈʈaɳatt *(-il) -eekkə pooyi
   I town -LOC -DAT go-PAST
   'I went to town.'

b. ɲaan tɹʃʃuur-kkə pooyi
   I Trichur.DAT go-PAST
   'I went to Trichur.'

If the omission of the locative Marking is due to phrasal spell out (as I have argued above), then Malayalam requires the DP and the Loc element to form a constituent. And since this constituent is missing in Jayaseelan's theory (see (61)), we have a reason to favor the current proposal over the more traditional alternative.

Lastly, generating the English word order makes use of a formal device that can be avoided if the base hierarchy K>P>DP is adopted. In particular, the last step of the derivation in English represents a step of remnant movement of a particular type, namely one where a projection without the noun in it undergoes remnant movement. Such a step is not necessary under the proposal defended here (see (58)), and hence, the theory presented here is compatible with a ban on remnant movement of constituents that the noun has extracted out of. But why should there be such a ban?

First of all observe that the ban is identical to one of the the conditions on movement argued for by Cinque (2005). In particular, Cinque (2005) argues that adopting such a condition is necessary in order not to over-generate possible orders of the noun, adjectives, numerals and demonstratives, i.e., elements inside the extended projection of the noun.[18] Thus, the type of movement under discussion may be considered unavailable simply because spatial adpositions are part of the extended projection of the noun, understood as a sequence of projections starting at N and ending at K. The general statement of such a ban then takes the following form:

(64) Linearization and movement

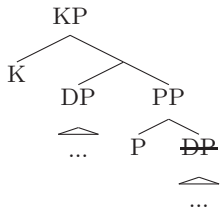
a. The noun is the 'lexical' head of a sequence that includes adpositions and cases
b. Asymmetric c-command maps onto linear precedence
c. Movement targets only c-commanding positions (corollary: no rightward movement)
d. Movements within a single functional sequence displace only constituents containing the 'lexical' head of the sequence (rules out the type of remnant movement under discussion)

Second of all, allowing for remnant movement of this type makes it possible for any word order to be generated; dispensing with such a device makes a prediction that certain orders cannot be generated. Thus, to the extent that some orders are unattested (an issue I turn to below), Jayaseelan's theory fails to capture this.

Let me then first turn to the issue of orders that may and may not be generated under the current proposal, dispensing with remnant movement of the kind seen above. We have already seen the base generated order, and its mirror image. Apart from these, there is the possibility of raising the DP only one step, i.e., above P, but lower than K:

[18] In fact, if Cinque (2009) is correct, then the ban holds of extended projections quite generally.

(65)



This corresponds to the ordering K > DP > P. Two examples of this order are provided below (one for LOC=INS, and another one for ABL=GEN).

The first example comes from Amharic, and shows that in this language, the instrumental marker *bä*, illustrated in (66-a), may enter into complex PPs of the sort shown in (66-b). The locative contribution of the prefix is revealed by comparison with (66-c), which shows that its replacement changes the interpretation to a source reading (a similar word order pattern with LOC=INS can be found in Pashto, see Tegey and Robson 1996, 154-156).

(66) Amharic (Leslau, 1969, 399,402)

a. bä- təyyət
INS bullet
'with a bullet'

b. bä- bet wəsṭ
INS house inside
'in the house'

c. kä- bet wəsṭ
from house inside
'out of the house'

The same word order pattern is attested in Fongbe source marking (with ABL=GEN). The language has a genitive marker *sín*, illustrated in (67-a). When this marker precedes a postpositional phrase in (67-b), we get a source reading. The fact that the genitive marker is responsible for the source interpretation is confirmed by comparison with (67-c), where its replacement correlates with the loss of source interpretation.[19]

(67) Fongbe, (Lefebvre and Brousseau, 2002, 45, 302)

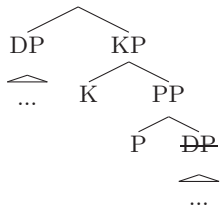
a. Kɔ́kú **sín** Aristote sín ɖìɖè lɛ́
Koku gen Aristotle GEN sketch PL
'Koku's sketches of Aristotle'

b. Kɔ́kú wá **sín** àxì mɛ́
Koku came from market in
'Koku came from within the market.'

c. Kɔ́kú ɖó àxì mɛ́
Koku at market in
'Koku is in the market.' (Lefebvre and Brousseau, 2002, 325)

Proceeding to a next type of an example, consider a hypothetical derivation where the noun phrase raises across P and K without inverting their order:

(68)



Such a derivation corresponds to a word order DP > K > P. Such orders are rare, but attested.[20]

[19] A related language Gungbe (Aboh 2010) has the same word order, and shows DAT/ALL syncretism.

[20] It is worth mentioning here that we apparently find such orders in "complex PPs". An illustration is provided by the Punjabi (i-a):

(i) kàr de picche
house GEN behind
'behind the house' Punjabi (Bhatia 1993, 198)

However, as I am going to argue later, such complex PPs (with genitive marking between the adposition and the noun)

One example comes from Iatmul, a Papuan language spoken in the Sepik district of Papua New Guinea. (69-a) shows that the language has a dative/benefactive suffix *koot*. When this suffix is further followed by the locative morpheme *ba*, we get a goal directional reading. (69-c) then shows that the disappearance of the dative marker correlates with the loss of directionality.

(69) Iatmul (Staalsen 1965, 10,21)

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

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

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

The infrequent attestation of this pattern is surprising for the standard theory. According to this view, postpositions (like prepositions) assign case to their complements, and hence, this should be one of the frequent patterns. But it is not.

There is yet another way in which this pattern is problematic for the standard theory. According to this theory, this pattern should arise in postpositional languages that are case suffixing. But among the couple of languages that have this order, some have case prefixes, rather than suffixes. One such language is Parengi-Gorum, a Munda language spoken in Andhra Pradesh. The first example (70-a) shows the dative prefix *e* marking an experiencer. When this marker precedes the postposition *tur*, we get a phrase that is ambiguous between a location and a goal (as far as I could determine). (70-c) then shows that the replacement of the dative marker yields source interpretation:[21]

(70) Parengi-Gorum Aze (1973)

a. udubun **e**-ning dat'am ada?-r-ing-ay
yesterday to-me much thirst-P-me-sp
'Yesterday, I was very thirsty.' 266

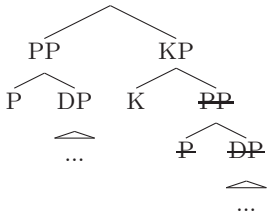
b. boldrum [krist'el **e**-tur] lorung li?n-ru
Boldrum Christel LOC-P oil rub-P
'Boldrum rubbed oil on Christel.' 249

c. no?n a?sung **o?**-tur ui?-nu? lu?ru
he house from-P go-INF PRES.CONT
'He is going from the house.' 272

Now the fact that *e-* is a prefix means that if it were a marker of the DP, it should be prefixed to it. But instead, it is prefixed to the adposition, something that makes sense if this marker is generated above P, and it is pronounced as a proclitic on the first element down the tree.

The last word order option which is predicted (i.e., starting from the proposed base-generated structure and respecting the constraint on a particular type of remnant movement) is the one which is characteristic of a number of old and modern Indo-European languages. This is the possibility of raising the PP to the left of K:

(71)



Two examples follow. The first one comes from Latin where LOC=INS. (72-a) shows the instrumental plural marker *is*. This marker surfaces again in the static locative (72-b). Its role as a locative marker is corroborated by the fact that its replacement by the accusative correlates with the loss of the static locative reading, see (72-c).

(72) Latin

a. certantes pugn-**is**
fighting fists-INS

have a recursive bi-nominal structure with the genitive corresponding to possessor marking.

[21] Osage (Quintero 2004, 227-235) shows a similar pattern.

'fighting with fists' Allen and Greenough 1975, §409

b. In silv-**is** abditi latebant.
in woods-INS.PL hidden lie hidden.PAST.IMPERF.3.PL
'They were lying hidden in the woods' (Latin, Hale and Buck 1903, §433)

c. cum in castr-a contede-re-nt
when into camp-ACC.SG hurry-SUBJ.PAST.IMPERF-3PL
'when hurrying into the camp (Latin, Hale and Buck 1903, §381)

The second example comes from Ancient Greek, where ABL=GEN. The genitive marker *-ou* is illustrated in (73-a), and, as shown in (73-b), it also attaches to nouns in adpositional phrases to yield source interpretation. The role of the genitive as a source marker is confirmed by the comparison with (73-c), where its replacement by the dative/instrumental case correlates with the absence of the source directional reading.

(73) Ancient Greek

a. Hērodót-**ou** historíēs
Herodotus.GEN history.GEN
'(exposition) of the history of Herodotus' Lehmann and Slocum (no date)

b. iónta par' Eurút-**ou**
coming at Eurytos-GEN
'coming from Eurytos' Luraghi (2003, 76)

c. parà nusì
at ship.DAT.PL.
'by the hollow ships' Luraghi (2003, 76)

Discussing Latin and Ancient Greek in juxtaposition to all the languages discussed above has the purpose of allowing us to look at the familiar pattern in a new perspective. In particular, the Latin adpositional phrase contains the same elements as the Wolaytta (12), the Chamorro (52), the Udmurt (55), or the Amharic (66): the noun, an adposition, and an ambiguous INS/LOC marker. Similarly, the Ancient Greek pattern contains the same elements as the Dutch (54), Meithei (27), Boraana Oromo (57) and Fongbe (67). Given the shared elements, we should have a theory which unifies these patterns at an underlying level, and attributes the various word order possibilities to variation in movement height and type. The standard view – which considers case a nominal feature that is assigned/valued by the adposition – contributes little in this direction. On the other hand, under the current view, the classical Indo-European pattern is just a predicted special case of a general scenario.

Up to now, I have discussed 5 out of 6 logical possibilities to order the three items under discussion (K, P, DP). The last remaining possibility is given in (74):

(74) P > K > DP

This order cannot be generated, if we adopt the base generated sequence K>P>DP, and the condition that all moving constituents must contain the head noun. The reasoning is this: since K and P cannot move without the DP (containing the noun), they can never switch order if the DP does not move. And since the DP has not moved in (74), K and P could not have either, and hence, they must come in the base order.

The impossibility to generate the order (74) sets this particular theory aside from two conceivable alternatives. The first alternative corresponds to the traditional view, according to which P>K>DP is in fact the base order, and hence, it should be fairly common. The second alternative is a theory which adopts the current view, namely that case marking applies to PPs, but rejects the ban on the movement of noun-less constituents. I believe that these two theories fail, because the order P>K>DP is in fact unattested (cf. Cinque 2010, n.16).

This claim, however, requires two qualifications, because there are surface examples of P>K>DP. However, I believe that no such example should be treated as a permutation of the base order Mode>Loc>DP, i.e., as an instance of Loc>Mode>Ground (where Loc=P, Mode=K and Ground=DP). In particular, I argue that there are two alternative sources for such orders, and that these exhaust the empirical attestations of P>K>DP.

The first potential source of such orders are complex adpositional phrases of the sort shown in (75):

(75) in front **of** the house

In this example, apparently, a case marker *of* intervenes between the (complex) adposition (*in front*) and a noun phrase, an ordering which I claim to be unattested. On closer inspection, however, it becomes clear that the case marker *of* is not an exponent of Mode. That is because Mode in such

examples is in fact expressed at the expected place on the left periphery of the PP, while *of* shows no sensitivity to Mode distinctions:

(76) ?**to** in front **of** the house

What is then the status of *of*? I believe that the presence of two case markers in (76) reveals that such examples cannot represent a single functional sequence. That is because the functional sequence is an irreflexive ordering of elements, in other words, it is never the case that A > A. And since in (76), we have two instances of A=K, we must be looking at a recursion of two independent functional sequences.

Languages other than English offer neater illustrations of recursion. For instance, Spanish shows the repetition of two *de*-s:

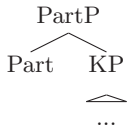
(77) El libro está **de**-lante **de** la mesa.
the book is.loc of.front of the table
'The book is in front of the table'

Hence, it seems that we are looking at bi-nominal structures, where the *of*-phrase is in a possessive relation to the noun *front*. Such a conclusion has been reached independently for various complex PPs across various languages (see Kayne 2004, Pantcheva 2008, Terzi 2010a).[22] [23]

Another source for apparent P>K>DP orders are examples where a particle attaches to the top of a KP (where KP is understood in the theoretical sense argued for here, i.e., as a constituent that contains the adposition). An example from Svenonius (2010) appears in (78-a), and a schematic illustration is in (78-b):

(78) a. The boat drifted [**in** [from beyond the city limits]]

b.



The scheme (78-b) may yield apparent instances of P>K>DP in case (i) the particle is homophonous to an adposition, and (ii) Mode and Loc (K and P) are expressed by a single morpheme, homophonous to a case marker.

For example, the English phrase

(79) into the house

has two possible analyses. One analysis says that *in* is the exponent of Loc, and raises across *to* in Mode (see, e.g., Jackendoff 1983, 163 for an early version of a proposal along these lines). This analysis is incompatible with my proposal. However, there is an alternative approach, which says that *in* is a particle sitting on top of a goal directional constituent, a KP in current terms. This approach has been independently argued for by Noonan (2010), who shows that there are certain advantages associated with the latter proposal.

Concluding, what is missing in my data is a "clear" example of P>K>DP order such that this order unambiguously represents a permutation of the underlying Mode>Loc>Ground. I take this to be a significant finding; if correct, the theory should be able to derive it. Under the current approach, the observation follows from the combination of two proposals:

(80) a. the base order is K>P>DP
b. adpositions are part of the nominal extended projections, subject to restrictions on movement argued for in Cinque (2005).

7 The implicational ban on P-stranding

An approach along the lines of (80) has nn interesting consequence: it makes it impossible to derive a constituent that contains the DP and the case marker to the exclusion of the adposition. In order

[22] Examples of complex PPs are interesting in the sense that once the possessor of *front* is ignored, we arrive at a simplex PP *to in front*, with the expected order K>P>DP.

[23] I am aware that there are contrasts between regular nouns and expressions such as *front*; see Svenonius (2006) for a detailed cross-linguistic study. I believe that such differences do not make the analysis of *front* as a noun (of sorts) impossible. In particular, I suggest that such special nouns (like 'front') are by and large analogous to nouns that participate in P-drop (safe for their inherently relational nature), which is suggested by a large number of interesting empirical parallels between these two (logically independent) classes of expressions. Among the properties that *front* shares with instances of P-drop, there is the impossibility of modifying *front* by determiners and adjectives.

to derive such a constituent, we would have to move the adposition out of the KP in one way or another. However, such movement is not allowed because of the ban on movements that do not move the noun along. This conslusion is valid universally, i.e., for all attested orders of K, P and DP, where K=Mode, P=Loc, and DP=Ground.

From that, it follows that a noun with a case affix cannot move on its own to the exclusion of the (spatial) adposition (since that would be a non-constituent movement). In other words, if the noun cannot strand the case marker, it will not be able to strand the (spatial) adposition. I will call this corollary of (80) *The implicational ban on P-stranding*:

(81) *The implicational ban on P-stranding*: if a language disallows case stranding, it disallows P-stranding

The current section is devoted to the investigation of (81). In particular, the proposal opens up a possibility that there may be languages where the ban on P-stranding simply arises as an automatic consequence of the impossibility to strand case morphemes. In what follows, I take a slightly more detailed look at P-stranding in Czech, and argue that it shows the hallmarks of (81).[24]

7.1 P-stranding in Czech

Let me start the discussion of Czech by introducing a descriptive statement that describes the impossibility of case stranding (perhaps an instance of Lasnik's 1981 Stray Affix Filter):

(82) The ban on K-stranding: in Czech, a DP cannot strand its case.

The ban rules out (83), among others:

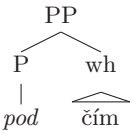
(83) *Co jsi to udělal em
what did you it do INS
'What did you do it with.'

The ban (82) is independent of what one says about preposition stranding, and everyone has to have it in one form or another. With that in mind, consider the fact that in Czech, the complement of a preposition cannot strand the preposition under movement:

(84) The ban on P-stranding
a. *Č-ím$_i$ seděl [pod t$_i$]?
what-INS sat.3SG under
'What was he sitting sitting under?'
b. [Pod č-ím] seděl?
under what-INS sat.3SG
'What was he sitting under?'

All current approaches to this issue I know of take as a starting point the proposal that the wh-pronoun, including its inflection, represents the complement of the preposition:

(85)



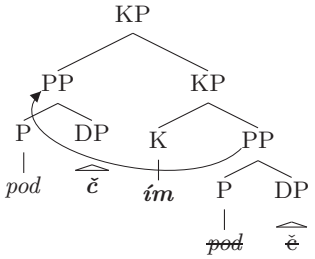
A virtually forced consequence of this assumption is that the inability of the inflected wh-item to move on its own is to be treated as a matter of locality: PPs (in Czech) are islands (see van Riemsdijk 1978, Abels 2003, a.o.).[25]

However, under the current approach, an alternative becomes available. This alternative arises because the wh-item and the case marker do not form a constituent to the exclusion of the preposition. See the boldfaced material in (86).

[24] An important qualification in a broader perspective is that (81) says nothing about P-stranding or case stranding per se. For example, there may be a language that allows for stranding of both case morphemes and spatial adpositions (a number of varieties of English). There may also be a language that strands case morphemes, but does not strand spatial adpositions (Gungbe, Aboh 2010). The only prediction is that there may not be a language that does not allow case stranding, but allows P-stranding. This prediction is largely borne out; Icelandic and Faroese are potential counterexamples that await future research (see, e.g., Jónsson 2008).

[25] See Hornstein and Weinberg (1981) and Kayne (1981) for an alternative suggestion, under which UG imposes a ban on traces bearing oblique case.

(86)



Hence, the current approach opens up the possibility that (84-a) does not need to be ruled out by an independent statement; it follows from the proposed constituency:

(87) The implicational ban on P-stranding: if a language disallows case stranding, it disallows P-stranding

The next sub-section offers a first piece of evidence for this conclusion; it comes from the interaction between P-stranding and sluicing.

7.2 P-stranding and sluicing

Sluicing is a type of ellipsis that operates in constituent questions and deletes everything but the wh-phrase (see Merchant 2001, Merchant 2006 and references there). I illustrate below on an English example:

(88) Jack bought something, but I don't know what.

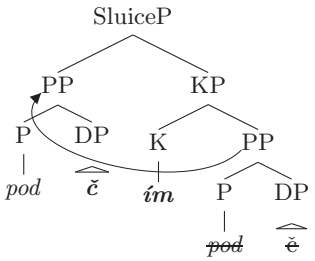
There are two properties of sluicing that are relevant from the perspective of P-stranding. The first relevant property is that across a number of languages, the wh-phrase which precedes the ellipsis site "must bear the case that its counterpart in a non-elided structure would bear" (Merchant 2006). I illustrate by Czech data:

(89) Honza ho něčím naštval, ale já nevím { č-ím / *c-o / *... }
Honza him something.INS annoyed, but I NEG-know what-INS what-NOM
'Honza annoyed him by something, but I don't know by what.'

In current terms, this means that the wh-phrase which precedes the ellipsis site must minimally contain the wh-phrase and a K head that matches with that of the antecedent. This may be so for various reasons; according to one line of research, this is related to the fact that the ellipsis site contains a full-fledged syntactic structure. Consequently, the the wh-item bears case because it cannot stranded it under movement (the ban on K-stranding). Alternatively, this may be a consequence of some interpretive requirement, such that the wh-phrase needs to be related to a particular grammatical role.

Be that as it may, the proposal of the preceding section immediately predicts that in adpositional phrases, the smallest constituent that contains the wh-marker and its case inflection also includes the preposition. I show that in the tree below, where SluiceP stands for the smallest constituent that contains the wh-item and the case marker:

(90)



This is an interesting prediction, because it produces a contrast with locality based approaches. To see why, let me turn to a second property of sluicing, namely the fact that sluicing does not obey islands (Merchant 2006). I illustrate below with a Czech example of a complex NP constraint:

(91) Chtějí zaměstnat člověka, který v něčem vyniká, ale nevzpomínám si v
want.3PL hire person which in something is excellent but NEG.remeber.1SG REFL in
čem.
what

'They want to hire [a person that is exceptional **in something**], but I can't remember what (in).'

The point is that the wh-phrase that precedes the ellipsis site interpretively belongs within a relative clause that modifies the NP 'person', and hence, should not be able to extract from there. This is shown by the ungrammaticality of (92), where the assumed elided structure is simply pronounced:

(92) *... ale nevzpomínám si v čem chtějí zaměstnat člověka, který vyniká.
but NEG.remeber.1SG REFL in what want.3PL hire person which is excellent

The conclusion is that since (91) is fine, then sluicing improves (at least some) island violations.

On analogy with such examples, one would expect that if P-stranding is an island violation, then prepositions *can* be stranded under sluicing. Hence, we have two theories with different predictions and we can have a look at what the facts are. The first look suggests that P-stranding is impossible under sluicing (Merchant 2001, Merchant 2006). I illustrate below in (93), where the preposition must be present:

(93) Petr pod něčím seděl, ale já nevím *(pod) čím.
Peter under something.INS sat, but I NEG.know.1SG under what
'Peter was sitting under something, but I don't know what.'

If such examples are representative (an issue I turn to below), then the constituency based explanation for the ban on P-stranding has an advantage over the approach based on locality.'

Now the locality theory (of course) has a way to deal with this apparent problem: the claim is that islands are of two kinds, LF and PF, and only PF islands disappear under ellipsis. Then, if the ban on P-stranding is an instance of a LF island, it will actually be observed under sluicing. I see three problems with such a move. First, such a bifurcation is suspicious, because the ban on P-stranding is the only example of an LF island, as far as I understand from the literature. Second, the traditional theory encodes by stipulation what the present alternative derives. Third, there is a potential empirical problem, which I turn to in the next section.

7.3 P-stranding, sluicing and left branch extractions

The discussion in this section continues looking at the interaction of P-stranding and sluicing, and adds another phenomenon into the picture, namely Left Branch Extraction (LBE). Let me then first say what LBE is.

Left branch extraction refers to a movement of a left branch of an extended NP out of that NP. In English, such an extraction is ungrammatical:

(94) a. *Whose did you see [t-wh car]?
b. *How big did you see [a t-wh car]?

I will refer to the impossibility to move such left branches as the ban on LBE (BLBE). Ever since Ross (1967), it has been known that some languages apparently allow LBE. Czech is among them, see (95):

(95) a. Čí si tam viděl auto?
whose did-you there see car
'Whose car did you see there?
b. Jak velké si tam viděl auto?
how big did-you there see car
'How big a car did you see there?

Even though the proper analysis of such examples is a matter of debate, I believe there is good evidence that the phenomenon does not violate BLBE (Franks and Progovac 1994, Abels 2003, Bašić 2004); in other words, the left branch does not move, despite appearances. I indicate this by a star in front of the derivation (96):[26]

(96) *whose did you there see [t-whose car]

Rather, the example involves short noun movement (97-a), followed by remnant movement of a larger constituent containing the left branch (97-b):

(97) a. see car [whose t-car]
b. [whose t-car] did you there see car

[26] See Bošković 2005 for an approach along the lines of (96).

One of the most convincing pieces of evidence involves LBE out of adpositional phrases. Thus, when a left branch is to be extracted out of a PP, it cannot move on its own (98-a), but it has to pied-pipe the adposition along (98-b):

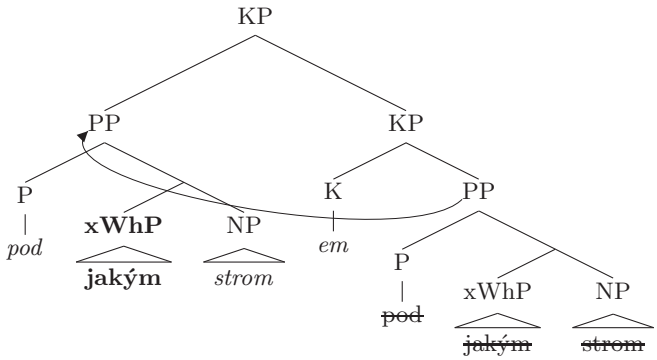
(98) a. *Jakým seděl [pod t-wh stromem]?
which did he sit under t-wh tree
b. [Pod jakým t-tree] seděl stromem?
under which t-tree did he sit under tree
'Which tree was he sitting under?'

This fact follows if in Czech (as well as in English) the left branch never moves on its own (hence (98-a) is out). The apparent movement of a left branch is in fact movement of a larger constituent, and (98-b) shows this on its sleeve. Repeating what is crucial: I assume that examples of LBE never involve a direct movement of the left branch, but involve a short noun movement followed by a step of remnant movement.

Notice that under such an approach, (98-a) is not ruled out as an instance of a P-island violation: it is an instance of BLBE.

To show a concrete example of the PP structure with a wh left branch in it, let me turn to (99). In the diagram, xWhP refers to the extended projection of the adjective-like wh-phrase, which, in Czech, includes an agreement marker licensed by the K generated higher up. As highlighted in detail in the previous section, I assume that the whole PP moves to the left of the case marker:

(99)



The xWhP is boldfaced in the derived position, because it is immobile by whatever principle ensures that the English (94-a) is ungrammatical.

With this much background, consider now whether the left branch alone can escape the PP under sluicing. The first relevant observation is that the BLBE disappears under sluicing (in English). Thus, while (100-a) is ruled out as an instance of BLBE, the ban is shifted in (100-b), which involves sluicing.

(100) Left-branch extraction (Merchant 2006):
a. *I don't know how big she bought [a t-how big car].
b. She bought a big car, but I don't know how big.

This means that the ban on left branch movement is an instance of a PF type of island, and hence, that left branches become mobile under sluicing. The second question is whether the left branch can extract out of the PP. According to the theory where PPs are LF islands, the answer is no; the xWhP should not be able to escape (unless additional assumptions are added). Under the current theory, there is no independent ban on P-stranding whatsoever, and hence, the question does not even arise. Consequently, we expect the left branch to be able to move out of the PP.

The latter expectation is borne out:

(101) Petr seděl pod nějakým stromem, ale já nevím jakým
Petr was sitting under some tree, but I NEG-know which
'Peter was sitting under a tree, but I don't know which one/what kind of.'

The acceptability of (101) thus presents a problem for the theory which says that PPs are LF islands (and the theory can only be rescued by additional principles). On the other hand, the current theory in fact predicts that there should be a contrast in the way complements and left branches extract out of PPs. I take this to be yet another point in favor of the current proposal.[27]

[27] The same contrast between complement vs. left branch extraction has been discovered in Polish (a language closely related to Czech) by Nykiel (2010). Her paper offers an argument against deriving the P-stranding examples from an underlying cleft, as has been proposed by Szczegelniak (2008). Her data are replicated for Czech, according to my judgments.

7.4 Summing up P-stranding

The current section has explored the consequences of the proposal that case marking applies to PPs for the grammar of P-stranding. Specifically, the following statement is a theorem:

(102) *The implicational ban on P-stranding*: if a language disallows case stranding, it disallows P-stranding

I have argued that (102) holds the promise of explaining two things. First of all, we have an explanation for why P-stranding is observed under sluicing in Czech. Second of all, we also have an explanation as to why P-stranding is not observed for left branches under sluicing.

As far as Czech is concerned, the standard account fares worse on three counts. First of all, the ban on P-stranding needs to be independently stated. Second of all, it receives a special status, different from all other islands. Third, additional machinery has to be invoked to handle the fact that left branches are not sensitive to this special status. Such observations clearly make the locality explanation inferior to the account based on constituency.

8 Conslusions

In this paper, I have discussed evidence for the hypothesis that case markers in spatial adpositional phrases fulfill the function of Mode markers, and they are base-generated above spatial adpositions. The proposal removes the three paradoxes we have started from, and gains support from various domains of grammar. It explains why Mode markers are often syncretic with case markers (Mode markers are a special instance of case markers). It sheds light on cross-linguistically attested morpheme orders in adpositional phrases. It allows for a neat account of P-drop, and it offers new analytical directions in the domain of P-stranding.

If correct, this proposal has also consequences for the architecture of grammar. According to a millenia old understanding, all morphological concatenation precedes all syntactic concatenation (see Di Sciullo and Williams 1987, Williams 2007 for modern statements of this position). The grammar first produces inflected words (morphology), and arranges them into larger chunks only later (syntax). The current proposal, however, says that a number of facts falls in place only if case affixes attach to PPs, rather than more narrowly to the nouns PPs contain. If this is correct, then morphological concatenation (affixation by case) may follow syntactic concatenation (the addition of an adposition). This conclusion is in line with some of current research (Julien 2002, Starke 2009), but it is surely not uncontroversial.

However, turning the perspective, one may reasonably suspect that the conscious or unconscious adherence to such traditional assumptions concerning the organization of grammar lies behind the widespread view that adpositions case mark their complements. Here, I have argued that once we abandon this old assumption, a better theory of case marking emerges.

References

Abels, Klaus. 2003. *Successive Cyclicity, Anti-locality, and Adposition Stranding*. Ph.D. thesis, University of Connecticut, Storrs.

Aboh, Enoch O. 2010. The P route. In *The Cartography of Syntactic Structure, vol.6*, edited by Guglielmo Cinque and Luigi Rizzi, pp. 225 – 260. Oxford University Press, Oxford.

Allen, Joseph Henry and James Greenough. 1975. *New Latin grammar*. Cartazas Brothers, Publishers, New York.

Anderson, Gregory D. S. 2007. Burushaski morphology. In *Morphologies of Africa and Asia*, edited by Alan S. Kaye, pp. 1233–1275. Eisenbrauns, Winona Lake, Ind.

Anderson, John. 2009. Case in localist case grammar. In *The Oxford Handbook of Case*, edited by Andrej Malchukov and Andrew Spencer, pp. 121–135. OUP, Oxford.

Asbury, Anna, Berit Gehrke, and Veronika Hegedűs. 2007. One size fits all: Prefixes, particles, adpositions and cases as members of the category P. In *UiL OTS Yearbook 2006*, edited by Cem Keskin, pp. 1–17. Utrecht Institute of Linguistics, Utrecht.

Asher, R. E. and T. C. Kumari. 1997. *Malayalam*. Descriptive Grammars. Routledge, London.

Aze, F. Richard. 1973. Clause patterns in Parengi-Gorum. In *Patterns in clause, sentence and discourse, part I*, edited by Ronald L. Trail, pp. 235–312. Summer Innstitute of Linguistics, University of Oklahoma, Norman.

Bašić, Monika. 2004. *Nominal Subextractions and the Structure of NPs in Serbian and English*. Master's thesis, Universitetet i Tromsø.

Bayer, Joseph and Markus Bader. 2007. On the syntax of prepositional phrases. In *Interfaces and interface conditions*, edited by Andreas Späth, pp. 157–179. de Gruyter, Berlin.

Bhatia, Tej Krishan. 1993. *Punjabi: cognitive-descriptive grammar*. Routledge, London.

Blake, Barry J. 1977. *Case marking in Australian languages*. Australian institute of Aboriginal studies, Canberra.

Blake, Barry J. 1994. *Case*. Cambridge University Press, Cambridge, second edn.

Bobaljik, Jonathan. 2011. *Universals in Comparative Morphology: Suppletion, superlatives, and the structure of words*. MIT Press, Cambridge, Mass.

Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59: 1–45.

van Breugel, Seino. 2008. *A Grammar of Atong*. Ph.D. thesis, La Trobe University.

Burling, Robbins. 2003. *The Language of the Modhupur Mandi (Garo), Volume 1*. Scholarly Publishing Office, University of Michigan Library, Ann Arbor, MI.

Caha, Pavel. 2007. Case movement in PPs. In *Nordlyd 34.2: Special issue on Space, Motion, and Result*, edited by Monika Bašić, Marina Pantcheva, Minjeong Son, and Peter Svenonius, pp. 239 – 299. University of Tromsø, Tromsø. Available at: www.ub.uit.no/munin/nordlyd/.

Caha, Pavel. 2009. *The Nanosyntax of Case*. Ph.D. thesis, CASTL, University of Tromsø.

Caha, Pavel. 2011. The parameters of case marking and spell out driven movement. *Linguistic variation yearbook 2010* 10: 33–78.

Cardinaletti, Anna and Michal Starke. 1999. The typology of structural deficiency: A case study of three classes of pronouns. In *Clitics in the Languages of Europe*, edited by Henk van Riemsdijk, pp. 145–233. Mouton, Berlin.

Chelliah, Shobhana Lakshmi. 1997. *A grammar of Meithei*. Mouton de Gruyter, Berlin, New York.

Chomsky, Noam. 1980. On binding. *Linguistic Inquiry* 11: 1–46.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Foris, Dordrecht.

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 *Universals of Language Today*, edited by Marcel Dikken, Liliane Haegeman, Joan Maling, Sergio Scalise, Elisabetta Magni, and Antonietta Bisetto, vol. 76 of *Studies in Natural Language and Linguistic Theory*, pp. 165–184. Springer Netherlands.

Cinque, Guglielmo. 2010. Mapping spatial PPs: an introduction. In *The Cartography of Syntactic Structure, vol.6*, edited by Guglielmo Cinque and Luigi Rizzi, pp. 3–25. Oxford University Press, New York.

Cinque, Guglielmo and Luigi Rizzi. 2010. The cartography of syntactic structures. In *The Oxford handbook of linguistic analysis*, edited by Bernd Heine and Heiko Narrog, pp. 51–65. Oxford University Press, Oxford.

Collins, Chris. 2008. Home sweet home. In *NYUWPL: Papers in Syntax*, edited by Lisa Levinson and Oana Savescu-Ciucivara, no. 1 in NYUWPL, pp. 1–34. Department of Linguistics, NYU, New York.

Comrie, Bernard. 1999. Spatial cases in Daghestanian languages. *Sprachtypologie und Universalienforschung* 52 2: 108–117.

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

Creissels, Denis. 2009. Spatial cases. In *The Oxford Handbook of Case*, edited by Andrej Malchukov and Andrew Spencer, pp. 609–625. OUP, Oxford.

Di Sciullo, Anna-Maria and Edwin Williams. 1987. *On the Definition of Word*. Linguistic inquiry monographs; 14. MIT Press, Cambridge, Ma.

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

van Eijk, Jan. 1997. *The Lillooet language: phonology, morphology, syntax*. UBC Press, Vancouver, B.C.

Fillmore, Charles. 1968. The case for case. In *Universals in Linguistic Theory*, edited by Emmon Bach and Robert T. Harms, pp. 1 – 90. Holt, Rinehart, and Winston, New York.

Franks, Steven and Ljiljana Progovac. 1994. On the displacement of Serbo-Croatian clitics. *Indiana Linguistic Studies* 7: 69–78.

Grimshaw, Jane. 1991. Extended projection. Ms. Brandeis University, Waltham, Mass.

Hale, William Gardner and Carl Darling Buck. 1903. *A Latin grammar*. Ginn and Co., Boston and London.

Helmantel, Marjon. 2002. *Interactions in the Dutch Adpositional Domain*. Ph.D. thesis, Leiden.

Hornstein, Norbert and Amy Weinberg. 1981. Case theory and preposition stranding. *Linguistic Inquiry* 12 1: 55–91.

Ioannidou, Alexandra and Marcel den Dikken. 2006. P-drop, d-drop, d-spread. Ms., CUNY.

Jackendoff, Ray. 1983. *Semantics and Cognition*. MIT Press, Cambridge, Ma.

Jayaseelan, K. A. 2009. Case movement and theories of case. Paper read at The Third Workshop of the International Research Project on Comparative Syntax and Language Acquisition, Nanzan University, March 12.

Jónsson, Jóhanes Gísli. 2008. Preposition reduplication in icelandic,. In *Microvariation in Syntactic Doubling (Syntax and Semantics, Volume 36)*, edited by Sjef Barbiers, Marika Lekakou, Margreet van der Ham, and Olaf Koeneman, pp. 403–417. Emerald Group Publishing Limited.

Julien, Marit. 2002. *Syntactic Heads and Word Formation*. Oxford University Press, New York.

Kayne, Richard S. 1981. On certain differences between French and English. *Linguistic Inquiry* 12 3: 349–371.

Kayne, Richard S. 1994. *The Antisymmetry of Syntax*. MIT Press, Cambridge, Ma.

Kayne, Richard S. 2004. Here and there. In *Lexique, Syntaxe et Lexique-Grammaire/Syntax, Lexis & Lexicon-Grammar: Papers in Honor of Maurice Gross*, edited by C. Leclère, E. Laporte, M. Piot, and M. Silberztein, pp. 253–275. John Benjamins, Amsterdam.

Koneski, Blaže. 1967. *Gramatika na makedonskiot literaturen jazik*. Kultura, Skopje.

Koopman, Hilda. 2000. Prepositions, postpositions, circumpositions, and particles. In *The Syntax of Specifiers and Heads*, edited by Hilda Koopman, pp. 204–260. Routledge, London.

Kracht, Marcus. 2002. On the semantics of locatives. *Linguistics and Philosophy* 25: 157–232.

Lamberti, Marcello and Roberto Sottile. 1997. *The Wolaytta language*. Rüdiger Köpke Verlag, Köln.

Langer, Yury. 2009. Varieties of genitive. In *The Oxford Handbook of Case*, edited by Andrej Malchukov and Andrew Spencer, pp. 581–592. OUP, Oxford.

Lasnik, Howard. 1981. Restricting the theory of transformations: A case study. In *Explanation in linguistics: the logical problem of language acquisition*, edited by Norbert Hornstein and David Lightfoot, pp. 152–173. Longman, London.

Lefebvre, Clair and Anne-Marie Brousseau. 2002. *A grammar of Fongbe*. Mouton de Gruyter, Berlin, New York.

Lehmann, Winfred P. and Jonathan Slocum. no date. Classical greek online. Http://www.utexas.edu/cola/centers/lrc/eieol/grkol-0-X.html.

Leslau, Wolf. 1969. *An Amharic reference grammar*. Department of Near Eastern and African Languages, University of California, Los Angeles.

Luraghi, Silvia. 2003. *On the Meaning of Prepositions and Cases: The Expression of Semantic Roles in Ancient Greek*. John Benjamins, Amsterdam.

McCawley, James D. 1988. Adverbial NPs: bare or clad in see-through garb? *Language* 64.3: 583–590.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford University Press, Oxford.

Merchant, Jason. 2006. Sluicing. In *The Syntax Companion*, edited by Martin Everaert and Henk van Riemsdijk, pp. 269–289. Blackwell:, London.

Moravcsik, Edith A. 2009. The distribution of case. In *The Oxford Handbook of Case*, edited by Andrej Malchukov and Andrew Spencer, pp. 231–245. OUP, Oxford.

Noonan, Máire. 2010. à to zu. In *The Cartography of Syntactic Structure, vol.6*, edited by Guglielmo Cinque and Luigi Rizzi, pp. 161 – 195. Oxford University Press, Oxford.

Noonan, Michael and Elena Mihas. no date. Areal dimensions in case syncretism: Ablatives and genitives. Ms. University of Wisconsin-Milwaukee.

Nykiel, Joanna. 2010. Sluiced phrases don't derive from clefts: evidence from Polish. Ms., University of Silesia, available at: http://ling.auf.net/lingBuzz/001081.

Pantcheva, Marina. 2008. The place of PLACE in Persian. In *Syntax and semantics of spatial P*, edited by Anna Asbury, Jakub Dotlačil, Berit Gehrke, and Rick Nouwen, pp. 305–330. John Benjamins, Amsterdam.

Pantcheva, Marina. 2010. The syntactic structure of locations, goals, and sources. *Linguitics* 48: 1043–1081.

Pantcheva, Marina. 2011. *Decomposing Path. The nanosyntax of directional expressions*. Ph.D. thesis, CASTL, Tromsø.

Pesetsky, David and Esther Torrego. 2004. Tense, case, and the nature of syntactic categories. In *The Syntax of Time*, edited by Jacqueline Guéron and Jacqueline Lecann, pp. 495–537. MIT Press, Cambridge, Ma.

Quintero, Carolyn. 2004. *Osage grammar*. University of Nebraska Press, Lincoln, Neb.

van Riemsdijk, Henk. 1978. *A Case Study in Syntactic Markedness: The Binding Nature of Prepositional Phrases*. Foris, Dordrecht, 2nd edn.

van Riemsdijk, Henk. 1990. Functional prepositions. In *Unity in Diversity*, edited by H. Pinkster and I. Gene, pp. 229–241. Foris, Dordrecht.

van Riemsdijk, Henk and Riny Huybregts. 2002. Location and locality. In *Progress in Grammar: Articles at the 20th Anniversary of the Comparison of Grammatical Models Group in Tilburg*, edited by Marc van Oostendorp and Elena Anagnostopoulou, pp. 1–23. Meertens Instituut, Amsterdam. www.meertens.knaw.nl/books/progressingrammar/.

Ross, John Robert. 1967. *Constraints on Variables in Syntax*. Ph.D. thesis, MIT, Cambridge, Ma.

Seyoum, Mulugeta. 2008. *A Grammar of Dime*. Ph.D. thesis, Universiteit Leiden.

Staalsen, Philip. 1965. Iatmul grammar sketch.

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

Stolz, Thomas, Cornelia Stroh, and Aina Urdze. 2006. *On Comitatives and Related Categories: A Typological Study with Special Focus on the Languages of Europe*. Mouton de Gruyter, Berlin New York.

Stroomer, Harry. 1995. *A grammar of Boraana Oromo (Kenya)*. Rüdiger Köppe Verlag, Köln.

Svenonius, Peter. 2006. The emergence of axial parts. In *Nordlyd, special issue on Adpositions*, edited by Peter Svenonius and Marina Pantcheva, no. 33 in Tromsø Working Papers in Linguistics, pp. 1 – 22. CASTL, University of Tromsø, Tromsø.

Svenonius, Peter. 2008. Projections of P. In *Syntax and Semantics of Spatial P*, edited by Anna Asbury, Jakub Dotlačil, Berit Gehrke, and Rick Nouwen, pp. 63–84. John Benjamins, Amsterdam.

Svenonius, Peter. 2010. Spatial P in English. In *The Cartography of Syntactic Structure, vol.6*, edited by Guglielmo Cinque and Luigi Rizzi, pp. 127 – 160. Oxford University Press, Oxford. Available at http://ling.auf.net/lingBuzz/000001.

Szczegelniak, Adam. 2008. Islands in sluicing in Polish. In *Proceedings of the 27th West Coast Conference on Formal Linguistics*, edited by Natasha Abner and Jason Bishop, pp. 404–412. Cascadilla Proceedings Project, Somerville, MA.

Talmy, Leonard. 2000. *Toward a Cognitive Semantics: Concept Structuring Systems, vol. I*. MIT Press, Cambridge, Ma.

Tegey, Habibullah and Barbara Robson. 1996. *A reference grammar of Pashto*. Center for Applied linguistics, Washington, D.C.

Terzi, Arhonto. 2010a. Locative prepositions and 'Place'. In *The Cartography of Syntactic Structure, vol.6*, edited by Guglielmo Cinque and Luigi Rizzi, pp. 196–224. Oxford University Press, Oxford. Available at http://ling.auf.net/lingBuzz/000550.

Terzi, Arhonto. 2010b. On null spatial ps and their arguments. *Catalan Journal of Linguistics* 9: 167–187.

Tomič, Olga Mišeska. 2006. *Balkan Sprachbund Morpho-Syntactic Features*. Springer, Dordrecht.

Topping, Donald M. 1973. *Chamorro reference grammar*. University of Hawaii Press, Honolulu.

Vangsnes, Øystein A. 2011. Syncretism and functional expansion in Germanic wh-expressions. Ms., Universitet i Tromsø.

Řezáč, Milan. 2008. Phi-Agree and theta-related Case. In *Phi theory: Phi-features across modules and interfaces*, edited by Daniel Harbour, David Adger, and Susana Béjar, pp. 83 – 129. Oxford University Press, Oxford.

Weerman, Fred and Petra de Wit. 1999. The decline of the genitive in Dutch. *Linguistics* 37.6: 11551192.

Williams, Edwin. 2007. Dumping lexicalism. In *The Oxford Handbook of Linguistic Interfaces*, edited by Gillian Ramchand and Charles Reiss, pp. 352–382. Oxford University Press, Oxford.

Winkler, Eberhard. 2005. *Udmurt*. Lincom, München.

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.