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RESEARCH

# Ergative is not inherent: Evidence from *ABA in suppletion and syncretism

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I show that case syncretism obeys the same *ABA restriction previously observed in case-sensitive suppletion: no Vocabulary-Insertion rule can apply to both an inherent case and an unmarked core case (nominative/absolutive) without also applying to another core case (accusative/ergative). The case hierarchy that these effects motivate is one where the ergative is consistently put in the same box as the accusative, separately from all inherent cases. This offers a new kind of argument in favor of dependent-case theories, whereby accusative and ergative are both structurally assigned to nominals that stand in an asymmetric c-command relation to another as-yet-caseless nominal nearby.

**Keywords:** *ABA; syncretism; suppletion; ergativity; dependent case; Impoverishment

## 1 Introduction

Recent years have witnessed intensive research on so-called *ABA patterns—cross-linguistic patterns whereby, given a particular arrangement of forms in a certain type of paradigm, the first and third form may share some morphological property "A" only if the second form also shares property "A" (see Bobaljik 2012 and much related work). One such pattern has recently been discussed by Smith et al. (2018), who propose (1) as a universal *ABA restriction on the distribution of root allomorphs in case-sensitive suppletion.

(1) An unmarked core case (nominative or absolutive) and an inherent case (dative, locative, etc.) cannot share the same root allomorph to the exclusion of a marked core case (accusative or ergative).

Following Bobaljik (2012), whose logic I review in detail in Section 2, Smith et al. (2018) interpret (1) as evidence for a universal containment hierarchy like (2), such that the representation of every inherent case must contain that of a marked core case, which latter must in turn contain the representation of an unmarked core case.

(2) NOM/ABS ⊂ ACC/ERG ⊂ INHERENT

Given some ancillary assumptions, a simple approach to syncretism—in terms of missing dedicated exponents "filled in for" by their closest match—predicts that the containment hierarchy in (2) should then constrain possible case syncretisms, too. This is because, absent a dedicated affix for an inherent case, (2) will always ensure that the accusative/ergative affix be a closer match for that inherent case than the unmarked-case affix would be. In this paper, I argue that this prediction is indeed borne out, and I defend the ensuing generalization in (3)—with important antecedents in Baerman, Brown & Corbett (2005) and Caha (2009)—against a sample of 102 case-inflecting languages.

(3) A non-accidental syncretism cannot cover an unmarked core case (nominative or absolutive) and an inherent case (dative, locative, etc.) to the exclusion of a marked core case (accusative or ergative).

Having established that case-conditioned suppletion and case syncretism really obey the same *ABA restrictions, I move on to use those restrictions as a probe into the structure and nature of case categories. I show, more specifically, that *ABA consistently partitions cases into classes, and that those classes are rigidly ordered relative to each other, but are internally unordered or not fully ordered. In particular, ergative and accusative make up an internally-unordered class of their own, and so do inherent cases, while the genitive appears not to be constrained by the hierarchy at all, syncretizing freely in defiance of any universal restriction. Such a partition can be made sense of under an approach to case syntax that puts ergative and accusative in the same natural class to the exclusion of inherent cases, while casting the genitive on a different plane. These desiderata, I shall argue, are only met by Marantz's (1991) and Baker's (2015) theory of dependent case (cf. also Yip, Maling & Jackendoff 1987), which thereby receives a new kind of empirical support.

Finally, I conclude my discussion by examining how the core results in the paper may be derived from the relevant containment hierarchy under different views of the syntax–morphology interface than the one, simply based on underspecified exponents, which I assume in Sections 2–3. I focus, in particular, on variants of Distributed Morphology that countenance feature-deleting operations between Narrow Syntax and exponence, and on overspecification-based alternatives falling under the rubric of Nanosyntax. The key empirical results will turn out to be in principle compatible with versions of both frameworks, albeit with different analytical tradeoffs.

## 2 *ABA in case-conditioned allomorphy

Smith et al. (2018) carry out a wide cross-linguistic survey of case-sensitive suppletion in pronouns.[1] For comparative purposes, they restrict their focus to a simplified typology of cases, comprised of the core structural cases and "a representative oblique case, typically the dative" (Smith et al. 2018: 11). Importantly, they set genitives aside, as their sources do not consistently distinguish them from possessive pronouns (which they assume are not part of the relevant paradigm). Smith et al. (2018) examine 179 languages, 41 of which have case-conditioned suppletion and more than two cases (genitives aside). This sample supports the generalizations in (4) and (5) regarding nominative–accusative and ergative–absolutive systems, respectively.

(4) Smith et al.'s (2018) *generalization about accusative systems:*
If an accusative suppletes with respect to the corresponding nominative, so do all oblique cases (other than the genitive).

(5) Smith et al.'s (2018) *generalization about ergative systems:*
If an ergative suppletes with respect to the corresponding absolutive, so do all oblique cases (other than the genitive).

Given the sequences NOM ≺ ACC ≺ OBL and ABS ≺ ERG ≺ OBL, we may thus find AAA (no suppletion), AAB (only the core structural cases sharing the same stem), and ABB (only accusative/ergative and oblique sharing the same stem), but we never find ABA (cf. Tables 1–2).[2]

[1] They also investigate suppletion conditioned by number, which will not concern us here.
[2] Smith et al. (2018) report that ABC patterns (with a different suppletive base for each case category) are also very rare, Albanian and Khinalug being the only two potential examples in their sample. I have no insight to contribute regarding the reasons for such cross-linguistic rarity.

McFadden (2018) provides further evidence for this pattern in a survey of case-sensitive stem allomorphy in lexical nouns. In that work, "[t]he term 'stem' is used to contrast with root suppletion (as found in *go/went*), and to indicate that the allomorphy involves part of the base to which case attaches rather than the case suffix itself" (McFadden 2018: 4). Of interest, in other words, are alternations like Tamil *maram* ~ *maratt-* or Latin *iter* ~ *itiner-* in Table 3. McFadden analyzes such alternations as case-conditioned allomorphy of the stem's last formative, which he identifies with the categorizing head *n*. In the Tamil paradigm in Table 3, for example, McFadden assumes that *n* is spelled out as *-am* in the nominative but as *-att-* in all other cases. Table 3 shows that ABB and AAB patterns are again possible in this domain. By contrast, ABA patterns are unattested.[3]

Following Bobaljik's (2012) analysis of *ABA in comparatives and superlatives, all these *ABA generalizations can be taken as evidence for successive containment relations between the case categories involved in each:

**Table 1:** AAA, ABB, and AAB with accusatives (Schwyzer 1939: 602; Smith et al. 2018: 25, 63).

| Ancient Greek, 1PL | | Brahui, 1SG.F | | German, 3SG.F | |
|---|---|---|---|---|---|
| NOM | hēmêis | NOM | ī | NOM | sie |
| ACC | hēmâs | ACC | kane | ACC | sie |
| DAT | hēmîn | DAT | kanki | DAT | ihr |

**Table 2:** AAA, ABB, and AAB with ergatives (Smith et al. 2018: 16, 26, 64, 66).

| Lezgian, 1SG | | Georgian, 3SG | | Wardaman, 3SG | |
|---|---|---|---|---|---|
| ABS | zun | ABS | is | ABS | narnaj |
| ERG | za | ERG | man | ERG | narnaj-(j)i |
| DAT | zaz | DAT | mas(a) | DAT | gunga |

**Table 3:** ABB and AAB in case-based stem allomorphy (Schwyzer 1939: 584; Leumann 1977: 359; McFadden 2018: 2).

| Tamil, 'tree' | | Latin, 'journey' | | Ancient Greek, 'big', SG.M | |
|---|---|---|---|---|---|
| NOM | mar-am | NOM | iter | NOM | méga-s |
| ACC | mar-att-ai | ACC | iter | ACC | méga-n |
| DAT | mar-att-ukku | DAT | itiner-ī | DAT | megálo-:i |

[3] McFadden (2018) focuses on nominative–accusative languages. As for ergative–absolutive languages, my own casual survey of Nakh-Dagestanian yields examples of ABB patterns, expected on Smith et al.'s (2018) hierarchy, but no examples of ABA, as predicted.

— Lezgian ABS *χwa* 'son' ~ ERG *χts-i* ~ DAT *χts-i-z* (Haspelmath 1993: 80, 339, 374);
— Archi ABS *ƛonnol* 'woman' ~ ERG *ƛanna* ~ DAT *ƛanna-s* (Chumakina, Bond & Corbett 2016: 26);
— Avar ABS *bosén* 'nest' ~ ERG *bos-á-ts:a* ~ DAT *bos-á-d-e* (Charachidze 1981: 43)

This particular survey also yielded no examples of AAB, which I will hope constitutes an accidental gap.

(6) a. NOM ⊂ ACC ⊂ OBL
b. ABS ⊂ ERG ⊂ OBL

One possible way to implement this, entertained besides other alternatives by Smith et al. (2018), is in terms of superset–subset relations between complex feature bundles, as illustrated in (7).[4]

(7) a. [ NOM ]; [ NOM ACC ]; [ NOM ACC OBL ]

b. [ ABS ]; [ ABS ERG ]; [ ABS ERG OBL ]

These representations straightforwardly permit us to derive *ABA within a framework like Distributed Morphology, in which syntactic nodes undergo late insertion, proceeding from the most deeply embedded node outwards (Halle & Marantz 1993; Bobaljik 2000). In such a framework, suppletion is captured by positing multiple rules of exponence for the same terminal node, and which rule applies to which occurrence of that node is determined by principles (8)–(9).

(8) *Underspecification* (cf. Halle 1997: 428)
A rule of exponence R can apply to a terminal node N only if all the morphosyntactic features realized by R are present in N, and all the contextual specifications of R are true of N.

(9) *Pāṇinian ordering*, or *Elsewhere Principle* (cf. Kiparsky 1973: 94)
If rules of exponence $R_1$ and $R_2$ may each apply to terminal node N as per (8), and the contexts for application of $R_2$ are a subset of the contexts for application of $R_1$, then $R_1$ applies and $R_2$ does not.

Assuming this background, together with the containment relations in (6)–(7), we can show what blocks ABA patterns by trying to derive one—for example, pseudo-Georgian ABS *is* ~ ERG *ma-n* ~ DAT ***is-s*(*a*).

(10) a. 3SG → *ma-* / _ ERG
b. 3SG → *is*

In order to surface only in the marked ergative case, the allomorph *ma-* has to be explicitly restricted to that context in its rule of exponence (10a). In DM, *ma-* is thus not eligible for realizing 3SG in the absolutive, since that context does not contain an ERG feature or head, and hence does not match *ma-*'s structural description. By contrast, underspecified *is* does qualify as a competitor for realizing 3SG both in the absolutive and in the ergative, but is not selected for the latter because the Elsewhere Principle favors the more specific allomorph *ma-* there. For the dative, however, we can only do one of two things: either say no more about it or stipulate a third exponence rule specifically for it. In the

[4] The major alternative, couched in terms of constituency relations between syntactic trees, will be discussed in detail in Section 7.2.

latter scenario, we end up with a disuppletive pattern ABC.[5] In the former, assuming no exponence rules other than (10), the two allomorphs *is* and *ma-* should then compete to realize the pronoun in the dative, under the assumption that the dative contains ERG; but then the Elsewhere Principle should let the more specific *ma-* win again, resulting in ABB. The unattested ABA pattern is thus excluded in principle.

## 3 Containment and *ABA in syncretism

The assumption of a case containment hierarchy also has the potential to interact in interesting ways with a restrictive approach to syncretism, as was noticed, in partly different theoretical contexts, by Johnston (1996) and Caha (2009). Let us assume, more specifically, that syncretism may only result from the absence of a dedicated rule of exponence for a particular feature bundle—a gap which the vocabulary-insertion algorithm "fills in" by resorting to the closest underspecified exponent, as per the Elsewhere Principle (9). If this approach is on the right track, and if the case containment hierarchies in (6)–(7) are real, then we predict that the same *ABA pattern as we have witnessed for case-conditioned suppletion should also hold of case syncretism. In other words, just as a nominative and an oblique cannot share the same *stem* exponent to the exclusion of a suppletive accusative/ergative, so a nominative and an oblique should never share the same *case* exponent to the exclusion of a non-syncretic accusative/ergative.

To see why this should be so, we just have to replicate the reasoning from Section 2, and try to derive the supposedly impossible ABA syncretism by leaving DAT without a dedicated exponent.

(11)

| Case | Features | Exponent |
|---|---|---|
| NOM | [α] | /-A/ |
| ACC | [α, β] | /-B/ |
| DAT | [α, β, γ] | ? |

Given that both NOM and ACC are properly contained in DAT, they will both be eligible candidates for realizing DAT according to Underspecification (8). However, since NOM is itself properly contained in ACC, ACC will always be a better match for DAT as per the Elsewhere Principle (9), thus necessarily resulting in ABB.

We thus derive the new generalization in (12)—with major precursors in Baerman, Brown & Corbett (2005) and Caha (2009), both to be discussed shortly.

(12) A non-accidental syncretism cannot cover both the nominative/absolutive and an oblique case (other than the genitive) without also covering another core structural case (accusative or ergative).

As the alert reader may have noticed, the generalization in (12) specifically refers to *non-accidental* syncretisms—a term which I have not introduced yet. This qualification alludes to the fact that the reasoning schematized in (11) only rules out ABA patterns in genuinely morphosyntactic syncretism, i.e. syncretism which results from the application of *the same rule of exponence* to partially overlapping feature bundles. By contrast, the reasoning in (11) does not entail any analogous *ABA restrictions on other conceivable kinds of syn-

[5] A very rare pattern, for poorly understood reasons; cf. fn. 2.
A reviewer also reminds me, in this connection, that the availability of ABC "could in principle be exploited to characterize a surface ABA pattern as an underlying ABC […] in which the [dative] and default allomorphs are (accidentally) homophonous" (Bobaljik 2015: 5, fn4). Bobaljik (2012: 35) plugs this loophole by assuming that "[l]earners avoid positing a contextual allomorph of a morpheme μ that is homophonous with the default exponent of μ."

cretism, whereby distinct morphosyntactic representations just accidentally happen to be realized alike.

Indeed, typologists such as Baerman, Brown & Corbett (2005) already recognized something akin to (12) as a cross-linguistic tendency, but refrained from treating it as a genuine language universal precisely because, short of a criterion for distinguishing such accidental homophonies from non-accidental syncretisms, they had no way to accommodate a number of reported surface counterexamples. This problem can be at least partly overcome, however, by the distinctive criteria proposed to this end by Johnston (1996) and Caha (2009), which I summarize in (13).

(13) Accidental homophony may be due to either *phonological conflation* or *accidental lexical homonymy* (cf. Johnston 1996; Caha 2009).
  a. We have *phonological conflation* when phonological processes map distinct underlying exponents onto the same surface form.
  b. We have *accidental lexical homonymy* when two rules of exponence accidentally realize distinct feature bundles by means of the same exponent. In such cases, the homonymy must be restricted to a single syncretic exponent.

The rationale for (13b) deserves special emphasis. In Johnston's (1996: 15) words, "[i]f we find that a suffix *x* in a certain context realizes properties *a* and *b*, it is entirely possible that the homonymy is accidental and of no more account than the two senses of *bank* in English. But if we find that in another context a suffix *y* also realizes properties *a* and *b*, then it becomes more likely that the homonymy is [non-accidental]." In line with this reasoning, (13b) rules out accidental homonymy whenever a syncretism is replicated by two or more phonologically different exponents across different inflectional classes.

Crucially, once we adopt the distinctive criteria in (13), we can then show that all the surface counterexamples to the *ABA generalization in (12) are actually accidental, and hence that (12) is, as stated, a solid contender for the status of an exceptionless universal.

Such a line of empirical defense, and indeed the generalization in (12) itself, have important antecedents in the work of Caha (2009), who also deployed the distinctive criteria in (13) to strengthen apparent cross-linguistic tendencies into putatively exceptionless restrictions on syncretisms. As it turns out, however, the empirical generalization he proposed, reported here in (14), is similar but not identical to the one in (12).

(14) Caha's (2009: 10, 130) *Universal Case Contiguity*
Non-accidental case syncretisms can only target contiguous regions of a linear case sequence, invariant across languages:
NOM ⊂ ACC ⊂ $\text{LOC}_1$ ⊂ GEN ⊂ $\text{LOC}_2$ ⊂ DAT ⊂ $\text{LOC}_3$ ⊂ INSTR

Specifically, Caha's (2009) case containment hierarchy in (14) differs in two key respects from Smith et al.'s (2018) one in (6) (repeated here as (15)).

(15) NOM/ABS ⊂ ACC/ERG ⊂ OBL

On the one hand, Caha's hierarchy is richer (and hence more strongly predictive) than (15) in that it imposes a more articulated ordering on the various obliques—a move for which "the pronominal suppletion patterns provide no compelling evidence" (Bobaljik 2015: 9, fn8). On the other hand, Caha's hierarchy is also less rich (and hence less predictive) than (15), in that it does not reference either ergative or absolutive, focusing on nominative–accusative systems instead (cf. Caha 2009: 10, fn5).

In the next sections, I will argue that Caha's (2009) case hierarchy in (14) is actually inferior to the coarser hierarchy (15) on both counts, and that (15), originally proposed on the basis of restrictions on suppletion, is also the best fit for modeling universal restrictions on syncretism. As a first step toward this conclusion, I will show in Section 4 that the coarser hierarchy correctly constrains syncretisms not only in accusative systems but also in ergative ones, and that, in these latter, the ergative really mirrors the accusative's behavior as the middle member in the *ABA pattern. In Section 5, I will then move on to argue that the case containment hierarchy is not subject to any linearity constraint. Rather, *ABA restrictions on both syncretism and suppletion consistently partition cases into classes, which are rigidly ordered relative to each other, but internally unordered or not fully ordered. A strict universal ordering of obliques as in (14) will thus be shown to undergenerate.

## 4 Testing the generalization

To test the empirical adequacy of the generalization in (12) (repeated in (16)) with respect to both accusative and ergative systems, I have put together the language samples used in four cross-linguistic studies of case syncretism: Plank (1991), Baerman, Brown & Corbett (2005), the Surrey Syncretism Database (Baerman, Brown & Corbett 2002)[6] and Caha (2009: Part III). This has produced a total of 102 case-inflecting languages, 66 of which display partial case syncretism. A separate Appendix lists all of these languages, along with their respective syncretisms.

(16) A non-accidental syncretism cannot cover both the nominative/absolutive and an oblique case (other than the genitive) without also covering another core structural case (accusative or ergative).

Within the sample I have collected, all the syncretisms that are clearly non-accidental in light of the criteria in (13) turn out to conform to (16). Examples from accusative and ergative systems are in Tables 4–6.

**Table 4:** Fragments of Icelandic paradigms (Einarsson 1949: 38, 41, 44, 68).

| | 'child', SG | 'tongue', PL | NAME | 1PL |
|---|---|---|---|---|
| NOM | barn | tung-ur | Hild-ur | við |
| ACC | barn | tung-ur | Hild-i | okk-ur |
| DAT | barn-i | tung-um | Hild-i | okk-ur |

**Table 5:** Fragments of Basque paradigms (Hualde 2003: 173, 179).

| | 'place', PL.DEF | 'place', PL.PROX | 2PL |
|---|---|---|---|
| ABS | leku-ak | leku-ok | zu-ek |
| ERG | leku-ak | leku-ok | zu-ek |
| DAT | leku-ei | leku-oi | zu-ei |

**Table 6:** Fragments of Lezgian paradigms (Haspelmath 1993: 80, 184).

| | 'mother' | 'salt' | 1SG |
|---|---|---|---|
| ABS | didé | q'el | z-un |
| ERG | didé-di | q'el-é | z-a |
| INESS | didé-da | q'el-é | z-a |

[6] http://www.smg.surrey.ac.uk/syncretism.

The survey has also turned up at most 8 surface counterexamples, of which:

- three (Czech, Lithuanian, Slovenian) are phonological conflations;
- three (Georgian, Latin, Polish) are isolated lexical homonymies;
- two (Ancient Greek and Kashmiri) seem to result from unwarranted admixture of distinct *ABA-compliant dialects.

I briefly discuss each of these cases in turn in Subsections 4.1–4.3.

### *4.1 Phonological conflations: Lithuanian, Czech, Slovenian*

An easy phonological case to begin with is that of Lithuanian, whose nominative singular and instrumental singular are sometimes both realized as *-a*, as in *rankà* 'hand' in Table 7. The nominative's and the instrumental's *-a* endings, however, are demonstrably different in their accentual properties (cf. Ambrazas 1997: 78–81). This underlying contrast is often neutralized by interactions with the stem's phonological properties, but does make a difference in the surface form in a few contexts—namely, when the stem is, in Ambrazas's (1997) terms, simultaneously "weak" and "acuted" (as in *galvà* 'head' in Table 7), or when the stem's stressed syllable and the affix are separated by at least one syllable (as in *gilumà* 'depth' in Table 7). In such contexts, main stress will ultimately fall on the affix in the nominative, but on the stem in the instrumental, thus revealing the underlying contrast and the phonological nature of the homophony.

As for the ABA homophonies in Czech and Slovenian, an account in this same vein has already been proposed by Caha (2009: 243, 249ff) whose arguments I briefly review here. In Czech, NOM.PL and INSTR.PL are sometimes both realized as *-i*, as in the plural of *muž* 'man' in Table 8. As Caha shows, however, this homophony only surfaces when the affix *-i* is preceded by a consonant that resists palatalized ~ non-palatalized alternations—e.g. the inherently palatalized *ž* of *muž*. In contrast, whenever the stem-final consonant can take part in the alternation, it will show up as palatalized in the nominative but as non-palatalized in the instrumental, as e.g. in the plural of *hoch* 'boy' in Table 8. The natural conclusion to draw from this is that the high front affixes of NOM.PL and INSTR.PL are underlyingly different in that only the former triggers palatalization—a difference which stem-final consonants like *ž* just happen to neutralize on the surface.

Finally, a borderline case between phonological conflation and lexical homonymy is the syncretism between NOM.PL and INSTR.PL in Slovenian. On the one hand, in the varieties of Slovenian that preserve a tonal system, NOM.PL and INSTR.PL can be segmentally

**Table 7:** Fragments of Lithuanian paradigms (Ambrazas 1997: 80–81).

| | 'hand', SG | 'head', SG | 'depth', SG |
|---|---|---|---|
| NOM | rankà | galvà | gilumà |
| ACC | rañką | gálvą | gílumą |
| INSTR | rankà | gálva | gíluma |

**Table 8:** Fragments of Czech paradigms (Caha 2009: 249–250).

| | 'man', PL | | 'boy', PL | |
|---|---|---|---|---|
| NOM | muž-i | [mʊʒɪ] | hoš-i | [hoʃɪ] |
| ACC | muž-e | [mʊʒe] | hoch-y | [hoxɪ] |
| INSTR | muž-i | [mʊʒɪ] | hoch-y | [hoxɪ] |

homophonous but different in tone, as e.g. acuted NOM.PL *kováči* 'blacksmiths' vs. circumflexed INSTR.PL *kovâči* in Table 9 (Caha 2009: 243, crediting Peter Jurgec). "This is an indication that despite the segmental homophony, the nominative and instrumental are different" (Caha 2009: 243). On the other hand, in the toneless varieties of the language, such an argument is not readily replicable, and an explanation in terms of accidental lexical homonymy might thus be needed. This hypothesis would in any case be compatible with the operative criteria for accidental homonymy which I introduced in (13b), given that the relevant syncretism only involves the single exponent *-i*.

### *4.2 Accidental lexical homonymies: Latin, Polish, Georgian*

A clearer case for accidental homonymy can be made for Latin's NOM–INSTR syncretism, which is restricted to a single word form in the whole language—*quī*, serving both as the masculine NOM.SG and (alongside the more common M/N *quō* ∼ F *quā*) as the gender-syncretic INSTR.SG of the relative pronoun (Table 10).[7] No other exponent replicates the homonymy—even within the paradigm of the relative pronoun itself (e.g. *quō* can only be instrumental).

The NOM–GEN–DAT–LOC syncretism of Polish is also isolated. As noted by Johnston (1996: 61), it only involves the affix *-i* and is restricted to derivative female nouns whose stem ends in [ɲ] (e.g. *gospody*[ɲ]*i* in Table 11).

Finally, Georgian adjectives with consonant stems show the kind of reduced declension exemplified by *dzveli* 'old' in Table 12, with an unexpected syncretism of absolutive, genitive, and instrumental. Though not as morphophonologically

**Table 9:** Fragments of Slovenian paradigms (Derbyshire 1993: 26; Caha 2009: 243, crediting Peter Jurgec; Maša Močnik, p.c.).

| | **'traveler', PL** | **'blacksmith', PL** |
|---|---|---|
| NOM | pótnik-i | kováč-i |
| ACC | pótnik-e | kováč-e |
| INSTR | pótnik-i | kovâč-i |

**Table 10:** Partial paradigm of Latin's relative pronoun (Weiss 2009: 350–1).

| | **M.SG** | **F.SG** | **N.SG** | **M.PL** | **F.PL** | **N.PL** |
|---|---|---|---|---|---|---|
| NOM | quī | quae | quod | quī | quae | quae |
| ACC | quem | quam | quod | quōs | quās | quae |
| INSTR | quō/quī | quā/quī | quō/quī | quibus | quibus | quibus |

**Table 11:** Fragments of three Polish paradigms (Swan 2002: 50–55).

| | **'shirt', SG** | **'thread', SG** | **'hostess', SG** |
|---|---|---|---|
| NOM | koszul-a | nić | gospodyn-i |
| ACC | koszul-ę | nić | gospodyn-ię |
| GEN | koszul-i | nic-i | gospodyn-i |
| DAT | koszul-i | nic-i | gospodyn-i |
| LOC | koszul-i | nic-i | gospodyn-i |

[7] Thanks to Ludovico Pontiggia for bringing this surface counterexample to my attention.

circumscribed as those from Polish and Latin, this pattern is also restricted to a single exponent, and is not replicated in the more reduced declension known as the “Old Georgian plural”, where genitive and instrumental syncretize, as expected, with ergative. Pending counterevidence, I will thus regard this syncretism, too, as an accidental homonymy.

### 4.3 Admixture of dialects: Ancient Greek and Kashmiri

The only two worrisome counterexamples are both arguably the result of unwarranted admixture of dialects. In Ancient Greek, the first declension’s long endings for NOM.SG and DAT.SG in the classical period were respectively *ā/ē* and *āi/ēi*, with further accentual differences between the two cases in oxytone paradigms (cf. the accents in the paradigm of *timḗ* in Table 13). Both the segmental and the accentual differences faded away during the Hellenistic period, but around the same time the final *-n* of the accusative began to fade away too, thus renormalizing a potential ABA into AAA: NOM *khóra* ~ ACC *khóra* ~ DAT *khóra* (cf. Horrocks 2010: 116).

Something similar might be true of Kashmiri, which Baerman, Brown & Corbett (2002)[8] report to have two instances of absolutive–ablative syncretism.

If these data were correct, there would indeed be good reasons to worry, given that the unexpected homophony would straddle two distinct exponents: *-ɨ* and -∅. The data, however, turn out to be dubious. Baerman, Brown & Corbett’s (2002) report on Kashmiri reports that the ‘goose’-type paradigms “are cited by Grierson (1911) and by Zaxarin and

**Table 12:** Fragments of Georgian paradigms (Hewitt 1995: 34, 45).

| | ‘old’ | ‘man’, SG | ‘man’, PL (“Old Georgian”) |
|---|---|---|---|
| ABS | dzvel-i | k’ac-i | k’ac-n-i |
| ERG | dzvel-ma | k’ac-ma | k’ac-t |
| DAT | dzvel | k’ac-s | k’ac-t |
| GEN | dzvel-i | k’ac-is | k’ac-t |
| INSTR | dzvel-i | k’ac-it | k’ac-t |

**Table 13:** Partial paradigms in Ancient Greek (Kühner & Blass 1890: 381–385).

| | ‘land’, SG | ‘honor’, PL | ‘table’, SG | ‘young man’, SG |
|---|---|---|---|---|
| NOM | khṓrā | timḗ | trápeza | neaníās |
| ACC | khṓrān | timḗn | trápezan | neaníān |
| DAT | khṓrā(i) | timȇ(i) | trapézē(i) | neaníā(i) |

**Table 14:** Kashmiri paradigms (Kachru 1969: 112–114; Baerman, Brown & Corbett 2002).

| | ‘hand’, SG | ‘hand’, PL | ‘child’, SG | ‘goose’, SG |
|---|---|---|---|---|
| ABS | ath-ɨ | ath-ɨ | gobur | ənz |
| ERG | ath-an | ath-av | gobr-an | ənz-ɪn |
| ABL | ath-ɨ | ath-av | gobr-ɨ | ənz |
| DAT | ath-as | ath-an | gobr-as | ənz-ɪs |

[8] www.smg.surrey.ac.uk/syncretism/reports/Kashmiri.pdf.

Edel'man (1971), but not in any other source." In particular, there is no mention of them in the grammars of Kachru (1969), Bhat (1987), or Wali & Koul (1996), all native speakers of the language. Moreover, Omkar N. Koul (p.c.) informs me that the only possible ablative he knows of for *ənz* 'goose' is the non-syncretic *ənz-ɨ*. In view of these problems, I will thus put aside the problematic forms as probably resulting from admixture of different dialects, while acknowledging that I cannot definitively dismiss them at this time. As for the ABS–INSTR syncretism instantiated by *-ɨ*, its accidental nature emerges from the comparison with the paradigms of 'hands' and 'child' in Table 14: *-ɨ* can realize ABS without realizing ABL and vice versa, and the homonymy only arises when the two exponence patterns accidentally intersect.

## 5 The case hierarchy is not linear

Having established that the same *ABA pattern observed for case-sensitive suppletion also restricts possible syncretisms—in both accusative and ergative systems—we can now ask further questions about the structure and significance of the case hierarchies that both these phenomena point to.

One such question, for example, concerns the possibility of devising a unique case sequence valid for all languages, as was first suggested by Caha (2009) (cf. Section 3 above). An immediate issue for any such attempt is how to unify the nominative–accusative and absolutive–ergative variants of the hierarchy, both repeated in (17).

(17) a. NOM ⊂ ACC ⊂ OBL
b. ABS ⊂ ERG ⊂ OBL

As it happens, this unification is required not just by usual considerations of simplicity and generality, but also by the empirical demands coming from tripartite languages, where the transitive subject (A), the direct object (O), and the intransitive subject (S) are each marked with a different case. If we want our account to also apply to such languages, we need a single hierarchy featuring both ergative and accusative at once.

However, neither of the linear arrangements in (18)—with UNMARKED as a tentative umbrella term for nominative and absolutive—is apparently compatible with the data provided by tripartite languages.

(18) a. UNMARKED ⊂ ACCUSATIVE ⊂ ERGATIVE ⊂ OBLIQUE
b. UNMARKED ⊂ ERGATIVE ⊂ ACCUSATIVE ⊂ OBLIQUE

On the one hand, (18a) finds an ABA counterexample in the suppletion patterns of Jingulu, wherein nominative and ergative share the same stem to the exclusion of a uniquely suppletive accusative (Pensalfini 2003: 149–152). On the other hand, the alternative arrangement (18b) is also contradicted by an Australian suppletion pattern—this time the one of Alyawarra, in which the nominative patterns with the accusative to the exclusion of a suppletive ergative (Yallop 1977: 94).[9] As it turns out, no linear arrangement based on (17) can be consistent with both Jingulu and Alyawarra at once.

The data in Tables 15–16 are not easily amenable to alternative accounts. First of all, we cannot invoke any such thing as "accidental suppletion" as we may want to do with homophony. Secondly, even if we could, each of the divergent patterns would turn out to be replicated by multiple stems in its respective language. Thirdly, the same problem arises with syncretism: in some tripartite languages, nominative and ergative syncretize to the exclusion of the accusative, while, in others, nominative and accusative syncretize

[9] Thanks to James Gray for indirectly pointing me to this Alyawarra counterexample.

to the exclusion of the ergative. Both of these patterns are far too widespread among and beyond Australian languages to be plausibly reducible to accidental homonymy (cf. Tables 17–18), and can even coexist within one and the same language, as in Djapu (cf. Table 19) and many other similar systems discussed by Blake (1977), Goddard (1982), and most recently Legate (2008; 2014).[10]

Even in these languages, however, it's not that just anything goes. In fact, all the tripartite languages I know of still conform to the *ABA generalization in (12), as none of their syncretisms covers a nominative and an oblique without also covering either an ergative or an accusative. What these data suggest, then, is just that our unified case hierarchy

**Table 15:** Suppletion in Jingulu (Pensalfini 2003: 149–152).

| | **1SG** | **2SG** |
|---|---|---|
| NOM | ngaya | nyama |
| ACC | ngarr- | nga(a)nk- |
| ERG | ngaya-rni | nyama-rni |

**Table 16:** Suppletion in Alyawarra (Yallop 1977: 94).

| | **1SG** | **2SG** |
|---|---|---|
| NOM | yinga | nga |
| ACC | yinganha | nginha |
| ERG | atha | unta |

**Table 17:** Syncretism in Jingulu (Pensalfini 2003: 46, 66, 83, 149ff).

| | **2PL** | **'child'** |
|---|---|---|
| NOM | kurrawala | wawa |
| ACC | kurrak- | wawa |
| ERG | kurrawala-rni | wawa-rni |

**Table 18:** Syncretism in Dhargari (Austin 1981).

| | **1DU.EXCL** | **2SG** |
|---|---|---|
| NOM | ngaliyi | nhurra |
| ACC | ngaliyi-nha | nhurra-nha |
| ERG | ngaliyi-ru | nhurra |

**Table 19:** Coexisting NOM-ACC and NOM-ERG syncretisms in Djapu (Morphy 1983: 51, 84, 110, 127, 162).

| | **'person' [HUMAN]** | **'horn' [NON-HUMAN]** | **2SG [PRONOUN]** |
|---|---|---|---|
| NOM | yolŋu | dhandurruŋ | nhe |
| ACC | yolŋu-y | dhandurruŋ | nhuna |
| ERG | yolŋu-n | dhandurruŋ-dhu | nhe |

[10] These sources also establish that such systems should be treated in terms of coexisting patterns of syncretism rather than syntactic system splits, on the strength of several arguments from cross-declensional case concord. See Legate (2014) for recent and comprehensive argumentation.

should allow for some flexibility—namely, that it should be stated in terms of internally unordered (or at least not fully ordered) case-classes.

(19) a. UNMARKED ⊂ ACCUSATIVE/ERGATIVE ⊂ OBLIQUE
b. Every oblique case (other than the genitive) must contain a marked core structural case. Every marked core structural case must contain an unmarked core structural case.

Analogous flexibility is also apparently required within the oblique class, *pace* Caha (2009). This is particularly evident in ergative and tripartite systems, given the wide variety of ergative–oblique syncretisms attested cross-linguistically: ERG–GEN and ERG–INSTR (the commonest two, respectively illustrated by Araona in Table 20 and Margany in Table 21), but also ergative–inessive in Lezgian (cf. Table 6) and still other locative patterns listed by Palancar (2009: 569). It turns out, in other words, that there is no one "lowest oblique" that the ergative universally favors when syncretizing "upwards." Analogous variability, though perhaps less wide-ranging, is also observed for the accusative, which can syncretize with dative to the exclusion of instrumental in Classical Armenian, and with instrumental to the exclusion of dative in Latin (see Table 22). In conclusion, obliques too must be left (at least partially) unordered with respect to each other.

One last aspect of flexibility in the hierarchy specifically concerns the genitive, which seems to enjoy the highest degree of freedom among all cases, sometimes defying any generalization even within a single language family. Take for example the Germanic

**Table 20:** Syncretism in Araona (Baerman, Brown & Corbett 2002).

| | **1SG** | **1INCL.DU** | **'woman'** |
|---|---|---|---|
| ABS | ema | tseda | mama |
| ERG | ya(ma) | tse-a-da | mama-ja |
| GEN | qui(m)a | tse-a-da | mama-ja |

**Table 21:** Fragments of Margany paradigms (Breen 1981: 302ff).

| | **'stone'** | **'grass'** | **'boomerang'** | **2SG** |
|---|---|---|---|---|
| NOM | bari | ud̪un | waŋal | inda |
| ACC | bari | ud̪un | waŋal | inan̪a |
| ERG | bari-ŋgu | ud̪un-du | waŋal-u | inda |
| INSTR | bari-ŋgu | ud̪un-du | waŋal-u | inundu |
| DAT | bari-gu | ud̪un-gu | waŋal-gu | inungu |

**Table 22:** Syncretisms with ACC in Latin and Armenian (Zompì 2017: 24–27).

| | **Latin [archaic forms in italics]** | | **Classical Armenian** | | |
|---|---|---|---|---|---|
| | **'horn'** | **1SG** | **'nation', PL** | **3SG** | **2PL** |
| ACC | cornū | mē/mēmē [*mēd*] | azgs | sa | jez |
| GEN | cornūs | meī [*mīs*] | azgac' | sora | jer |
| LOC | _ | _ | azgs | sma | jez |
| DAT | cornū | mihi/mī | azgac' | sma | jez |
| INSTR | cornū | mē/mēmē [*mēd*] | azgawk' | sovaw | jewk' |

suppletion patterns in Table 23, in which the genitive displays ambiguous unmarked-like and oblique-like behavior. Once again, the same pattern (or, in this case, lack thereof) is also replicated in the domain of syncretism, as exemplified by Latin and Bilin in Tables 24–25.[11]

Evidently, the genitive's variable behavior poses an especially hard challenge for the linear case hierarchy originally proposed by Caha (2009), repeated here in (20) (= (14) above).

(20) Caha's (2009: 10, 130) *Universal Case Contiguity*
Non-accidental case syncretisms can only target contiguous regions of a linear case sequence, invariant across languages:
NOM ⊂ ACC ⊂ $LOC_1$ ⊂ GEN ⊂ $LOC_2$ ⊂ DAT ⊂ $LOC_3$ ⊂ INSTR

Confronted with these challenges, Starke (2017) and Caha (2018b) attempt to salvage the contiguity hypothesis in (20) by enriching the case hierarchy further—specifically, by sandwiching the genitive between two ACC–DAT subsequences.

(21) *The enriched case sequence, disregarding locatives* (Starke 2017)
NOM – SMALL ACC – SMALL DAT – GEN – BIG ACC – BIG DAT – …

**Table 23:** Non-linearizable suppletion patterns involving genitive (Einarsson 1949: 68; Johnston 1996: 90).

| | **German** | **Icelandic** | **Icelandic** |
|---|---|---|---|
| | **3F.SG** | **1PL** | **1PL.HON** |
| NOM | sie | við | vér |
| ACC | sie | okkur | oss |
| GEN | ihrer | okkar | vor |
| DAT | ihr | okkur | oss |

**Table 24:** Singular paradigms in Latin (Weiss 2009: 215, 229, 253).

| | **'wolf'** | **'woman'** | **'thing'** |
|---|---|---|---|
| NOM | lupus | fēmina | rēs |
| ACC | lupum | fēminam | rem |
| GEN | lupī | fēminae | rei |
| DAT | lupō | fēminae | rei |

**Table 25:** Two paradigms in Bilin (Palmer 1958: 382).

| | **'dog', SG** | **'owner', PL** |
|---|---|---|
| NOM | gədəŋ | wanni |
| ACC | gədəŋ-sí | wannə́s |
| GEN | gədəŋ | wanni |
| DAT | gədəŋ-ə́d | wannəd |

[11] See also Harðarson (2016), Zompì (2017: 83ff), Baal & Don (2018: 12ff), and Caha (2018b) for further examples of genitive syncretisms that are potentially problematic for Caha's (2009) original proposals.

Such a proposal, however, both under- and overgenerates. On the one hand, it still does not explain how in Icelandic (a language which, according to Starke's and Caha's diagnostics, should only allow SMALL ACC and SMALL DAT to surface) the genitive can pattern with the nominative in suppletion (cf. honorific 1PL *vér* in Table 23). On the other hand, if a language could just use SMALL DAT and BIG ACC on its surface, it could then display the syncretism pattern NOM = DAT ≠ ACC, which we just never seem to find.

For these reasons, and in view of the broader pattern of obliques and marked core cases, I will thus reject any strict linearity constraint on the case hierarchy.[12] I will instead defend a formulation in terms of three distinct case classes, and assume that the genitive is not a member of any of them.

(22) No rule of exponence can apply to both an UNMARKED CORE case (nominative or absolutive) and an OBLIQUE (dative, instrumental, locative, etc.) without also applying to a MARKED CORE case (accusative or ergative).

## 6 Ergative is not inherent

Having established the case classes in (22) on morphological grounds, we may now take one more step and bring them to bear on the choice between competing theories of case syntax, asking which theory can best characterize such classes in natural terms.

A first challenge in this respect is how to fit into one class the various cases I have referred to as "obliques other than genitive," such as dative, locative, and instrumental. The theoretical notion that best serves this purpose is that of "inherent cases." These are cases assigned under strict locality with a selecting head, either as an instance of arbitrary selection or in response to the semantics of θ-role assignment. This fits the bill for the obliques we are interested in, but correctly excludes the genitive, which typically is not selected for, but rather serves as a default adnominal case.

A problem, however, might arise from the ergative, which should also be included in the inherent class according to some prominent accounts (see *i.a.* Woolford 1997; 2006; Laka 2006; Legate 2008; 2012; Mahajan 2012). On this view, ergative is inherently assigned by little $v^0$ to its specifier, along with an external or "initiator" θ-role such as agent, experiencer, or instrument. A major attraction of this account is that it allows us to reconcile ergative–absolutive alignments with the Minimalist view of case in terms of feature checking, i.e. either strictly local selection or (potentially long-distance) Agree. Assuming that nominals which have already received case in the bottom-up derivation are no longer interveners for further Agree dependencies (Chomsky's 2000 Activity Condition), we may then understand how $T^0$ can skip the ergative subject in Figure 1, and assign absolutive to the direct object.

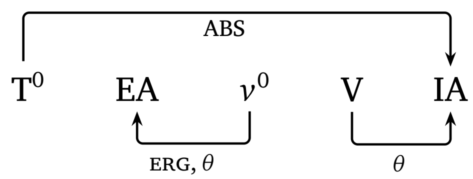



**Figure 1:** Ergative as inherent (adapted from Baker & Bobaljik 2017: 114).

[12] *Contra* Caha (2009), as well as McCreight & Chvany (1991), Johnston (1996), and Harðarson (2016).

This account has recently faced several challenges, suggesting that the ergative does not behave *syntactically* as an inherent case. Inherent cases, for example, are generally exempt from structural case alternations, as is shown by the unalternating "quirky" datives in Icelandic raising to object (23). Ergative arguments, in contrast, frequently take part in such alternations, with no apparent change in θ-roles, as shown by Řezáč, Albizu & Etxepare (2014: 1280) for Basque raising to object (24).[13]

(23) *Icelandic* (Þráinsson 2007: 182–183)

a. **þeim** hefur leihðst.
   3PL.DAT has bored
   'They have been bored.'

b. við teljum **þeim** hafa leiðst.
   1PL.NOM believe.1PL 3PL.DAT have.INF bored
   'We believe them to have been bored.'

(24) *Basque* (Řezáč, Albizu & Etxepare 2014: 1280)

a. **katu-ek** sagu-ak harrapatu dituzte-la ikusi dut.
   cat-DEF.PL.ERG mouse-DEF.PL.ABS caught AUX.3PL > 3PL-that seen AUX.1SGERG
   'I saw that the cats caught the mice.'

b. **katu-ak** sagu-ak harrapa-tzen ikusii ditut.
   cat-DEF.PL.ABS mouse-DEF.PL.ABS catch-ing seen AUX.1SG > 3PL
   'I saw the cats catch the mice.'

In accord with these findings, the current results from *ABA suggest that the ergative also does not behave *morphologically* like inherent cases. As we saw in Sections 2–3, inherent cases universally obey two *ABA generalizations: they can never be syncretic with a nominative across a non-syncretic accusative, and they can never share the same stem as the nominative if the accusative has a suppletive stem of its own. If the ergative were to be classified as an inherent case, it would be the only such case to violate these generalizations, as can be illustrated with Dhargari for syncretism (Table 18, repeated here as 26) and with Jingulu for suppletion (Table 15, repeated here as 27).

**Table 26:** Syncretism in Dhargari (Austin 1981: 215).

| | 1DU.EXCL | 2SG |
|---|---|---|
| NOM | ngaliyi | nhurra |
| ACC | ngaliyi-nha | nhurra-nha |
| ERG | ngaliyi-ru | nhurra |

**Table 27:** Suppletion in Jingulu (Pensalfini 2003: 149–152).

| | 1SG | 2SG |
|---|---|---|
| NOM | ngaya | nyama |
| ACC | ngarr- | nga(a)nk- |
| ERG | ngaya-rni | nyama-rni |

[13] See Baker & Bobaljik (2017) for discussion of more languages with similar patterns.

How then can we set the ergative apart from the (other) inherent cases, and put it in the same box as the accusative? According to an ergative-as-inherent theory, there is only one thing that accusative and ergative have in common: they are both assigned by little $v^0$, albeit through different assignment modes. We may then attempt to cash this out by reformulating the case hierarchy as in (25).[14]

(25) a. {NOM, ABS}: cases assigned by $T^0$
b. {ACC, ERG}: cases assigned by $v^0$
c. {DAT, INSTR, LOC…}: inherent cases assigned by anything but $v^0$ (adpositions, applicative heads, lexical roots…)

Clearly, however, (25c) still would not be a natural class. Why should all inherent cases pattern alike, irrespective of their assigning head, except when that head is $v^0$? And conversely, why should the structural–inherent distinction matter in setting aside the genitive from other obliques but not the accusative from the ergative?

A far neater account is offered by the theory of dependent case developed by Marantz (1991) and Baker (2015).[15] According to this theory, case is assigned cyclically, the relevant cyclic domains being TP and DP/NP.[16] Importantly, genitive is analyzed as a case assigned within the DP/NP, whereas nominative, absolutive, accusative, and ergative are of course all assigned within the clausal domain. Each domain is globally scanned by the case-assigning algorithm, which goes through three ordered steps.

- First, the algorithm satisfies all case-selectional requirements by assigning the necessary *inherent cases*.
- Second, the algorithm applies the parameterized rule in (26).

  (26) Let $DP_1$ and $DP_2$ be two as-yet-caseless nominals in the same domain. If $DP_1$ c-commands $DP_2$:
  a. mark $DP_1$ [= in the clause, ERGATIVE] and/or
  b. mark $DP_2$ [= in the clause, ACCUSATIVE]

  In other words, the algorithm enters every pair of as-yet-caseless nominals into a case competition that results in assignment of so-called *dependent case*: in an ergative language/construction, it is the higher nominal that receives that case within the clause, while, in an accusative language/construction, the lower nominal does; finally, in a tripartite-alignment language/construction, both (26a) and (26b) apply, and each nominal in the c-command pair receives a different dependent case.
- Third, the algorithm assigns *unmarked case* (which we may refer to as nominative or absolutive, or, within NP/DP, as genitive) to the nominals that did not get case in either of the previous steps.

This theory captures the structural nature of the ergative, and can thus account for the case alternations it takes part in (see in particular Baker & Bobaljik 2017). But most importantly, the theory provides us the right conceptual bases to make sense of the case classes we have found. More specifically, the genitive case, being assigned in a different cyclic domain than the other cases we have looked at, is now actually expected not to be hierarchically ordered relative to them. As for the cases assigned within the clause, the

[14] Thanks to Jenneke van der Wal and Michelle Yuan for suggesting this possibility to me.
[15] Cf. also Yip, Maling & Jackendoff (1987) and Bittner & Hale (1996).
[16] Baker (2015) adds VP to the list, while acknowledging that it would then be the only case-assignment domain to be subject to cross-linguistic variability (Baker 2015: 146ff). I will refrain from incorporating his suggestion here.

Marantzian algorithm turns out to make reference to the same classes we have observed: UNMARKED – DEPENDENT – INHERENT.[17]

Insofar as our morphological generalizations are accurate and we wish to make better sense of them, we thus have a novel kind of argument in favor of a dependent-case approach.

## 7 Capturing the results across frameworks

Although the main focus of this paper has been on the implications of *ABA for the structure and nature of case categories, the *ABA patterns I have surveyed can also prove helpful in restricting the theoretical space of available morphological models.

In Sections 2–3, I adopted an account of *ABA in suppletion and syncretism which was couched within a simplified version of Distributed Morphology. In such a framework, the terminal nodes of the syntactic tree are bundles of features, each of which is realized post-syntactically by the most specific rule of exponence that matches it. As we have seen, this setup, coupled with the right containment hierarchies, derives *ABA without further ado. However, the models actually used in most research within decompositional-realizational morphology (e.g. DM or Nanosyntax) are generally richer or altogether different than the simple one I have assumed here. I shall therefore move on, before closing, to examine what the main such enrichments and revisions amount to, and on what conditions they can maintain the desired restrictiveness with respect to *ABA.

I will focus first on DM approaches that supplement Underspecification with feature-deleting Impoverishment rules intervening between syntax and exponence (Section 7.1), and I will then move on to Nanosyntactic approaches that replace Underspecification with Overspecification, reversing the directionality of exponent competition (Section 7.2). As I will show, both frameworks can be made to predict *ABA, albeit each with a different tradeoff: on the one hand, Impoverishment must be constrained to apply gradually—in a sense made precise below—so as to not overgenerate ABA syncretisms; on the other hand, Nanosyntax requires a proliferation of case heads in order to extend its treatment to case-sensitive suppletion.

### *7.1 Reconciling *ABA and Impoverishment*

The main theoretical addition we need to address within classical DM relates to the treatment of so-called "metasyncretisms"—syncretisms that unfailingly apply in certain morphosyntactic contexts, across various exponents. In Russian, for example, all plural nominals syncretize gender, regardless of syntactic or inflectional classes. Such a generalization, however, cannot be expressed under a purely exponence-based approach to syncretism, such as I assumed in Section 3. As noted by Zwicky (1985: 378) in a partly different theoretical context, "if we insist […] that formal identities are to be described by rules of exponence […], then we are stuck with a separate rule for each exponent, and generalizations are missed."[18]

The classical response to this challenge within DM is the posit of Impoverishment—an operation that, prior to Vocabulary Insertion, deletes certain features from a bundle generated by the Narrow Syntax (Bonet 1991; Noyer 1992; Halle 1997). The problem with such an operation, however, is that, if left unfettered, it constitutes a threat for our

[17] Importantly, Smith et al. (2018) also stated their case containment hierarchy in terms of the notion of dependent case, but did not use tripartite systems as a source of evidence against the ergative-as-inherent alternative.

[18] See also Noyer (1992: 9) and Stump (1993: 454) for similar insights.

predictions about *ABA, as has also been recently observed by Caha (2018a: 76). To see how an Impoverishment rule could overgenerate ABA, consider (27).[19]

(27) Unattested Impoverishment:
[NOM; ACC; DAT] → [NOM] / [PLURAL] __

In the absence of a rule also impoverishing the accusative plural into the corresponding nominative, (27) would make nominative and dative plural systematically syncretize together to the exclusion of accusative—an unattested ABA.

One possible reaction to this problem would just be to eliminate Impoverishment altogether from the theory of grammar. (As we will see in Subsection 7.2, this is the direction pursued by Nanosyntax.) An alternative response, however, which I would like to explore in this section, is to constrain Impoverishment in such a way as to prevent overgeneration, without thereby giving up on the idea of directly capturing metasyncretism generalizations. The solution I'd like to suggest to this end is an adaptation of insights from Ackema & Neeleman's (2018) and Middleton's (2018) "Russian Doll Principle," which here I reinterpret in terms of markedness, and which I rechristen "Graduality" in (28).[20]

(28) *Graduality* (cf. Ackema & Neeleman 2018; Middleton 2018)
An Impoverishment rule can delete feature φ from bundle B only if B contains no feature $\psi$ that is strictly more marked than φ.

Here I am following much of the literature (e.g. Caha 2009 on case and Smith et al. 2018 on number) in interpreting containment hierarchies as markedness hierarchies. Somewhat more formally:

(29) Feature $\psi$ is more marked than feature φ iff the contexts in which $\psi$ can appear form a proper subset of the contexts in which φ can appear.

To see how (28) delivers the desired restrictions, take once again the impossible Impoverishment in (27), repeated here as (30).

(30) [NOM; ACC; DAT] → [NOM] / [PLURAL] __

This rule violates Graduality because one of its targets—ACC—is not the most marked feature in the bundle. To approximate the results of (30), we must therefore decompose it into two rules, each of them Graduality-compliant, and allow the first one to feed the second one.

[19] This criticism applies *a fortiori* to even less restrictive devices used in Word-and-Paradigm theories, such as Rules of Referral (Zwicky 1985; Stump 1993) and content–form property mappings (Stump 2015), mapping certain feature combinations onto the exponence of certain others:

(i) a. Unattested Rule of Referral:
In the context of [PLURAL], realize [NOM; ACC; DAT] as [NOM].

b. Unattested property mapping:
$pm(\sigma\!:\!\{\text{NOM; ACC; DAT; PLURAL}\}) = \sigma \backslash \{\text{ACC; DAT}\}$

[20] The formulation in (28) is especially indebted to Middleton's (2018): "Only the outermost layer of the structure is available for impoverishment." Somewhat different is Ackema & Neeleman's (2018: 249) original proposal: "Given a feature structure with a host and a dependent feature, it is not possible to apply a rule whose target is the host feature and whose structural description does not mention the dependent feature."

(31) a. [NOM; ACC; DAT] → [NOM; ACC] / [PLURAL] __
b. [NOM; ACC] → [NOM] / [PLURAL] __

In this way, however, we would impoverish not just the dative but also the accusative into a nominative, thus resulting not in ABA but in a licit AAA.

To see now why we need to reference feature hierarchies, rather than just limiting Impoverishment to one feature per time, consider one more variation on this theme.

(32) [NOM; ACC; DAT] → [NOM; DAT] / [PLURAL] __

(33) Rules of exponence: [NOM, ACC] → /B/
[NOM] → /A/

If it were not for Graduality, a rule like (32) may erase the ACC feature alone from a dative bundle. Given the rules of exponence in (33), we would then have no other choice than the nominative exponent /A/ to realize the impoverished dative [NOM, DAT], ending up with an ABA pattern. Graduality, however, leads us to replace (32) with (34).

(34) [NOM; ACC; DAT] → [NOM; ACC] / [PLURAL] __

Given the same rules of exponence in (33), this will now give us a familiar ABB.

In summary, the Graduality principle in (28), inspired by Ackema & Neeleman's (2018) and Middleton's (2018) work, allows us to maintain Impoverishment as a useful theoretical tool for capturing generalizations about metasyncretism, without thereby running the risk of ruling ABA syncretisms back in.

### *7.2 Recasting the results in Nanosyntax*

While Impoverishment and *ABA restrictions on syncretism are—as we have seen—not inherently irreconcilable, several theorists have taken the opposite route and accepted *ABA as an argument against Impoverishment operations (cf. again Caha 2017a; 2018a). The framework of Nanosyntax (Caha 2009; 2019; Starke 2009; Baunaz & Lander 2018), in particular, has further extended this reductionist stance to all morphology-specific operations that DM assumes to intervene between syntax and exponence. This leads to the disposal, not only of Impoverishment, but also of Halle & Marantz's (1993) Fusion and Fission, which are respectively supposed to collapse two sister terminal nodes into one and to split up one terminal node into two, thereby conveniently altering the number of Vocabulary-Insertion loci.[21]

[21] If we maintain our assumption that [ABS; ERG; DAT] starts out as a single syntactic terminal, for example, we may need a Fission rule like (ii) to explain why, in languages like Agul, that bundle is realized not by a single exponent but by appending a dative-specific affix on top of the ergative:

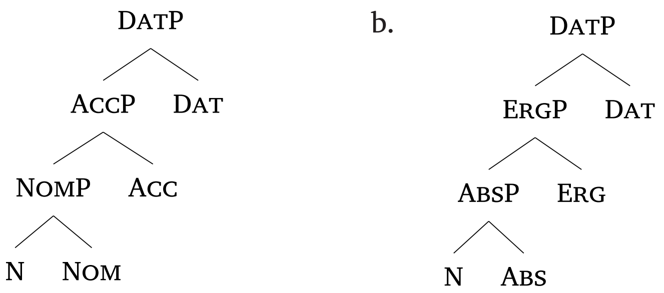
(i) *Agul* (Klimov 1994: 148)
a. ABS gaga ERG gaga-**di** DAT gaga-**di**-s
b. ABS zaw ERG zaw-**u** DAT zaw-**u**-s

(ii) [ABS; ERG; DAT] → [[ABS; ERG] [DAT]]

One may fear that this complication could threaten our account of *ABA in syncretism—for example, if we could Fission the ergative bundle [ABS; ERG] into [ABS] and [ERG] while leaving the dative bundle [ABS; ERG; DAT] unbroken. Such a scenario, however, is ruled out by the very logic of containment: since the ergative is contained within the dative, there is no way for the structural description of the relevant Fission rule to match the former without also matching the latter.

Nanosyntax rejects such rearrangements and proposes an alternative based on two novel assumptions: *i*) terminal nodes of syntactic trees are always single features; *ii*) Vocabulary Insertion is not restricted to terminal nodes, but is in fact attempted at every non-terminal node, bottom-up, with each successful insertion overriding the previous ones. The first assumption forces us to replace the feature bundles we have used so far with trees along the lines of (35), while non-terminal Spell-Out now allows exponents to lexicalize not just single terminals but also whole complex constituents—and, in some variants of the framework, even contiguous spans of terminals that do not exhaustively form a constituent together.[22]

(35) a. b.



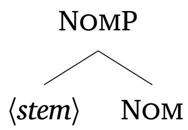

To make non-terminal Spell-Out work, Nanosyntax replaces classical Underspecification with Starke's (2009) Overspecification, according to which, in order to be eligible for realizing a given set of features, an exponent must be specified for *at least* all of them. More accurately:

(36) *Superset Principle* (Caha 2009; Starke 2009)
A lexically stored tree L matches a syntactic tree S if L properly or improperly dominates S, modulo traces and already–spelled-out constituents.

At the same time, however, Nanosyntax retains the logic of Pāṇini's "elsewhere" ordering. Coupled with the Superset Principle in (36), this entails that, if lexically stored trees $L_1$ and $L_2$ both match syntactic tree S, but $L_1$ properly dominates $L_2$, then it is the smaller, less widely applicable $L_2$ that gets chosen to spell S out.

While Overspecification reverses the directionality of competition between exponents, Pāṇinian ordering still allows us to rule out ABA, as demonstrated by Caha (2009). To see why this is so, consider the partially spelled-out structure in (37): absent a dedicated nominative exponent, both the exponent lexicalizing accusative (38a) and the one lexicalizing dative (38b) will be eligible superset candidates for Nom; however, Pāṇinian ordering will always give priority to the minimal superset (38a). BBA will thus always block ABA, as desired.

(37)

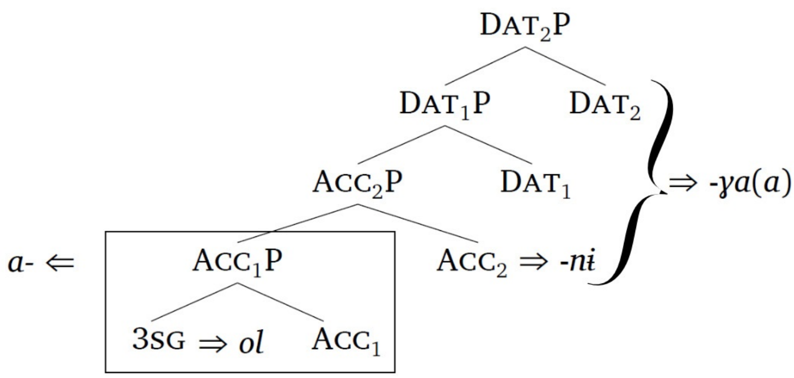



(38) a. /B/ ⇔ $[\text{Nom}^0\ \text{Acc}^0]_{\text{AccP}}$
b. /A/ ⇔ $[[\text{Nom}^0\ \text{Acc}^0]_{\text{AccP}}\ \text{Dat}^0]_{\text{DatP}}$

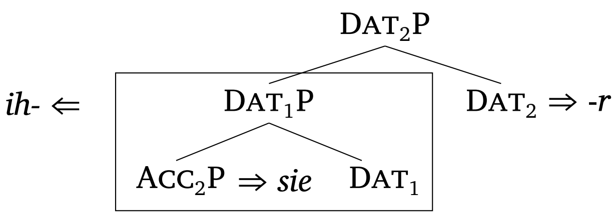
[22] For span-free variants of the framework involving so-called Spell-Out–driven movement, see especially Baunaz & Lander (2018) and Caha, De Clercq & Vanden Wyngaerd (2019). Here I use non-constituent spans just for ease of exposition.

While it works nicely for constraining syncretism, the Overspecification-based approach is less straightforwardly applicable to contextual restrictions on allomorphs. Recent work in Nanosyntax thus tends to eschew such restrictions altogether, and suggests that putative contextual allomorphs may never be specified to lexicalize the exact same bit of structure, but always differ in the amount of structure they can spell out (De Clercq & Vanden Wyngaerd 2017; Caha, De Clercq & Vanden Wyngaerd 2019). If we apply this approach, for example, to the Khakass 3SG paradigm in Table 28, we will have to to split the ACC head into two heads—ACC$_1$ and ACC$_2$—and treat the putative 3SG allomorph *a-* as actually a portmanteau for both 3SG and ACC$_1$, leaving ACC$_2$ to be realized by the affix *-nɨ* (39). A similar account should also be devised for German 3SG.F in Table 29, by splitting DAT up into DAT$_1$ and DAT$_2$ (40).

(39)




(40)




This approach accounts for *ABA in suppletion via appeal to Pāṇinian ordering and bottom-up cyclicity (Caha 2017b; De Clercq & Vanden Wyngaerd 2017). In the Khakass example in (39), for instance, the Pāṇinian reasoning reviewed above for (37)– (38b) prevents *ol* from being the best match for both the unmarked stem and DAT$_1$P without also being for the intermediate constituents ACC$_1$P and ACC$_2$P. At the same time, the bottom-

**Table 28:** Suppletion in Khakass (Brown et al. 2003).

| | **regular** | **3SG** |
|---|---|---|
| NOM | -Ø | ol |
| ACC | -nɨ | a-nɨ |
| DAT | -ɣa | a-ɣa(a) |

**Table 29:** Suppletion in German.

| | **'this', F.SG** | **3F.SG** |
|---|---|---|
| NOM | diese | sie |
| ACC | diese | sie |
| DAT | diese-r | ih-r |

up cyclicity of the Vocabulary-Insertion procedure rules out the alternative possibility of first lexicalizing $\text{ACC}_1^0$ together with the stem (via *a*-) and then "excorporating" it back to lexicalize it with $\text{ACC}_2^0$ and $\text{DAT}_1^0$ higher up (via *ol* + -*ɣa*(*a*)). Either way, therefore, ABA cannot be generated.

Aside from its merits in preserving Smith et al.'s (2018) results, however, this reconception of allomorphy still faces several challenges, which motivate my choice of not couching my current results in Nanosyntactic terms. First of all, reanalyzing all putative contextual allomorphy as portmanteau morphology often requires splitting up a head into two (or more) without independent evidence for that decomposition, as we saw in (39)–(40) with poorly motivated doublets like $\text{ACC}_1 \sim \text{ACC}_2$ and $\text{DAT}_1 \sim \text{DAT}_2$. This proliferation problem is particularly acute in cases of mutual allomorphic conditioning. The German suffix -*r* in (40), for example, is actually not just a generic dative exponent, but specifically a feminine one. To encode this contextual restriction in Nanosyntax, we would thus have to also posit some structure encoding feminine gender in the immediate vicinity of $\text{DAT}_2$, again with little independent evidence for such high gender heads. Last but not least, the system still has no way to capture phonologically conditioned allomorphy—a substantial portion of allomorphic phenomena (see e.g. the overview in Nevins 2011). Pending a solution to these problems, I will thus treat the feasibility of a purely Overspecification-based approach to exponence as a question in need of further investigation.

## 8 Open ends

In this paper I have argued, based on a sample of 102 case-inflecting languages, that case-sensitive suppletion and non-accidental case syncretism universally obey the same *ABA restrictions, and that these restrictions make reference to case classes that are most straightforwardly interpreted in terms of theories of dependent case. More specifically, I have argued for the universal containment hierarchy in (41), and discussed how such a hierarchy can derive the observed *ABA patterns across different decompositional-realizational approaches to morphology, with differing analytical tradeoffs.

(41) CLAUSAL UNMARKED ⊂ CLAUSAL DEPENDENT ⊂ INHERENT

Framework comparisons aside, I have left several other questions open along the way. At the deepest conceptual level, obvious questions remain concerning the origin of the hierarchy in (41) itself: Where does it come from, and more specifically, how can we explain its tantalizing parallelism with the order in which cases are assigned by Marantz's (1991) algorithm (structurally biggest cases assigned first, and lightest ones assigned last)?

At a more nitty-gritty level, another underdeveloped aspect of the current proposal concerns the theory of featural similarities between cases assigned within different domains. Judging from the genitive's exceptional "license to syncretize" (cf. Tables 23–25 above), it appears as though such cross-domain similarities should be left essentially unconstrained: a case *x* assigned in domain X could then share features with any case *y* assigned in domain Y, regardless of *x*'s and *y*'s respective case classes. Why this should be so, however, remains to be understood.

Finally, it is worth noting that, throughout the paper, I have been relying on the simple dependent-case system outlined by Marantz (1991), abstracting away from various theoretical additions proposed in subsequent work. These include, for example, the recognition of VP as another potential case-assignment domain alongside nominals and clauses (Baker 2015: § 4.2; cf. fn. 16), the introduction of negative c-command conditions on certain dependent cases (again Baker 2015: § 3.3) and of double c-command conditions on certain others (Harley 1995). Whether all these developments could and should be integrated within the current account is another question I leave for future work.

## Abbreviations

ABS = absolutive; ACC = accusative; AUX = auxiliary; DAT = dative; DEF = definite; DU = dual; ERG = ergative; EXCL = exclusive; F = feminine; GEN = genitive; HON = honorific; INCL = inclusive; INESS = inessive; INF = infinitive; INSTR = instrumental; LOC = locative; M = masculine; N = neuter; NOM = nominative; OBL = oblique; PL = plural; PROX = proximal; SG = singular.

## Additional File

The additional file for this article can be found as follows:

- **Appendix.** List of languages surveyed, with their respective syncretisms. DOI: https://doi.org/10.5334/gjgl.816.s1

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## Competing Interests

The author has no competing interests to declare.

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