Syncretism as Merge F

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Abstract

In this paper, I summarise the research program followed in Caha (2009) along with its main hypotheses and results. The main goal of the project is to show how we can understand paradigms (with relations of syncretism and containment) as nothing but a surface reflex of the fundamental operation Merge F. I further review some of the problems pointed out in the subsequent literature concerning the syncretism of datives (Harðarson 2016) and present a solution to these problems proposed in Starke (2017). The solution consists in enriching the original case hierarchy with a new type of a dative and a new type of an accusative case. Starting from there, I note a curious possibility made available by Starkes solution, which allows for the existence of a language with a surface case hierarchy NOM—GEN—ACC—DAT—etc. I argue that this surface hierarchy is needed in order to deal with syncretism and containment in several Saami languages.

1   Syncretism as Merge F

The idea that syntactic structures are built incrementally by putting smaller pieces together is one of the fundamental properties of syntactic derivations (Chomsky 1995). In

the traditional (well-trodden) cases, the addition of a head F is always reflected by the addition of a visible morpheme, as in (1). α in such structures could easily be taken for a determiner or a preposition being added to a noun phrase; or for an infinitival marker added to a bare verb phrase, etc.

(1)

$$
\begin{array}{c}
\text{FP} \\
\overset{\frown}{\text{F} \quad \text{XP}} \\
\mid \quad \overset{\frown}{} \\
\alpha \quad \text{...}
\end{array}
$$

In a model with phrasal spell out (Starke 2009), the very same operation Merge F can be reflected in at least two additional ways: by syncretism and by over-ride. The crucial ingredient in obtaining this result is the so-called Superset Principle, which defines when a match between the syntactic tree and the lexical item arises, see (2).

(2)   *The Superset Principle* (Starke 2009):

       A lexically stored tree matches a syntactic node iff the lexically stored tree contains the syntactic node.

To see how phrasal spell out increases the options of how Merge F is reflected on the surface, suppose that a language has the lexical entry given in (3):

(3)

$$
\begin{array}{c}
\text{FP} \quad \Leftrightarrow /\alpha/ \\
\overset{\frown}{\text{F} \quad \text{XP}} \\
\overset{\frown}{\text{X} \quad \text{Y}}
\end{array}
$$

When syntax builds an XP, the XP can be spelled out by (3), since XP is contained in it.

(4) $\qquad$ XP $\Rightarrow \alpha$

$$\overset{\frown}{\text{X} \quad \text{Y}}$$

After merge F applies to XP, yielding FP, we can still spell out by α, since FP is contained in (3) as well.

(5) $\qquad$ FP $\Rightarrow \alpha$

$$\overset{\frown}{\text{F} \quad \text{XP}}$$

$$\overset{\frown}{\text{X} \quad \text{Y}}$$

The result is that two different structures—XP and FP (immediately containing XP)—are pronounced the same, a situation which I will refer to as 'syncretism' (i.e., between XP and FP).

It is fair to say that traditional models are also able to incorporate the fact that the output of Merge F is pronounced the same as the input to this operation through the use of zero spell out of F (an option systematically explored and exploited in recent work by Richard Kayne). What the standard model would have trouble capturing is if Merge F was reflected simply by changing the previous spell out completely, something which became an option under the phrasal spell out model. So suppose that a language has the following two lexical entries:

(6) $\quad /\beta/ \Leftrightarrow \qquad$ XP $\qquad\qquad\qquad$ (7) $\quad /\gamma/ \Leftrightarrow \qquad$ FP

$$\overset{\frown}{\text{X} \quad \text{Y}} \qquad\qquad\qquad\qquad \overset{\frown}{\text{F} \quad \text{XP}}$$

$$\overset{\frown}{\text{X} \quad \text{Y}}$$

When syntax builds XP, both β and γ are candidates for spell out (they both contain XP). But β wins because it is a better match:

(8)
$$\text{XP} \Rightarrow \beta$$

$$\overset{\frown}{\text{X} \quad \text{Y}}$$

When Merge F applies, spell out targets FP, inserting γ and over-riding β:

(9)
$$\text{FP} \Rightarrow \gamma$$

$$\overset{\frown}{\text{F} \quad \text{XP}}$$

$$\overset{\frown}{\text{X} \quad \text{Y}}$$

The three different ways in which the surface form may reflect the operation Merge F are summarised in (10). In the first line, we have an XP spelled out uniformly as α. The second row gives the three options of how Merging F to XP may be reflected on the surface.

(10) *The three outputs of merge F*

XP	α	α	α
Merge F to XP	$\alpha+\beta$	α	β
	stacking	syncretism	over-ride

An idea explored in Caha (2009) is that all aspects of case paradigms can be reduced to the three scenarios in (10), so that ultimately paradigms become just a by-product of Merge F. Under this view, Merge F creates individual cases by merging together privative case features, such that, for instance, XP corresponds to NOM, FP to ACC etc., with each new case formed by adding a feature to the previous one in a hierarchy of cases.

Additional differences among languages come about as a result of positioning the noun with respect to the markers in ways outlined in Cinque (2005). For instance, the stacking scenario can (among others) yield a prepositional marker β governing the case α, if the complement of F does not move, as in (1). But stacking can also yield a complex case

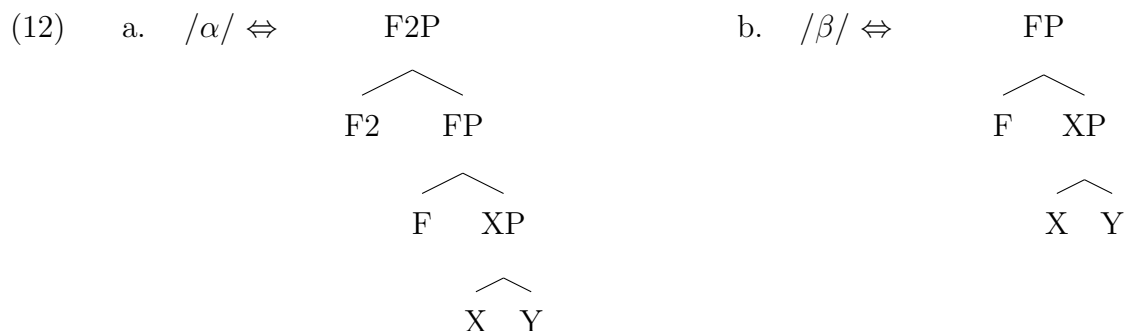suffix (when XP moves across F). See Caha (2009, 2011) for details.

2 *ABA and the Case hierarchy

One of the predictions of the model is related to its inability to generate the so-called *ABA pattern (Bobaljik 2007, Starke 2009). 'ABA' refers to a type of an over-riding pattern, given in (11), where β first over-rides α only to be over-riden by the same α after the next step of Merge. The '*' before the ABA means that this pattern is impossible to derive, and hence that it should be unattested, accidental homophony aside.

(11)   *The *ABA*

XP	α
Merge F to XP $\rightarrow$ FP	β
Merge F2 to FP $\rightarrow$ F2P	α

The reasoning behind the restriction is well known, but for clarity, let me give it here again. In order for α to spell out F2P, as it does in the last row of (11), its entry must be as in (12-a). The entry of β, which is in the second row, spells out FP only, so its entry is as in (12-b). In fact, both β and α match FP, but β wins over α because it is a better match (it has fewer superfluous features). Now when it comes to the first row of the table (11), the spell out of XP, β must win over α again, yielding a full paradigm of the shape α (for F2P), β (for FP), β (for XP). The ABA pattern is underivable.

(12)   a. $/\alpha/ \Leftrightarrow$ F2P

```
         F2P
        /   \
      F2     FP
            /   \
           F     XP
                /   \
               X    Y
```

b. $/\beta/ \Leftrightarrow$ FP

```
         FP
        /   \
       F     XP
            /   \
           X    Y
```

Caha (2009) combined the *ABA prediction with a strongly Cartographic position (Cinque and Rizzi 2008) which admits no variation in the kind and order of Fs that various languages have at their disposal. If that is so, and every language indeed merges the same Fs in exactly the same order, then case paradigms of all languages unfold in a uniform fashion (from XP to FP, then to F2P, and so on), differing only in how Merge F is reflected at each step. When Merge F is reflected by syncretism, then XP can be syncretic with FP, FP with F2P, and so on. Now since XP, FP, F2P etc. correspond to individual cases (understood abstractly through their syntactic/semantic function), the model predicts that all languages will show exactly the same *ABA constraint on case syncretism.

Drawing on previous research (see in particular McCreight and Chvany 1991, Plank 1991, Johnston 1996, Baerman et al. 2005), Caha (2009) proposed the generalisation/hypothesis in (13):[1]

(13)   Universal (Case) Contiguity (Caha 2009):

    a.   Non-accidental case syncretism targets contiguous regions in a sequence invariant across languages.

    b.   The Case sequence: NOM—ACC—GEN—DAT—INS—COM

The left part of the sequence (13-b) is based on the observation by Baerman et al. (2005), who found in their 200 language sample that the syncretism of core cases (NOM, ACC) is common, and that if one of the core cases is syncretic with an oblique, it is (as a strong tendency) the marked core case (i.e., ACC in NOM/ACC languages).[2] This finding was considered by Caha (2009) to be a solid evidence for the claim that there is indeed a cross-linguistically stable order of cases with NOM at one end, followed by ACC and then the obliques.
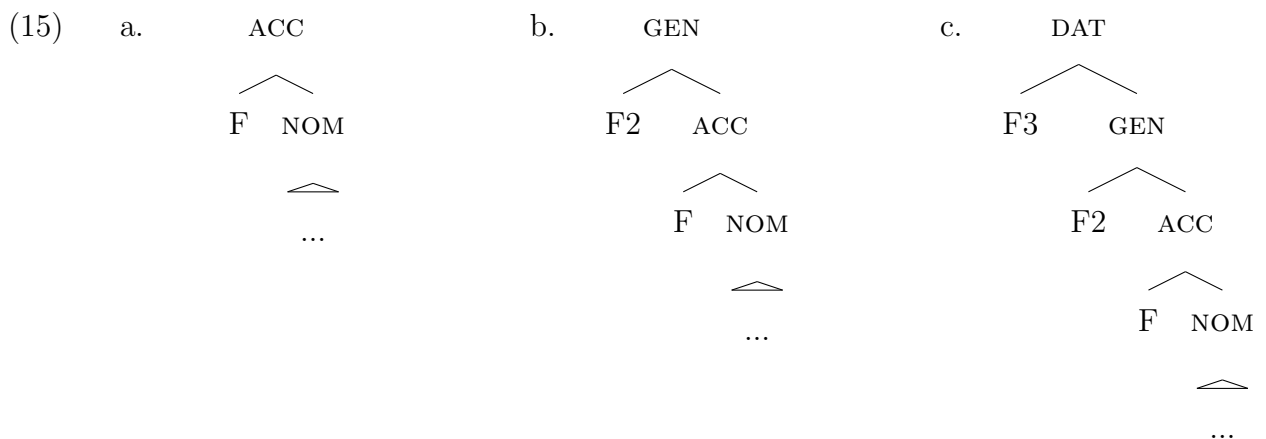
The general consensus in the subsequent literature is that this part of the generalisation should indeed be maintained (Harðarson 2016, Zompì 2017, McFadden 2018, Smith et al. 2018). If correct, then this part of the proposal is a success story for the idea that case paradigms at their core are nothing else but a specific manifestation of Merge F, and moreover, that there is no variation in the inventory and ordering of Fs across various languages.

Another relatively stable part of the hierarchy is the peripheral location of INS and COM, which rarely cause any trouble (though see Zompì 2017 for a potential problem in Latin). The order of the remaining two obliques (GEN and DAT) has, however, proven to be a rather difficult topic (Harðarson 2016, Starke 2017, Van Baal and Don 2018). The reasons that led Caha (2009) to propose the ordering ACC—GEN—DAT in (13-b) is the type of pattern found in Russian (as well as other languages), where the ACC is syncretic with GEN:[3]

(14)   *Syncretism in Russian (McCreight and Chvany 1991)*

	window, SG.	teacher, PL.	both, M.IN.	book, SG.	100
NOM	okn-o	učitel-ja	dv-a	knig-a	st-o
ACC	okn-o	učitel-ej	dv-a	knig-u	st-o
GEN	okn-a	učitel-ej	dv-ux	knig-y	st-a
PREP	okn-e	učitel-jax	dv-ux	knig-e	st-a
DAT	okn-u	učitel-am	dv-um	knig-e	st-a
INS	okn-om	učitel-ami	dv-umja	knig-oj	st-a

Under the hypothesis that syncretism reflects merge F, NOM and ACC must be related by this operation (15-a), because they are syncretic in the paradigm 'window'. Further, since ACC is the same as GEN in the paradigm 'teacher,' GEN must be related to ACC via Merge F (15-b). DAT must be placed outside of this constituent, as shown in (15-c).

(15)   a.   ACC   b.   GEN   c.   DAT
              ⁀   ⁀   ⁀
           F   NOM   F2   ACC   F3   GEN
                  ⁀   ⁀   ⁀
                 ...   F   NOM   F2   ACC
                                                   ⁀   ⁀
                                                  ...   F   NOM
                                                                                     ⁀
                                                                                    ...

I am ignoring here the other cases on purpose, since the focus is on the four core cases depicted in (15-c).

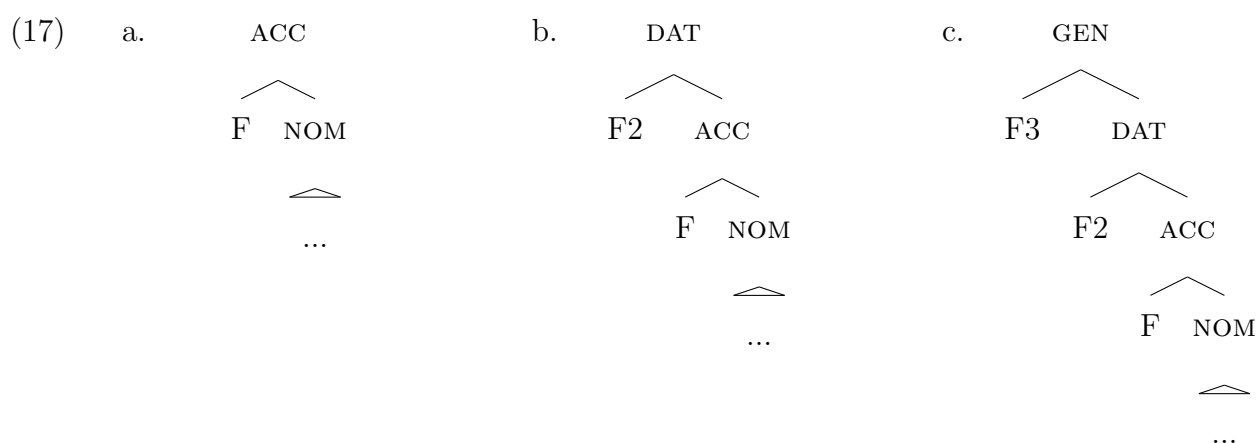# 3   Datives in the way

However, as Harðarson (2016) points out, Icelandic provides similar type of evidence for the contradictory conclusion that DAT must be placed in between the ACC and GEN. The following table shows that when DAT is right after ACC, syncretism respects the *ABA:

(16)   *Syncretism in Icelandic (Harðarson 2016)*

	'arm'	'land'	'queen'	'tongue'
NOM	arm-ur	land-Ø	drottning-Ø	tung-a
ACC	arm-Ø	land-Ø	drottning-u	tung-u
DAT	arm-i	land-i	drottning-u	tung-u
GEN	arm-s	land-s	drottning-ar	tung-u

As in Russian, NOM and ACC must be related by Merge F (17-a), because they are syncretic in the paradigm 'land'. However, since DAT is the same as ACC in the paradigm 'queen,' it is the DAT case which must be related to ACC via Merge F (17-b). GEN must be placed outside of this constituent (17-c).

(17)   a.   ACC   b.   DAT   c.   GEN
                    ╱╲   ╱╲   ╱╲
                  F   NOM   F2   ACC   F3   DAT
                     ╱╲   ╱╲   ╱╲
                     ...   F   NOM   F2   ACC
                                                             ╱╲   ╱╲
                                                             ...   F   NOM
                                                                                                    ╱╲
                                                                                                    ...

Harðarson (2016) mounts supporting evidence for the alternative hierarchy (17-c) (with GEN larger than DAT) by noting that in Faroese, the possessor (i.e., the abstract genitive) requires a preposition coming on top of the dative. Within the confines of Caha's theory,

such examples must be analysed as a scenario where GEN is derived from DAT by Merge F, reflected by stacking. This fact supports (17-c), and seems impossible to reconcile with Caha's (15-c).

(18) Her eru húsini   hjá einum ríkum   manni.
      here are houses.the with a.DAT rich.DAT man.DAT
      'Here is a rich man's house.' (Faroese, Harðarson 2016)

In sum, the facts discussed in this section can still be derived under the assumption that stacking and syncretism reflect Merge F, but only if the order of cases is NOM—ACC—DAT—GEN, which is different from the order NOM—ACC—GEN—DAT required for Russian.

The cross-linguistic prominence of these two types of orders has been reported already in the typological study by Baerman et al. (2005, 51-2). They note the following: "In defining type 2 syncretism [i.e., syncretism between the marked core case and an oblique case], we have spoken simply of syncretism with a peripheral case, but the choice of peripheral case does appear to be limited. With the accusative, we typically find either the genitive (as in the Slavonic languages, Finnish and the Pama-Nyungan language Martuthunira) [...] or the dative (as in Eastern Armenian, Ngiyambaa, and Phalura)..."

As an additional example of the latter type of syncretism, consider the following data from Afar (East Cushitic), taken from the typological study by Van Baal and Don (2018, 11). What is special about them is that they combine the two problematic features of North Germanic. First of all, ACC is syncretic with DAT, and at the same time, the ACC/DAT from is contained inside GEN. The GEN form arises by the affixation of *-y* to *kaa*, accompanied by vowel shortening.

(19)   *Syncretism in Afar (Van Baal and Don 2018)*

	3.SG
NOM	'usuk
ACC	kaa
DAT	kaa
GEN	ka-y

It seems that the only way to maintain the Marge-F approach to case paradigms is to admit that either the inventory or the order of Fs is variable, a conclusion that runs counter to the observation that functional sequences are invariant across languages (Cinque and Rizzi 2008). The goal of this paper is to present a proposal which maintains the invariance of the functional sequence, and to provide an independent supporting evidence in its favour. But before we get to the nature of this proposal, we need to put more data in place.

4 Genitives in the way

Interestingly, the passage from Baerman et al. (2005), quoted above, continues by noting that in Bonan, the ACC can actually show syncretism with both GEN and DAT (cf. Müller 2013). This can be captured by placing the cases in the order NOM—GEN—ACC—DAT (which is yet another order):

(20)   *Bonan declension (Baerman et al. 2005, '51)*

	noun ('foliage')	pronoun ('he')
NOM	labčon-Ø	ndžan-Ø
GEN	labčon-ne	ndžan-ne
ACC	labčon-ne	ndžan-de
DAT	labčon-de	ndžan-de

If this ordering is correct, it has quite serious theoretical consequences. It not only provides additional evidence against the original Caha hierarchy (15-c), it runs counter virtually all recent approaches to the issue, including Harðarson (2016), Zompì (2017), Smith et al. (2018) and McFadden (2018). The problem is that once we place the ACC in between GEN and DAT (to capture both of the Bonan syncretisms), it becomes impossible to place ACC at the same time in between NOM and the oblique cases. It is this aspect of the Bonan ordering which makes it problematic for most approaches, because these have been designed to rule out syncretism between the NOM and the obliques to the exclusion of ACC by placing ACC before the obliques.

At the same time, Bonan is not the most straightforward example of a language that forces one particular order of cases (the order can also be NOM—DAT—ACC—GEN, or one could hypothesise that the order is NOM—ACC with both obliques equally good targets for further syncretism). However, the ordering (20) is independently needed in other languages despite its theoretical "unexpectedness." Consider, for instance, the paradigm (21) from Skolt Saami.[4]

(21)   *Skolt Saami (Feist 2010, 145)*

	1ST.PL	hole, SG.	hole, PL
NOM	mij	kåå'pp	kåå'v
GEN	mij	kåå'v	koo'v-i
ACC	mi'jjid	kåå'v	koo'v-i-d
DAT	mi'jjid	kåpp-a	koo'v-i-d

Like in Bonan, the ACC is syncretic with both GEN ('hole', SG) and DAT ('hole', PL), suggesting it should be located in between these cases. The crucial new aspect of the data is the syncretism between NOM and GEN. This syncretism suggests that the location of GEN between NOM and ACC is not just a by-product of the need to put ACC between GEN and DAT: GEN is a true neighbour of NOM in the Skolt Saami paradigm.

In order to derive the patterns in (21), while maintaining the premise that syncretism reflects Merge F, we must operate with a hierarchy where GEN is derived directly from NOM, see (22-a), because this is the only way in which we can allow for the NOM–GEN syncretism in the paradigm of the first person plural (other plural pronouns have this syncretism as well). In order to derive the remaining two syncretisms, GEN must be followed by ACC (22-b) and DAT (22-c) in that order. In addition, note that the syncretic ACC—DAT form *koo'vid* 'holes' contains the GEN form, strengthening once again the conclusion that ACC must follow GEN.

(22)   a.   GEN
              /\
           F   NOM
                /\
                ...

       b.   ACC
              /\
           F2   GEN
                 /\
                F   NOM
                     /\
                     ...

       c.   DAT
              /\
           F3   ACC
                 /\
                F2   GEN
                      /\
                     F   NOM
                          /\
                          ...

13
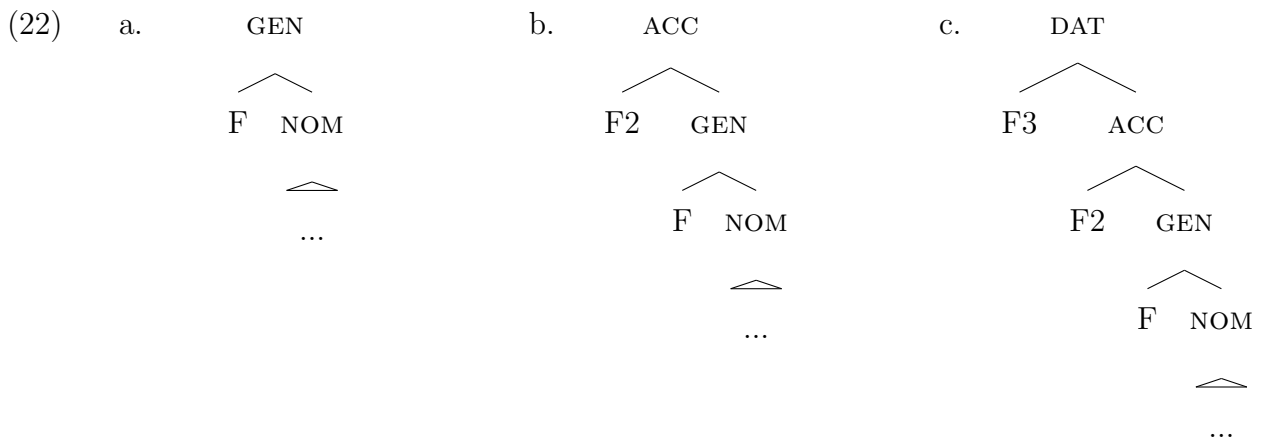
Once again, this issue is not limited to Skolt Saami. For instance, Jayaseelan (2017, 522) proposes the structure (22-c) for Malayalam, due to the observation that there are paradigms in the language, where ACC and DAT contain GEN, similarly to what we find in the paradigm 'hole, PL' in (21).[5]

The problem of genitives intervening between the nominative and the obliques is also noted in Zompì (2017, 85), who bases his conclusions on a 225 language sample (properly containing the sample used in Baerman et al. 2005 plus other languages).[6] Despite the fact that he admits to possess no satisfactory account of the facts, he quite plainly reports that "syncretisms between nominative and genitive 'across' the accusative can sometimes be systematic, and hence [...] the genitive cannot always be structurally bigger than [accusative] across all languages." As one of the examples, he mentions the Cushitic language Bilin:

(23)   *Bilin* (Palmer 1958, 382)

	dog, SG	owner, PL
NOM	gədəŋ	wann-i
GEN	gədəŋ	wann-i
ACC	gədəŋ-sí	wann-ə́s
DAT	gədəŋ-ə́d	wann-əd

A similar observation is made in Van Baal and Don (2018). In their 50 language sample, they found 3 languages with a NOM—GEN syncretism (Kobon, Chamorro, Atayal).[7] Just like for Zompì, this fact is inconvenient for their account, yet faithfully reported. Moreover, in Atayal (24), the NOM/GEN form is the basis for a syncretic ACC—DAT form. Given these facts, I shall take this type of syncretism seriously and set up a theory that can account for it.

(24)   *Atayal* (Van Baal and Don 2018)

	2.SG	1.INCL
NOM	su'	ta'
GEN	su'	ta'
ACC	sunan	itan
DAT	sunan	itan

The following table sums up the three orders of NOM, ACC, GEN and DAT, which have emerged as the most prominent (if not the only existing) patterns of syncretism and containment among the four core cases NOM, ACC, GEN and DAT.

(25)   Data summary

Icelandic	NOM	ACC	DAT	GEN
Russian	NOM	ACC	GEN	DAT
Skolt Saami	NOM	GEN	ACC	DAT

Even though all these facts are apparently deadly for the idea of a cross-linguistically invariant sequence of cases, the overall appropriateness of the Merge-F approach is strengthened: a linear *ABA constraint on syncretism and containment is operative in all the languages discussed. Rather than dismissing the whole enterprise, I shall seek to characterise the underlying feature hierarchy such that when applied to that hierarchy, the approach will deliver the patterns in (25).

One should also keep in mind that it is by far not the case that anything goes. Given the four cases under discussion (NOM, ACC, GEN, DAT), there are 24 different orders (taking into account both syncretism and containment). So far, only three are clearly attested in the data.

In what follows, I will introduce and defend an approach suggested in Starke (2017),

which allows for four options, including the ones in (25), and one extra, which has not been discussed yet. As far as I am aware, this is the most restrictive theory out of those which fulfil the essential requirement of descriptive adequacy. In addition, I will argue that there is independent evidence that Starke's proposal is on the right track.

5 A rigid fseq approach to variable orders: the case for two datives

From the perspective of the Merge-F approach, the problem of variable case orders is reminiscent of the issue explored in the seminal work by Cinque (1999). As is well know, Cinque proposes that adverbs are rigidly ordered and occupy fixed positions in the functional sequence, which is similar to what Caha (2009) later proposed for individual cases. At one point, however, Cinque comes across what "seems to [be] a paradox, since we have postulated both the structure [...] with *twice* higher than *intentionally* and the structure [...] with *twice* lower than *intentionally.* [...] The paradox, however, is not real, as there is evidence that *twice* belongs to a class of adverbs [...] that are systematically ambiguous between two interpretations, each associated with a different position" (p.26).

A solution along similar lines can be contemplated for the current issue as well. Specifically, the contrast between Russian and Icelandic has been analysed in Starke (2017) as a consequence of the fact that the underlying case sequence contains two different structures for the marking of recipients (i.e., two different datives). Each such dative corresponds to a different case structure, occupies a distinct syntactic position and shows different syntactic behaviour. Some languages exhibit both datives and relate them by the so-called dative shift. Such languages then have a case system as shown on the first line of the
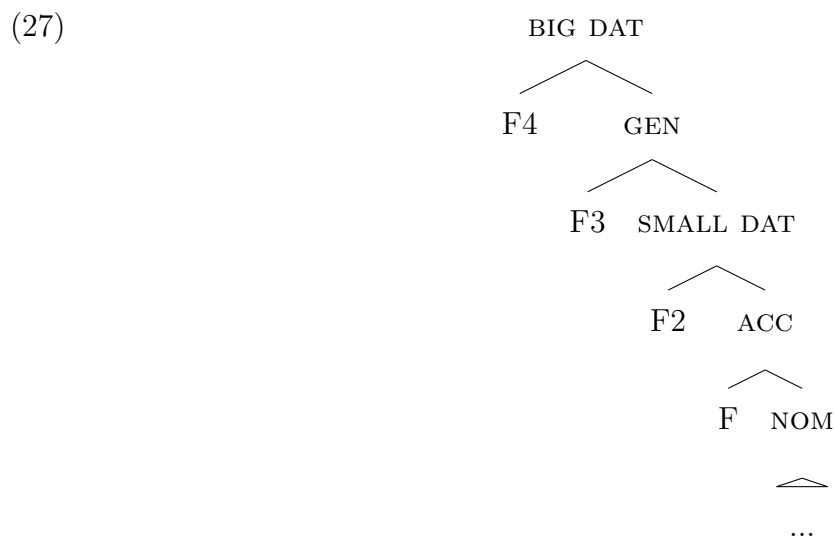
following table (English and Arabic are among these). However, Russian and Icelandic lack the dative-shift alternation with 'give' and exhibit each only a single case, called DAT in the descriptions. But in reality, each of the languages has a different dative, and that is the reason why we are getting contrasting hierarchies.

(26) Variable dative

	NOM	ACC	DAT$_1$	GEN	DAT$_2$
A dative-shift language	NOM	ACC	DAT$_1$	GEN	DAT$_2$
Russian	NOM	ACC		GEN	DAT$_2$
Icelandic	NOM	ACC	DAT$_1$	GEN	

Restating this idea in terms of the Merge F approach, the complete functional sequence contains both of these datives, one bigger than GEN (BIG DAT) and the other smaller than GEN (SMALL DAT), as in (27).

(27)

```
              BIG DAT
              /\
          F4     GEN
                 /\
             F3    SMALL DAT
                    /\
                 F2    ACC
                        /\
                      F   NOM
                          /\
                          ...
```

All languages, including Russian and Icelandic, have the full sequence, but it may happen that the dative shift in a particular language is either obligatory or absent, and one of the datives never gets to surface.

Let me now motivate this proposal step by step. I start by presenting evidence for postulating two distinct datives. This is required for languages that show two different

realisations of the recipient, each associated with a distinct syntactic position and distinct morphological realisation. This is the case in the so-called dative-shift alternation:

(28)   a.   Sally gave a toy to Justine.

           b.   Sally gave Justine a toy.

Following Starke, *to Justine* corresponds to the BIG DAT, and the preposition-less DP to the SMALL DAT. English further shows that the SMALL DAT must be smaller than GEN, because in English (similarly to Icelandic), the SMALL DAT (*Justine/him*) is syncretic with ACC and different from GEN.

That the BIG DAT of the dative-shift alternation should come on the other side of GEN, can be seen nicely in Arabic:

(29)   *Arabic (Ryding 2011, 290-1)*

        a.   a'ṭay-tu l-miftāḥ-a   li-l-bint-i
              I.gave   the-key-ACC to-the-girl-GEN
              'I gave the key to the girl.'

        b.   a'ṭay-tu l-bint-a   l-miftāḥ-a
              I.gave   the-girl-ACC the-key-ACC
              'I gave the girl the key.'

In (29-b) we can see the SMALL DAT version of the recipient, which is identical to ACC (like in English). (29-a) shows that the BIG DAT version is formed by the stacking of *li* on top of GEN. Since the BIG DAT is derived by stacking from GEN, it must contain GEN. In sum, the dative-shift alternation shows that we independently need to acknowledge two different datives (i.e., two different realisations of the recipient), each with a distinct structure, and each in a different syntactic position.

Now consider the fact that neither Icelandic (Thráinsson 2007, 174) nor Russian (Levin 2008) has the dative alternation with the verb *give*. The languages thus allow

only for a single frame, featuring a noun that is marked by a case that both descriptive traditions label as DAT. Which of the datives do the respective languages use? A logical possibility, suggested by Starke, is that Icelandic uses the SMALL DAT (because dative shift is obligatory), while Russian exhibits the BIG DAT (because dative shift is impossible). The consequence is that the Russian dative and the Icelandic dative are (structurally speaking) different cases, and that is why they are each at a different side of the genitive.

An independent support for this conclusion comes from nominalisations and passives. In Russian, when a verb takes a dative argument (30-a), that argument must retain its dative in the nominalisation (30-b).

(30)   *Russian* (Zimmermann 2002, 280)

      a.   izmenit'   žen-e
            betray.INF wife-DAT
            'to betray the wife'

      b.   izmena žen-e
            betrayal wife-DAT
            'the betrayel of the wife'

Similarly, datives generally do not shift to nominatives in the Russian passive (Fowler 1996, 526):

(31)   *Russian* (Fowler 1996, 526)

      a.   Ivanov pomog našemu strudniku
            Ivan   helped our   associate.DAT

      b. *Naš strudnik   byl pomožen Ivanovym
          Our associate.NOM was helped   by.Ivanov

Icelandic contrasts on both counts. When a verb takes a dative argument (32-a), this argument does turn genitive in nominalisation (32-b) (cf. Maling 2001).

(32) *Icelandic* (Harðarson 2016)

    a. Astrid bjargaði skinkunni.
       Astrid rescued ham.DEF.DAT
       'Astrid rescued the ham.'

    b. björgun skinkunnar
       rescue ham.DEF.GEN
       'the rescue of the ham'

When a dative taking verb forms a stative passive, the dative changes to nominative (Svenonius to appear):

(33) Icelandic (Svenonius to appear, ex. 30)

    a. Maria bauð honum.
       Maria invited him.DAT
       'Maria invited him.'

    b. Hann var (ó-)boðinn
       he.NOM was (un-)invited
       'He was (un-)invited.' (adjectival reading)

In traditional terms, this shows that the Icelandic dative counts as a structural case, while the Russian dative behaves like an oblique case. At least since Bayer et al. (2001), it has become standard to explain this difference by reference to the existence of additional structure on top of oblique arguments, which block case shifting. This proposal is much in line with the current approach, where the difference between Russian and Icelandic datives is exactly in that the Russian dative is BIG, with additional structure compared to the SMALL Icelandic DAT.[8]

    To sum up: the solution to the puzzle pointed out by Harðarson (2016) is that there are two distinct datives, one larger than GEN (in Russian), and one smaller than GEN (in Icelandic). The solution is simple in the sense that we independently need to acknowledge that the recipient may be realised in two different syntactic positions, expressed by two

different surface cases, and we independently need to acknowledge variation in the application of the dative shift. A simple combination of these ingredients solves the *ABA puzzle, and correlates neatly with the patterning of the different datives in nominalisation and passive.

It is, however, necessary to add that not every language with a DAT—ACC syncretism will always have a DAT of the Icelandic type. The reason is that the DAT—ACC syncretism is also present in languages of the Skolt Saami type, with the order NOM—GEN—ACC—DAT. In these languages, the available evidence suggests that the DAT is BIG (like in Russian).

One reason for treating it as BIG is that it follows GEN in the case sequence. More importantly, DAT arguments in Saami are not promoted to NOM in passives (as far as available sources allow one to determine).[9] Further, as Nickel (1990, 411-2) explicitly discusses for North Saami, a western neighbour of Skolt Saami, the dative does not shift to the genitive in nominalisations. For instance, a dative selecting verb like *dorvvastit* 'to trust' has a related noun *dorvu* 'trust,' which also marks its complement by dative case.

Therefore, I will adopt for Skolt Saami an analysis according to which the language rather has a special ACC case, which will be called a BIG ACC, following Starke (2017). This case is located between the BIG DAT and GEN. The analysis is depicted on the first line of the following table:

(34) Variable accusative

Skolt Saami	NOM		GEN	BIG ACC	(BIG) DAT
Russian	NOM	SMALL ACC	GEN		(BIG) DAT
A DOM language	NOM	SMALL ACC	GEN	BIG ACC	(BIG) DAT

By having a special type of ACC (on which more follows below), possibilities arise both

for an ACC—DAT syncretism (such that the DAT behaves as a true oblique), and it is also possible to capture the troublesome NOM—GEN syncretism.

At the same time, for Russian (as a representative of the 'well-behaved' languages), we still need the 'old' ACC, which intervenes between NOM and the obliques. Starke calls it the SMALL ACC, and the overall Russian system thus looks as depicted in the second row.

Importantly, as with the two datives, it is independently necessary to acknowledge languages where two direct object cases (i.e., two accusatives) exist at the same time. Specifically, we shall need both of these cases in languages which treat objects differently depending on animacy, definiteness and specificity, a phenomenon known as Differential Object Marking (DOM, Aissen 2003). Languages with such a case marking system are schematically depicted in the last row.

I give a basic overview of the phenomenon in the next section, and then I show what kind of independent evidence there is for the conclusion that ACC in Skolt Saami is a BIG ACC of the type found in DOM systems.

6 Differential object marking

The general motivation behind the 'two-accusatives' approach is to capture the behaviour of direct objects in Differential Object Marking systems (DOM, Aissen 2003). The term refers to a differential treatment of direct objects depending on notions such as definiteness, specificity and animacy. An example of DOM is shown in (35).
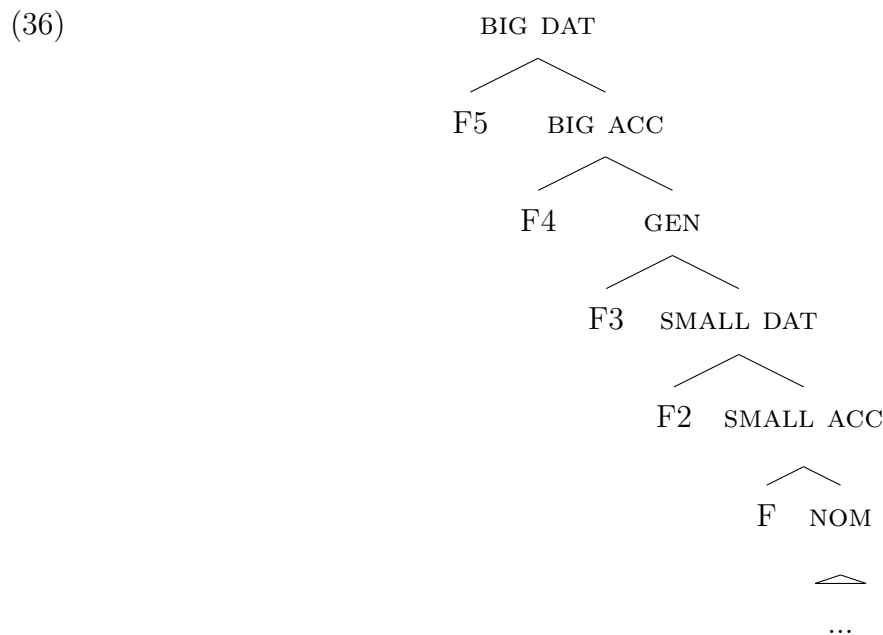
(35)   *Turkish (Aissen 2003)*

    a.   Ali bir kitab-ɨ   aldɨ.
          Ali one book-B.ACC bought

'Ali bought the book.'

b.   Ali bir kitap-Ø   aldɨ.
    Ali one book-S.ACC bought
    'Ali bought some book.'

Starke's idea concerning (35) goes as follows: since a single noun phrase ('a book') can be marked in two different ways, this suggests that there are actually two different cases for the direct object. The one which has an overt marker in Turkish is called BIG ACC by Starke. The zero-marked accusative is called SMALL ACC.

Starke proposes that the two accusatives occupy the following positions in the functional sequence:

(36)

```
                        BIG DAT
                       /      \
                   F5     BIG ACC
                         /       \
                     F4       GEN
                             /     \
                         F3    SMALL DAT
                              /        \
                          F2     SMALL ACC
                                /         \
                             F      NOM
                                    /\
                                    ...
```

The SMALL ACC corresponds to Caha's original ACC, which comes right after NOM. The reason for this is that in Turkish, it is in fact identical to NOM. By identifying the SMALL ACC with the original ACC, we also keep in the functional sequence the vanilla flavour accusative, whose presence in the majority of languages yields the strong tendency to disallow the NOM—GEN syncretism.

Let me now turn to BIG ACC. In Turkish, this case has a dedicated marker and shows

no syncretism. This means that it has to correspond to a separate case (BIG ACC). Its placement next to BIG DAT is motivated by the fact that in a number of languages (see, e.g., Bossong 1985, Glushan 2010, Manzini and Franco 2016) it is identical to the marking of recipients that show the hallmarks of BIG DAT. As an example, consider the following Spanish example from Starke (2017). The BIG ACC is given in (37-a), and its exponent *a* is identical to the dative marker.

(37)   *Spanish (Starke 2017)*

    a.   María quiere **a**   un abogado [+anim, +specific]
        Mary wants PREP a   lawyer
        'Mary wants a (specific) lawyer.'

    b.   María quiere un abogado [+anim, -specific]
        Mary wants a   lawyer
        'Mary wants a lawyer (any lawyer).'

In Spanish, there are reasons to think that the dative *a* phrase corresponds to the *to* phrase in English, hence to BIG DAT, see Kayne (1984), Demonte (1995) for a discussion. If that is so, this identity confirms that BIG DAT must be one of the neighbours of the BIG ACC.

The second neighbour can be determined by looking at the third attested pattern of DOM (i.e., in addition to Turkish and Spanish), where BIG ACC is syncretic with GEN and different from DAT (see Glushan 2010 based on Bossong 1985). An example from Ossetic is in (38). (38-a,b) show the basic DOM pattern with SMALL ACC and BIG ACC respectively. (38-c) shows that BIG ACC is the same as GEN and distinct from DAT:

(38)   *Ossetic (Belyaev 2010)*

    a.   miron fəš   argăfšt-a
        Miron ram.S.ACC slaughter-PAST
        'Miron has slaughtered a ram.'

b. lăpːu   čəžǯ-ə   fedt-a
   boy-NOM girl-B.ACC see-PAST
   'They boy saw the girl.'

c. mă-mad-ə   mad-ăn
   my-mother-GEN mother-DAT
   'to my mother's mother'

The data is summarised in the following table, where the differentially marked object (BIG ACC) is shaded, and any potential syncretism is highlighted by extending the shading to the relevant cell:

(39)   *The syncretisms of the* BIG ACC

	GEN	BIG ACC	BIG DAT
Spanish	A	B	B
Turkish	A	B	C
Ossetic	A	A	B

Considered together, the facts require that BIG ACC must be located between GEN and BIG DAT.

7   Back to Saami

Let me now turn our attention back to languages which lack differential object marking in the sense that they lack an alternation between two different object marking strategies. In these languages, as Aissen (2003, 450) proposes, it must be the case that objects are either all marked by BIG ACC, or none are.

Taking into consideration the fact that also datives may correspond to BIG or SMALL, the system thus allows for four logically possible types of single-marking languages, as depicted in the table (40). In the first two lines, I have placed Icelandic and Russian as

representatives of languages with SMALL ACC and a single DAT.[10]

(40)   *Two types of languages without alternations*

a.	SMALL ACC	SMALL DAT	Icelandic
b.	SMALL ACC	BIG DAT	Russian
c.	BIG ACC	SMALL DAT	?
d.	BIG ACC	BIG DAT	?

As the question marks in the table indicate, the combinatoric possibilities of the system open the space for the existence of two more language types. Should such languages be found, this would clearly strengthen the case for Starke's (2017) proposal.

It turns out that the option depicted in (40-d) (with both cases BIG) is the one we need in order to explain the facts in Skolt Saami. As we have seen, Skolt Saami requires the existence of the surface Case sequence in (41-a), with the surprising placement of GEN next to NOM. Under the current proposal, this sequence corresponds to an expected incarnation of the universal hierarchy with both cases big, as in (41-b).

(41)   a.   NOM—GEN—ACC—DAT—etc.

       b.   NOM—~~S-ACC~~—~~S-DAT~~—GEN—BIG-ACC—BIG-DAT—etc.

Interestingly, there is independent evidence for analysing the Skolt Saami paradigm along these lines. The evidence comes from comparing Skolt Saami to other Saami languages. I start with South Saami (Kroik 2016), which is the only Saami language that actually has DOM. When plural and indefinite, the marking of the object is identical to the nominative case, and referred to as such in the descriptive tradition, see (42-a). When definite, it is marked by the ending *-ide*, referred to as the ACC, see (42-b).

(42)   *South Saami (Siegel 2017, attributed to Bergsland)*

a. Laara treavk-ah   dorjeme
    Lars   ski-PL.NOM make.PTCP.PERF
    'Lars has made skis.'

b. Dejtie   treavk-ide vööjnim
    dem.PL.ACC ski-PL.ACC see.PRT.1SG
    'I saw those skis.'

This shows that what the Saami grammatical tradition refers to as ACC in South Saami must in fact be BIG ACC. Not unexpectedly, the position of this case in the paradigm must be after the GEN, as the declension in (43) shows.

(43)   *South Saami declension (Ylikoski 2011)*

	door, SG	door, PL
NOM	okse	oksh
GEN	oksen	oksi
ACC	oksem	oksi-de
DAT	oksese	oksi-de
INE	oksesne	oksi-ne
ELA	okseste	oksi-jste
COM	oksine	oksi-gujmie

The following two facts are relevant for the ordering of the cases. (i) In the plural, there is a syncretism between the ACC and the DAT, which is captured by placing the ACC after GEN in the paradigm. On its own, this fact could also be handled by placing the DAT before GEN (just like in Icelandic). However, what cannot be captured that way is that the ACC.PL is clearly derived from the GEN.PL by stacking. This confirms that what is called the accusative in South Saami is in fact BIG ACC, as one would expect given its DOM status.

However, DOM is rare among the Saami languages, in fact it is "a feature which is

restricted to South Saami only" (Siegel 2017). For instance, the closely related Ume and

Pite Saami show no DOM. In these languages, the single direct object case always carries

the same marker (labelled ACC) even when inanimate, indefinite and/or non-specific.

(44-a,b) show this for Ume and Pite Saami respectively.

(44)   *Indefinite/non-specific objects in Ume and Pite Saami*

    a.   månne Arrviehaureje vuolgav biebmo-ide oasstiet
           I   Arvidsjaur.ILL drive.1SG food-PL.ACC buy.INF
           'I am driving to Arvidsjaur to buy food.' (Siegel 2017)

    b.   färt bäjjve mij bårojmä gulli-jd
           every day we ate fish-ACC.PL
           'Every day, we ate fish.' (Wilbur 2014, 140)

Importantly, the marker we find on the objects is obviously a cognate of the South Saami

BIG ACC marker. I will take this as an indication that the single ACC case in Pite and

Ume Saami is the BIG ACC (an option allowed also in Aissen 2003). The BIG ACC status

of the Ume/Pite ACC is confirmed by the ordering of the paradigms, given in (45). For

reasons of space, I only include here NOM, GEN, ACC and DAT.

(45)   *Ume (Siegel 2017) and Pite Saami (Wilbur 2014) declension*

	Ume Saami		Pite Saami	
	SG	PL	reindeer, SG.	reindeer, PL
NOM		-h	båts-oj	buhts-u
GEN	-n	-ij	buhts-u	buhts-u-j
ACC	-v/-b	-ij-de	buhts-u-v	buhts-u-j-d
DAT	-je	-ij-de	buhts-u-j	buhts-u-j-d-a

Note that the GEN is placed after the NOM in the tables, with ACC after them, an ordering

also used in the traditional descriptions of Saami languages. The important points are the

following. (i) In both languages, the ACC.PL contains the GEN.PL. (ii) In Pite Saami, this containment carries over to the singular. This requires an ordering with GEN before ACC, which is impossible to derive under the Caha hierarchy (13-b), or any similar proposal to date, except as a reduced language-specific instantiation of the sequence proposed in Starke (2017).

In addition, note that in the Pite Saami plural, the ordering NOM—GEN—ACC—DAT is reflected by a steady increase in the complexity of marking, such that DAT contains ACC, ACC contains GEN and GEN NOM. If such a stacking is to be interpreted as a reflex of Merge F, then Merge F must derive DAT from ACC, ACC from GEN and GEN from NOM. This is precisely the ordering which is expected in languages with BIG-ACC and BIG-DAT under Starke's proposal.

The crucial point in the discussion up to now was to show that there is independent evidence for the Saami ACC and DAT being both BIG. This general setup of the Saami case system paves the way for the existence of NOM-GEN syncretism, since these two cases end up adjacent in a language where SMALL ACC and SMALL DAT are absent from the paradigm. And this is exactly the option which we have found in Skolt Saami, repeated below.

(46)   *Skolt Saami (Feist 2010, 145)*

	1ST.PL	hole, SG.	hole, PL
NOM	mij	kåå'pp	kåå'v
GEN	mij	kåå'v	koo'v-i
ACC	mi'jjid	kåå'v	koo'v-i-d
DAT	mi'jjid	kåpp-a	koo'v-i-d

There are indications that other instances of NOM—GEN syncretism can be explained

along similar lines. Recall, for instance, the Bilin case discussed in Zompì (2017):

(47)   *Bilin* (Palmer 1958, 382)

	dog, SG	owner, PL
NOM	gədəŋ	wann-i
GEN	gədəŋ	wann-i
ACC	gədəŋ-sí	wann-ə́s
DAT	gədəŋ-ə́d	wann-əd

Crucially, as Appleyard (2007, 487) notes, there are reasons to think that what the tradition labels as ACC is in fact a BIG ACC: "Nouns in Bilin inflect for seven case forms: nominative (or better, absolute), accusative (or definite object), genitive, dative, comitative, locative, and ablative. These are merely conventional labels [...] For instance, [...t]he absolute case marks both subject and indefinite object." The quote leaves little doubt that Bilin has DOM, and that ACC is the name given to BIG ACC, which then predictably fails to occupy the SMALL ACC position between NOM and GEN.

8   The road ahead

At this point, we have constructed a Merge-F approach to syncretism, which is abreast with descriptive adequacy. We have reached this goal without sacrificing either its theoretical reductionism, or the idea that the ordering of features in the functional sequence is rigid. All that was needed to achieve this feat was to enrich Caha's original Case sequence with the distinction between BIG and SMALL ACC/DAT, as proposed in Starke (2017). The reason why exactly this particular solution is attractive is first of all that the need to distinguish two recipient/object cases is needed on independent grounds. More-

over, it is possible to find independent evidence that the relevant syncretism patterns do correlate with the expectations based on the independently postulated distinctions between BIG and SMALL cases. At the same time, alternative accounts currently lack a pigeon hole into which the NOM—GEN syncretism could fit (Harðarson 2016, Zompì 2017, 2018, McFadden 2018, Smith et al. 2018).

In principle, many alternative approaches to these issues can be considered. For instance, one could try to capture all the various orders by proposing the existence of multiple genitives, as in the following table:

(48)   A logical option: variable nature of the genitive

Icelandic	NOM		ACC		DAT	GEN$_3$
Russian	NOM		ACC	GEN$_2$	DAT	
Skolt Saami	NOM	GEN$_1$	ACC		DAT	

An approach along these lines has been suggested in Caha (2009) or Van Baal and Don (2018), who recognise GEN$_2$ (a true adverbal GEN) and GEN$_3$ (an augmented NP internal GEN). However, as far as the available evidence suggests, blaming the genitive is not the right way to go (see also Zompì 2017, 20-1). Rather, it is the special nature of the Icelandic 'structural' dative and the marked nature of the Saami/Bilin ACC what is the relevant factor that decides what the overall structure of the paradigm is going to be. This is not to say that there cannot be more than a single genitive, but the evidence coming from the languages discussed here does not bring this out in any obvious way.

Nevertheless, a number of open ends remain, as always. For instance, according to Caha's (2009) theory, the four cases discussed here should be followed by INS and COM in that order. This leads to an expectation that in a language of the Icelandic type, with the order NOM—ACC—DAT—GEN, we should find a GEN—INS syncretism. I have not

been able to verify whether this is the case or not, and the issue is thus left open for future research.

Another issue on which more research is pending is the question of whether there are languages with SMALL DAT and BIG ACC, which would then exhibit the surface order NOM—DAT—GEN—ACC, recall the fourth type of language in (40). As far as I am aware, there are no such languages, in which case the approach taken here slightly over-generates, nothing else said. The easiest way of excluding this option (while still ruling in all the three remaining ones) would be to probe deeper into the interaction of object shift and DOM. In particular, if the presence of object shift (yielding the SMALL DAT) would always entails the existence of unmarked (shifted) objects, then this unattested type of language would be ruled out effectively by a hypothesis about how syntax works. I leave all of this for future research.

9   Conclusion

Paradigms, as Plank (1991) puts it, are the oldest grammatical texts, with the first exemplars attested on Babylonian clay tablets going back to 1600 BC. In this article, I tried to explain what is the main driving force that makes one keep looking at the same type of object three and a half thousand years later. The reason is that for the first time in the history of the field, we are in a position where paradigms stop being simple lists (whether arbitrary or ordered), and become a product of the recursive application of the fundamental operation Merge F.

The fact that the addition of the BIG/SMALL distinction on top of the Case hierarchy (13-b) allows for a neat approach to Saami, is from this larger perspective a relatively insignificant result, but at the same time important, since without the BIG/SMALL dis-

tinction, the facts would be hard to unify with the world view just described.

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Notes

[1] On purpose, the statement leaves out spatial cases which rise complications that need a separate treatment (see Caha 2017).

[2] Baerman et al. (2005, p.56): "most instances of case syncretism can be described in terms of the behaviour of the marked core cases (accusative and ergative), which are either identical to the unmarked core case (type 1), or to one of the peripheral cases (type 2)."

[3] As a general strategy here and also in what follows, I only give paradigm fragments that illustrate efficiently and non-redundantly the paradigm structure of a given language. It goes without saying that as far as I am aware, there are no additional syncretisms of the relevant cases beyond what is displayed, and to the extent that there are, they have been argued to be accidental in the references given.

[4] I am labelling the case which is traditionally called *illative* as a *dative* in the table, since the case has a recipient function in a double object construction:

(49) jeann uudi   leeibid   kooum   paarnze.
      mother give.PAST bread.ACC three.ILL child.ILL
      'The mother gave the bread to three children.' (Skolt Saami, Feist 2010, 224)

The ability to express the recipient in a double object construction is a defining characteristic of a dative, so I follow this labelling for consistency with other languages. For a discussion of the DAT-ILL syncretism in the Merge-F framework, see Caha (2017).

[5] There is a manuscript version of the material going back to Jayaseelan (2009).

[6] Zompì (2017, 82) gives the following list, which corresponds to a subset of the 225 languages which actually show syncretism. Indo-European: Classical Armenian, Modern Eastern Armenian, Czech, Old and Modern English, French, Old Frisian, German, Gothic, Classical and Modern Greek, Hindi, Icelandic, Irish, Kashmiri, Latin, Latvian, Lithuanian, Old Norse, Polish, Russian, Sanskrit, Serbian, Slovene, Spanish, Ukrainian; non-Indo-European: Classical Arabic, Araona, Bao'an, Basque, Bilin, Boumaa Fijian, Burushaski, Chukchi, Comanche, Diyari, Finnish, Georgian, West Greenlandic, Harar Oromo, Ingush, Koryak, Krongo, Lak, Lezgian, Mangarayi, Martuthunira, Murle, Nenets, Nez Perce, Ngiyambaa, Paumari, Pitjantjatjara, Rongpo, Northern Saami, Somali, Suena, Telugu, Tsakhur, Wambaya, Warao, Yaqui, Yidiny, Yukaghir, Yupik, Yurok.

[7] The sample contains the following languages: Nama, Chamorro, Paiwan, Atayal, Tsou, Lao, Kharia,

Hmong Njua, Tidore, Lavukaleve, Bukiyip, Alamblak, Kobon, Tauya, Koromfe, Kisi, Bambara, Katcha, Lezgian, Bororo, Tiriyo, Koasati, Oklahoma Cherokee, Wari', Hup(da), Teribe, Kiowa, Imbabura Quechua, Lahu, Mandarin Chinese, Lango, Ma'di, Dyirbal, Tiwi, Gooniyandi, Hausa, Tamasheq, Afar, Nepali, Albanian, Sarcee, Japanese, Evenki, Central Alaskan Yupik, Chukchi, Saramaccan, Koya, Ket, Votic, Georgian.

[8]For a general account of case alternations in the Merge F model, see Caha (2009, 2010) and Starke (2014).

[9]I judge so based on the fact that no grammar or article I came across mentions this option, though it is nowhere explicitly denied. Timothy Feist (the author of Feist 2010) tells me (p.c., May 2018) that for Skolt Saami, it is difficult to come up with examples of dative (illative) objects to begin with, so it is difficult to see what happens to such arguments in passives.

[10]It is possible that Russian has two different ACC cases, a big one for masculine animates, and a small one for the rest. However, the facts are also consistent with a single ACC approach, which I adopt here, as discussed in the main text. I will not dwell on this issue since the main point of this article lies elsewhere.