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Taking the nominative (back) out of the accusative

Case features and the distribution of stems in Indo-European paradigms

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Abstract
The nominative, the accusative and the dative have been recently argued to stand in proper containment to one another. In contrast to more traditional decompositions which posited no such containment, this new decomposition has been shown to account for the absence of ABA exponence patterns for this triplet of cases, i.e. for the fact that no rule of exponence applies in both nominative and dative without also applying in the accusative. We point out that, in addition to its desirable predictions regarding *ABA, the more recent decomposition also makes an undesirable prediction about the derivation of ABB patterns, as we show based on data from Indo-European languages. We argue that a third theory—under which the accusative is properly contained within the dative, but the nominative and the accusative do not stand in a containment relation to one another—accounts for all the relevant facts.

Keywords Case · Features · *ABA · Allomorphy · Competition · Indo-European

1 Introduction

Recent work has advanced the idea that cases are decomposed featurally as in Table 1 (Caha 2009; McFadden 2018; Smith et al. 2019; Zompì 2019). Under this view, the Case features of the nominative form a proper subset of those of the accusative, which

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Table 1 Strong Case Containment

NOM	ACC	DAT
∅	k_1	k_1
		k_2

Table 2 No Case Containment

NOM	ACC	DAT
k_0	k_1	k_1
k_3	k_3	k_2

in turn form a proper subset of those of the dative.[1] We refer to systems such as the one in Table 1 as Strong Case Containment (SCC).[2] As will be discussed in Sect. 2 of the present paper, a benefit of adopting SCC is that, when combined with the widely assumed Subset Principle (Halle 1997; Halle and Marantz 1993), it straightforwardly captures a robust cross-linguistic generalization about Case morphology known as *ABA: no rule of exponence applies in both the nominative and the dative without also applying in the accusative (Caha 2009; McFadden 2018; Smith et al. 2019).[3,4] *ABA for the order NOM $\prec$ ACC $\prec$ DAT is predicted because, under SCC, it is impossible for a rule of exponence to exclusively apply in accusative contexts unless a more specific rule applies in dative contexts.

The success of SCC in accounting for *ABA motivates a move away from more traditional systems where the three cases are not in a proper containment relation to one another, as in Table 2, and which we will be referring to as No Case Containment (NCC).[5] NCC does not allow for a straightforward analysis of *ABA because, in this system, rules can be readily specified to apply exclusively in accusative contexts ($\{k_1, k_3\}$), with no implications for the corresponding dative (or nominative).

Interestingly, opting for SCC over NCC does not come without problems. The main empirical issue with SCC that we discuss in this paper is exemplified in Table 3, which features what we call a Non-Elsewhere Nominative Stem (NENS). The

[1] We only discuss these three cases in the present paper because the relevant literature does not seem to have reached a consensus about the relation between other oblique cases (Bárány 2021; Caha 2009, 2019b; Harðarson 2016; Middleton 2021; Zompì 2017, 2019; Smith et al. 2019; Starke 2017).

[2] Even though we have presented SCC as a system where NOM involves no Case features at all, this is not a core property of SCC. In particular, the system would remain SCC even if we added the same feature (or any number of the same features, for that matter) to all three cases, such that, for example, NOM= $\{k_n\}$, ACC= $\{k_n, k_1\}$ and DAT= $\{k_n, k_1, k_2\}$. What makes the system SCC is the proper containment relation between the cases. Since nothing we say in the present paper hinges on whether there are any features shared by all three cases, we have chosen to assume that there are none, for the sake of simplicity.

[3] See Bobaljik (2012) for the original coinage of "*ABA," in reference to suppletion patterns in adjectival degree morphology.

[4] We use the term "rule of exponence" to refer to any rule which takes morphosyntactic features as its input and which outputs a phonological representation, i.e. to "Vocabulary Items" of Distributed Morphology.

[5] Here we present NCC in terms of privative features, even though this system has been mostly discussed in terms of binary features. Nothing in our argument hinges on this choice, but we find that talking about NCC in terms of privative features facilitates the comparison with SCC, which is at the core of our paper. See Sect. 2 for more discussion, as well as references to the literature that discusses NCC.

Table 3 Doric Greek feminine definite determiner (Szemerényi 1996: 205)

	NOM	ACC	DAT
SG	**h**-ā	**t**-ā́n	**t**-ā̂i
DU	**t**-ṓ	**t**-ṓ	**t**-oîn
PL	**t**-aí	**t**-ā́s	**t**-oîn

Table 4 Weak Case Containment

NOM	ACC	DAT
k_0	k_1	k_1
		k_2

distribution of the *h*-stem and the *t*-stem in the paradigm of Table 3 exemplifies, as we shall see, a pervasive pattern in Indo-European languages. A straightforward description of this pattern is that it involves one stem, here the *h*-stem, applying in nominative singular contexts, and another one, here the *t*-stem, applying elsewhere. This situation is perfectly consistent with NCC, under which we can represent the distribution of the two stems in Table 3 as the result of competition between an *h*-rule specified for $\{k_0, k_3\}$ singular contexts, and a *t*-rule that is not specified for any Case or Number features. Since the *h*-rule is specified for a proper superset of the features that the *t*-rule is specified for, the *h*-rule will be chosen over the *t*-rule in nominative singular contexts under any version of the Subset Principle. Under SCC, on the other hand, the pattern of Table 3 does not receive a straightforward analysis. As we will see in Sect. 3, the problem is that SCC offers no way of writing a non-elsewhere rule that will apply exclusively in nominative contexts, because all the features of the nominative are present in accusative and dative contexts as well. We will argue that the introduction of "markedness" meta-features by McFadden (2018) as a way of side-stepping this problem leads to an untenable notion of markedness and that it therefore does not provide a viable solution to the problem raised by NENSs for SCC.

The tension between SCC and NCC leads us to our main theoretical question: how should we represent nominative, accusative and dative in order to straightforwardly capture both *ABA and the existence of NENSs? In Sect. 4, we show that a system such as the one in Table 4, which combines properties of SCC and NCC and which we refer to as Weak Case Containment (WCC), is a system that allows us to do just that.

Section 5 discusses the predictions made by WCC about the derivation of AAB and ABC patterns and argues that these are in line with the empirical landscape, despite a couple of apparent problems. Section 6 concludes the paper with a discussion of a potential additional advantage of WCC over both SCC and NCC when it comes to capturing the (un)attested patterns of surface containment between nominative, accusative and dative forms.

Table 5 *ABA in stem suppletion for NOM ≺ ACC ≺ DAT

	NOM	ACC	DAT
AAA, e.g. Cl. Greek 1PL	**hēm**-eîs	**hēm**-âs	**hēm**-în
ABB, e.g. Lovari 3SG.MASC	**vou**	**le**-s	**le**-s-ke
AAB, e.g. O. Saxon 3SG.FEM	**s**-iu	**s**-ia	**i**-ru
ABC, e.g. Albanian 3SG.FEM	a-**jo**	(a-)**tə**	a-**saj**
ABA is **unattested**			

Table 6 *ABA in affix syncretism for NOM ≺ ACC ≺ DAT (Icelandic examples; Einarsson 1949: 38–44, 68)

	NOM	ACC	DAT
AAA, e.g. 'heath' SG	heið-**i**	heið-**i**	heið-**i**
ABB, e.g. 'time' SG	tím-**i**	tím-**a**	tím-**a**
AAB, e.g. 'tongue' PL	tung-**ur**	tung-**ur**	tung-**um**
ABC, e.g. 2SG	þ-**ú**	þ-**ig**	þ-**ér**
ABA is **unattested**			

2 *ABA: SCC over NCC

There is a history of thinking of cases like the nominative, the accusative and the dative as being universally ordered relative to each other—specifically, with the accusative sandwiched between the nominative and the dative (Blake 2001; Bobaljik 2008; Marantz 1991; Yip et al. 1987). This idea has gained new momentum as a result of a recently discovered empirical generalization, which we refer to as *ABA. According to this generalization, no rule of exponence ever applies in both the nominative and the dative without also applying in the accusative (Caha 2009; McFadden 2018; Smith et al. 2019; Zompì 2017, 2019). Take, for example, the patterns found in the distribution of stems in pronominal paradigms, illustrated in Table 5 (stems are bolded). Given the order NOM ≺ ACC ≺ DAT, we find instances of AAA (no stem allomorphy at all), ABB (same stem for ACC and DAT to the exclusion of NOM), AAB (same stem for NOM and ACC to the exclusion of DAT) and ABC (a different stem for each case), but never ABA (see Smith et al. 2019 for the original cross-linguistic survey).[6] The same goes for patterns of non-accidental Case-affixal syncretism, as illustrated with Icelandic examples in Table 6 (affixes are bolded). Given the same order NOM ≺ ACC ≺ DAT, we sometimes find the same Case (and Number) affix in all three cases (AAA), sometimes in just ACC and DAT (ABB), and sometimes in just NOM and ACC (AAB), but we never find ABA (Caha 2009; cf. Baerman et al. 2005).

The *ABA generalization has been taken to support a particular implementation of the idea of a universal case ordering—one whereby the nominative involves a proper subset of the features of the accusative and the accusative involves a proper subset of

[6] Unlike the rest of the attested sequences, the AAB sequence from Old Saxon does not seem to be morphosyntactically conditioned, as discussed in Sect. 5.1. Among Indo-European languages, we have not found any convincing examples of AAB patterns that are not amenable to alternative analyses that rely on phonological conditioning (see Sect. 3.2; cf. McFadden 2018). For the present paper, we set aside the question of why that should be and assume that *AAB is a different phenomenon from *ABA, following Bobaljik (2012) and McFadden (2018).

Table 7 Strong Case Containment

NOM	ACC	DAT
∅	k_1	k_1 k_2

the features of the dative, as in Table 7.[7] We refer to this featural decomposition of the three cases as Strong Case Containment, or SCC.

The appeal of SCC is that it straightforwardly derives *ABA within realizational morphological frameworks that adopt the Subset Principle in (1).[8]

(1) *Subset Principle* (cf. Halle 1997: 128)
  a. A rule of exponence applies to a structure only if that rule is specified for a subset of the features present in that structure.
  b. If several incompatible rules of exponence may apply to the same structure, only the rule specified for the greatest number of features applies.

An exhaustive list of the derivations that become possible once we combine the Subset Principle in (1) with SCC is found in Table 8. On the far left side of the table, we have the number of possible rule inventories that lead to distinct derivations. The second column provides the rules in each of these inventories, numbered as A, B and C, along with the Case features that these rules are specified for.[9] The next three

[7] Caha (2009), McFadden (2018), and Smith et al. (2019) make a stronger assumption, namely, that these three cases stand in a proper containment relation to each other not only featurally, but also syntactically: $[[[\ldots]\, k_1\,]\, k_2\,]$. We will merely assume the featural conception of SCC. Since the syntactic conception of SCC entails the featural one, the issues we point out with the latter carry over to the former.

[8] In fact, this holds more generally of other realizational approaches incorporating some form of the Pāṇinian Elsewhere Principle (cf. Kiparsky 1982), including Superset-based approaches like most versions of Nanosyntax (Caha 2009; Starke 2009). To keep things concrete, however, here we adopt one of the implementations of the Elsewhere Principle that is often used in Distributed Morphology, namely that in Halle (1997: 128). Note that this formulation keeps track of set cardinality. This is unlike stricter formulations such as the one in (i) below—closer to Kiparsky's (1982) original formulation (cf. also Bobaljik 2012: 9)—which only keeps track of subset relations. We opted for Halle's version, which is more permissive in the types of competition that it allows, in order to give SCC the best possible shot in our theory comparison.

(i) If incompatible rules R_1, R_2 may apply to a given structure, and the contexts to which R_1 is eligible to apply form a subset of the contexts to which R_2 is eligible to apply, then R_2 does not apply.

[9] A couple of terminological remarks are in order at this point. First, notice that we are using "rule A" as a short-hand for "the rule of exponence whose output is exponent A." Although exponents and the rules outputting them are of course not the same thing, this apparent sloppiness is unproblematic because, barring accidental homophony, there is a one-to-one correspondence between the two. Second, notice that we are using "rule A is specified for feature x" as an umbrella expression to cover both those cases where rule A spells out x (i.e. cases where x is a *target*, or *operand*, of rule A) and cases where rule A spells out some other feature *y on the condition that x be local* (i.e. cases where x is a *contextual condition* on rule A); we shall therefore say, for example, that rule A in (i) below is specified both for f and for g. This formulation allows us to remain noncommittal as to whether the instances of Case-sensitive stem exponence we are interested in are fusional/portmanteau exponence of stem and Case features or contextual allomorphy of the stem conditioned by local, independently spelled-out Case features.

(i) $\{f\} \rightarrow \mathrm{A}\, /\, \_\_\, \{g\}$

Table 8 Derivations of AAA, ABB, AAB and ABC, assuming the Subset Principle and SCC
(▒ = the rule competes and wins ▒ = the rule competes but loses ■ = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM= Ø	ACC={k_1}	DAT={k_1, k_2}	
1.	A: Ø	wins	wins	wins	*AAA*
2.	A: Ø	wins	loses	loses	*ABB*
	B: {k_1}	does not compete	wins	wins	
3.	A: Ø	wins	wins	loses	*AAB*
	B: {(k_1,)k_2}	does not compete	does not compete	wins	
4.	A: Ø	wins	loses	loses	*ABC*
	B: {k_1}	does not compete	wins	loses	
	C: {k_1, k_2}	does not compete	does not compete	wins	

columns of the table represent the competition between the rules made available by each inventory, in each of the three contexts: nominative, accusative and dative. The lightest shade of gray indicates that the rule of that row wins the competition in the specific context, the middle shade indicates that the rule is eligible to apply but is blocked by a more specific rule, and the darkest shade indicates a rule that is not eligible to apply in that context (see also key above the table). The far right column of the table points out the resultant surface pattern for each possible derivation.

AAA patterns are derived simply when a rule A is not specified for any Case features (Ø) and there is no other rule that is. By contrast, ABB patterns will arise in case two rules A and B are specified for Ø and {k_1}, respectively: in the nominative, only A will be eligible to apply and therefore will apply, whereas, in both the accusative and the dative, both A and B will be eligible to apply, but B will win over A in both cases by virtue of being specified for a greater number of features ($|\{k_1\}| > |Ø|$). By the same token, AAB patterns will arise in the presence of two rules A and B, respectively specified for Ø and {k_2} (or for Ø and {k_1, k_2}): rule A will be the only rule eligible to apply in nominative and accusative and, therefore, will apply; both A and B will be eligible to apply in the dative but B will win due to it being more specified. Finally, ABC patterns will be derived as the result of three rules A, B and C, specified for Ø, {k_1} and {k_1, k_2}, respectively: in the nominative, A will apply as the only eligible rule; in the accusative, both A and B will be eligible, but the latter will win; in the dative, all three rules will be eligible, but C will win. The only logically possible pattern that is not derivable in this system is ABA. This is because, for any two-rule inventory (i.e. any inventory that only includes a rule A and a rule B) where one rule applies in the nominative and the other in the accusative, the rule that applies in the accusative will also win the competition in the dative.

SCC contrasts with a more traditional decomposition of nominative, accusative and dative that we refer to as No Case Containment (or NCC), whereby none of the three cases is properly contained within either of the others. NCC has been typically

Table 9 NCC (in terms of binary features)

	NOM	ACC	DAT
MOTION	−	+	+
PERIPHERAL	−	−	+

Table 10 NCC (in terms of privative features)

NOM	ACC	DAT
k_0	k_1	k_1
k_3	k_3	k_2

adopted in terms of binary features, such as the ones used in Calabrese (2008) in Table 9.[10] In order to facilitate the comparison of this system with SCC, we have translated NCC into privative features in Table 10 by adding to SCC two additional features, namely k_0, which is the equivalent of −MOTION in being a feature present only in nominative contexts, and k_3, which is equivalent to −PERIPHERAL in being a feature that is present in nominative and accusative contexts but absent in dative contexts.

Importantly, unlike what we saw for SCC, once NCC is combined with the Subset Principle, ABA patterns are readily generable. Table 11 lists all the possible derivations under NCC and the Subset Principle, including one with the surface pattern ABA (row 2). Such patterns are generable by positing a rule A that is not specified for any Case features and a rule B specified to apply in accusative contexts via reference to the accusative-specific set of features $\{k_1, k_3\}$. Given the above, if the literature is correct that ABA patterns are not attested in the languages of the world, NCC suffers from an overgeneration problem that SCC does not.[11]

As one can verify by comparing Tables 8 and 11, the possibility of deriving ABA is not the only way in which SCC and NCC differ from each other. Notably, whereas NCC allows for deriving the patterns ABB, AAB and ABC in multiple ways (three ways of deriving each of the patterns ABB and AAB, and nine ways of deriving ABC

[10]Though we draw on the system described in Calabrese (2008) for concreteness, Calabrese's system is merely taken to be representative of a long line of work that has adopted systems with the NCC property. Other works that have proposed/assumed a NCC system (albeit with different labels) include Jakobson (1936) (±DIRECTIONAL vs ±MARGINAL); Bierwisch (1967) (±OBLIQUE vs ±GOVERNED); Franks (1995) (±MARGINAL or ±OBLIQUE vs ±NONASCRIPTIVE); Harley (2008) (±STRUCTURAL vs ±DEPENDENT); and Müller (2008) (±OBLIQUE vs ±GOVERNED).

[11]Since the problem faced by NCC is one of overgeneration, it is in principle possible to capture *ABA, if NCC is combined with additional restrictions. For example, one could locate NCC's binary features on separate heads, i.e. [[[...] ±MOTION] ±PERIPHERAL], and assume a constraint that prevents rules of exponence from having access to both structural layers at the same time—since ABA is the only one of the patterns that would require simultaneous reference to both features (see Table 11), *ABA would thus be derived. See also Müller (2020: 259–279), for a principled account of *ABA under NCC; cf. also fn. 27. The point here is that, whereas *ABA is captured under SCC simply by adopting the Subset Principle *and no further assumptions*, this is not true under NCC, even though most (if not all) accounts that adopt NCC do also assume some version of the Subset Principle.

Table 11 Derivations of AAA, ABA, ABB, AAB and ABC, assuming the Subset Principle and NCC (light = the rule competes and wins; mid-grey = the rule competes but loses; dark = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM$=\{k_0, k_3\}$	ACC$=\{k_1, k_3\}$	DAT$=\{k_1, k_2\}$	
1.	A: ∅	competes and wins	competes and wins	competes and wins	AAA
2.	A: ∅	competes and wins	competes but loses	competes and wins	ABA
	B: $\{k_1, k_3\}$	does not compete	competes and wins	does not compete	
3.	A: $\{k_0(, k_3)\}$	competes and wins	does not compete	does not compete	ABB
	B: $\{k_1\}$	does not compete	competes and wins	competes and wins	
4.	A: $\{k_0(, k_3)\}$	competes and wins	does not compete	does not compete	ABB
	B: ∅	competes but loses	competes and wins	competes and wins	
5.	A: ∅	competes and wins	competes but loses	competes but loses	ABB
	B: $\{k_1\}$	does not compete	competes and wins	competes and wins	
6.	A: $\{k_3\}$	competes and wins	competes and wins	does not compete	AAB
	B: $\{(k_1,) k_2\}$	does not compete	does not compete	competes and wins	
7.	A: ∅	competes and wins	competes and wins	competes but loses	AAB
	B: $\{(k_1,) k_2\}$	does not compete	does not compete	competes and wins	
8.	A: $\{k_3\}$	competes and wins	competes and wins	does not compete	AAB
	B: ∅	competes but loses	competes but loses	competes and wins	
9.	A: $\{k_0(, k_3)\}$	competes and wins	does not compete	does not compete	ABC
	B: $\{k_1, k_3\}$	does not compete	competes and wins	does not compete	
	C: $\{(k_1,) k_2\}$	does not compete	does not compete	competes and wins	
10.	A: $\{k_0(, k_3)\}$	competes and wins	does not compete	does not compete	ABC
	B: $\{k_1\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1, k_2\}$	does not compete	does not compete	competes and wins	
11.	A: $\{k_0, k_3\}$	competes and wins	does not compete	does not compete	ABC
	B: $\{k_3\}$	competes but loses	competes and wins	does not compete	
	C: $\{(k_1,) k_2\}$	does not compete	does not compete	competes and wins	
12.	A: $\{k_3\}$	competes and wins	competes but loses	does not compete	ABC
	B: $\{k_1, k_3\}$	does not compete	competes and wins	does not compete	
	C: $\{k_1\}$	does not compete	competes but loses	competes and wins	
13.	A: ∅	competes and wins	competes but loses	competes but loses	ABC
	B: $\{k_1\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1, k_2\}$	does not compete	does not compete	competes and wins	
14.	A: ∅	competes and wins	competes but loses	competes but loses	ABC
	B: $\{k_1, k_3\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1\}$	does not compete	competes but loses	competes and wins	
15.	A: $\{k_0, k_3\}$	competes and wins	does not compete	does not compete	ABC
	B: $\{k_3\}$	competes but loses	competes and wins	does not compete	
	C: ∅	competes but loses	competes but loses	competes and wins	
16.	A: $\{k_3\}$	competes and wins	competes but loses	does not compete	ABC
	B: $\{k_1, k_3\}$	does not compete	competes and wins	does not compete	
	C: ∅	competes but loses	competes but loses	competes and wins	
17.	A: $\{k_0(, k_3)\}$	competes and wins	does not compete	does not compete	ABC
	B: ∅	competes but loses	competes and wins	competes but loses	
	C: $\{(k_1,) k_2\}$	does not compete	does not compete	competes and wins	

Table 12 Derivations of ABB, assuming the Subset Principle and SCC (from Table 8)
(light grey = the rule competes and wins; medium grey = the rule competes but loses; dark grey = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM= Ø	ACC= $\{k_1\}$	DAT= $\{k_1, k_2\}$	
2.	A: Ø	competes and wins	competes but loses	competes but loses	*ABB*
	B: $\{k_1\}$	does not compete	competes and wins	competes and wins	

Table 13 Doric Greek feminine definite determiner (Szemerényi 1996: 205)

	NOM	ACC	DAT
SG	**h**-ā	**t**-ā̃n	**t**-ā̂i
DU	**t**-ṓ	**t**-ṓ	**t**-oîn
PL	**t**-aí	**t**-ā́s	**t**-oîn

patterns), SCC predicts a specific derivational path for each of these patterns.[12] The question that arises and with which we will be concerned for the rest of the paper is whether, in addition to capturing *ABA, SCC also makes the right predictions for the derivations of ABB, AAB and ABC patterns.

3 Derivations of ABB: NCC over SCC

In the present section, we argue that SCC's strong predictions about the derivation of ABBs face insurmountable empirical problems. This will lead us to the conclusion that, despite its success with *ABA, SCC must ultimately be rejected.

3.1 The argument against SCC

As one can verify by looking at row 2 of Table 8 (the row is repeated below as Table 12), there is only one way of deriving ABB under SCC. The derivation of this pattern involves two rules, A and B, the former not specified for Case features and the latter specified for $\{k_1\}$. This leads to a prediction about the possible occurrence of A and B in other parts of the paradigm. Specifically, since k_1 is, by hypothesis, never present in nominatives, we expect that the prediction in (2) should hold true.

(2) For a given context C_1 where we find the pattern ABB, there should be no context C_2 where rule B applies in the nominative.

The prediction in (2) appears to be falsified by paradigms such as the one from Doric Greek in Table 3, repeated here as Table 13. This paradigm involves precisely what we expect not to find according to (2): an ABB pattern in the singular (i.e. *h*-stem, *t*-stem, *t*-stem) whose B exponent (i.e. the *t*-stem) is also found in nominative

[12] AAA patterns are derived in the same way under both SCC and NCC. Since the pattern is the result of a single rule of exponence that applies in all three Case contexts, that rule has to be specified with a set of Case features that is common to all three contexts; we assume this set to be Ø.

Table 14 English feminine singular 3rd person pronoun

	NOM	ACC=DAT
FEM	**sh**-e	**h**-er
MASC	**h**-e	**h**-im

contexts (in the dual and plural). Perhaps a more intuitive way of formulating the problem is the following: in the most straightforward description of a paradigm such as that of Doric Greek, the *t*-stem appears to be the "elsewhere" stem, with the *h*-stem specified to only occur in nominative singular contexts, as in (3). However, the analysis in (3) is ruled out under SCC, which states that, in any ABB pattern, rule B must be more specific than rule A.

(3) a. Insert *h*-stem in nominative singular contexts
b. Insert *t*-stem elsewhere

Non-Elsewhere Nominative Stems (NENSs) such as the *h*-stem in Table 13 are widely attested, at least across Indo-European languages. As seen in Table 14, a NENS can even be observed in English. Examples of NENSs in other Indo-European languages that we have encountered include: the 1st-person pronoun in Modern Greek (Holton et al. 2012: 113) and Latvian (Prauliņš 2012: 54), the demonstrative pronouns in Eastern Armenian (Dum-Tragut 2009: 130–131), Gothic (Braune and Heidermanns 2004: 134–135), Icelandic (Einarsson 1949: 70), Old English (Hogg and Fulk 2011: 192–195), Old Norse (Barnes 2008: 63–64), Sanskrit (Mayrhofer 1978: 58–59) and Tocharian (Krause and Slocum 2007–10: Sect. 3.1), the Gothic relative pronoun (Braune and Heidermanns 2004: 136), the Latvian "emphatic" pronoun *pats* (Prauliņš 2012: 465) and the 3rd-person pronouns of Afrikaans (Donaldson 1993: 123), Dutch (Donaldson 2008: 66), Frisian (Tiersma 1999: 55), Gothic (Braune and Heidermanns 2004: 133) and Low German (Matras and Reershemius 2003: 22).

Under NCC, on the other hand, no prediction is made regarding the relative specificity of rules A and B in ABB patterns. As can be seen in rows 3–5 of Table 11 (repeated below as Table 15), under NCC, ABB patterns may be derived not only by inventories where rule B is more specific than rule A (like row 5), but also by inventories where rule A is more specific than rule B (like row 4). This renders NCC perfectly consistent with an analysis like (3) for a paradigm like that of Doric Greek, and as such, NCC appears to be superior to SCC when it comes to capturing the existence of NENSs.[13]

We should point out that the argument relies on a meta-theoretical assumption that we take to be fundamental to most work in morphology. It would be possible to posit rules that make reference to *disjunctive contexts*, as in (4), in order to satisfy SCC's

[13] Pavel Caha (pers. comm.) points out to us that it is possible to maintain SCC without making the prediction in (2), under recent versions of the Superset-Principle-based framework of Nanosyntax (e.g. Caha 2019a or Blix 2021) which enrich the mapping between features and Vocabulary Items (backtracking) or the structure of the Vocabulary Items themselves (pointers). We leave the comparison between these theoretical alternatives and our more conservative approach as a task for future research, but see fn. 27 and Sect. 6.2 for a potential argument, based on surface-containment, against (any version of) SCC.

Table 15 Derivations of ABB, assuming the Subset Principle and NCC (from Table 11)
(= the rule competes and wins   = the rule competes but loses   = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM=$\{k_0, k_3\}$	ACC=$\{k_1, k_3\}$	DAT=$\{k_1, k_2\}$	
3.	A: $\{k_0(, k_3)\}$				*ABB*
	B: $\{k_1\}$				
4.	A: $\{k_0(, k_3)\}$				*ABB*
	B: Ø				
5.	A: Ø				*ABB*
	B: $\{k_1\}$				

requirement that the *t*-stem be more richly specified than the *h*-stem. While positing (4) would technically solve the problem under SCC, admitting rules like (4a) (without anything else restricting possible disjunctions) opens the door to describing any type of exponent distribution under any theory of features by simply listing the contexts in which each exponent appears. Since we take this to be an extremely weak position, for the sake of restrictiveness, we reject the general approach that appeals to rules that reference disjunctive environments.[14]

(4) a. Insert *t*-stem in contexts that are non-singular or non-nominative
b. Insert *h*-stem elsewhere

We conclude that, once both *ABA and the existence of NENSs have been considered, a tension arises between SCC and NCC: on the one hand, SCC offers a straightforward account of *ABA, while NCC does not. On the other hand, SCC makes a prediction about the relative specificity of A and B in ABBs which appears to be too strong, while NCC is appropriately flexible to accommodate the NENS pattern.

[14]It is a similar concern that has led McFadden (2018) to propose that we could perhaps see "non-singular" and "non-nominative" as jointly constituting a single natural class he called "marked" features:

> In Finnish, Latin and Icelandic, plurals have the 'non-nominative' stem throughout, even in the nominative [...] This is somewhat puzzling. We could take it as evidence that, in these languages, the stem formant in the nominative singular is actually the marked one, with explicit restrictions on the context for its insertion, whereas the non-nominative stem is the elsewhere realization of little n. [...] The tricky thing is that, under the kind of analysis being pursued here, there is no distinguishing feature of the nominative singular that could be used to formulate the contextual restriction—the nominative singular is characterized by the lack of features in comparison to the non-nominative cases and the plural. On the other hand, writing a specification for the 'non-nominative' stem formant is made difficult by the fact that it appears in a disjunctive context, whenever there is a marked case or plural number. One way to deal with this would be to propose that it is not sensitive to the presence of particular heads, but rather to the presence of any marked value. (McFadden 2018: 25)

As we shall see, the problem noticed by McFadden emerges in many paradigms beyond Finnish, Icelandic and Latin, and several such paradigms resist certain conceivable alternative analyses. As for McFadden's proposal for dealing with the issue, in Sect. 3.3 we argue that it must be rejected.

3.2 A note on the empirical basis of our argument

Before we move on, let us clarify some choices we have made in constructing the empirical basis of the argument against SCC in Sect. 3.1. Particularly problematic for SCC are cases where some exponent can be identified as making direct reference to nominative contexts, i.e. an exponent that occurs in nominative contexts but which could not reasonably be taken to be an elsewhere exponent. Though we have come to believe that exponents of this type are abundant (at least) in Indo-European languages, finding the right paradigms to make the case for their existence can be tricky if one wants to control for possible alternative analyses. Below we provide justification for why we opted for basing our argument on certain types of paradigms and not on others, as a means of controlling for alternative analyses that would not necessarily require direct reference to nominative contexts.

One type of paradigm that might seem to make the same point that we made in Sect. 3.1, but which we have intentionally excluded from our database, can be exemplified by the one in Table 16 from Old English, where an *s*-stem only occurs in nominative environments and a *þ*-stem has what looks like an elsewhere distribution. What prevents us, then, from safely diagnosing the *s*-stem here as a NENS? The property of the paradigm in Table 16 that is of potential importance is that, in all cells in which the *þ*-stem occurs in nominative contexts, the form is syncretic with the corresponding accusative form. This fact crucially opens the door to an analysis under which the *s*-stem is the elsewhere stem, despite appearances. Such an analysis would account for the syncretism via a feature manipulation that effectively turns nominative cells into accusative cells before rules of exponence apply.[15] Under this analysis, nominative cells that involve the *þ*-stem do not really involve nominative feature bundles, but accusative ones. Proponents of such an analysis could then claim that the *þ*-stem really is specified to occur in non-nominative contexts (i.e. k_1), but that this is obscured by the feature manipulation. In order to rule out possible analyses of this type, we have decided to exclude from our database paradigms like the one in Table 16 and to only include ones where at least one of the nominative cells featuring the putative elsewhere stem is not syncretic with its corresponding accusative. Paradigms that we dismissed for such reasons include the Modern and Classical (Attic) Greek definite determiner (Holton et al. 2012: 52; Kühner and Blass 1890: 604), the Albanian adjectival article (Newmark et al. 1982: 181), the Lovari definite clitic pronoun (Pobożniak 1964: 58), as well as nominal paradigms such as that of Latin *homō* 'human' (Ernout 1953: 45–46) and Slovene *mati* 'mother' (Herrity 2015: 82).[16]

For a similar reason, we avoided paradigms such as the one in Table 17. In this Latin paradigm, the affix *-us* appears to be a Non-Elsewhere Nominative Affix, as

[15]Note, however, that under SCC, turning a nominative feature bundle into an accusative one requires the addition of features, i.e. "Enrichment" (as opposed to Impoverishment). As pointed out in various works, Enrichment should be handled with caution, lest it open the door to turning any feature bundle into any other (Noyer 1998; Bobaljik 2002; Müller 2007; Harley 2008). We do not know of any restrictive theory of Enrichment that, in a system like SCC, would allow nominative feature bundles to be turned into accusative ones. Still, we assume that one such theory of Enrichment is possible, in order to raise the bar for convincing evidence as much as possible.

[16]The paradigm of Latin *homō* 'human' has been used by McFadden (2018) to make the same point that we make in Sect. 3.1 (see our fn. 14).

Table 16 Old English distal demonstrative pronoun (Hogg and Fulk 2011: 192)

	SG			PL		
	NOM	ACC	DAT	NOM	ACC	DAT
FEM	**s**-ēo	**þ**-ā	**þ**-ǣre	**þ**-ā	**þ**-ā	**þ**-ǣm
MASC	**s**-ē	**þ**-ōne	**þ**-ǣm	**þ**-ā	**þ**-ā	**þ**-ǣm
NEUT	**þ**-æt	**þ**-æt	**þ**-ǣm	**þ**-ā	**þ**-ā	**þ**-ǣm

Table 17 Latin 'good' (Ernout 1953: 25)

	NOM	ACC	DAT
MASC	bon-**us**	bon-**um**	bon-**ō**
NEUT	bon-**um**	bon-**um**	bon-**ō**

it were, since it only appears in nominative contexts, at the same time as a different affix, namely -*um*, shows up in both nominative and non-nominative contexts, i.e. it shows an elsewhere distribution. Just like in the case of the Old English pronouns, however, one might be tempted to argue that the elsewhere distribution of -*um* is only apparent. Given the syncretism between nominative and accusative in neuter contexts, one may assume that neuter nominatives turn into accusatives before rules of exponence apply and that, therefore, the exponent -*us* is, despite appearances, the elsewhere affix, with -*um* specified to occur in accusative contexts. Recall that our solution to the analogous problem with stems was to focus on paradigms where at least one of the nominative cells featuring the putative elsewhere stem was not syncretic with its corresponding accusative. For affixes, this turned out to be impossible, since when the affixes of two cells are identical, their stems tend to also be identical. In other words, paradigms such as the one in Table 17 were as close as we were able to get to diagnosing Non-Elsewhere Nominative Affixes. Given the possibility of treating syncretism in terms of feature manipulation, we decided to exclude affixal patterns from our database altogether.

Finally, we have tried to exclude from our database paradigms featuring an apparent NENS, but in which the relevant alternation lends itself to an analysis that appeals to phonological conditioning. Take, for example, the Latin paradigm in Table 18. Here, the stem *senec*- shows up only in nominative singular contexts, and the stem *sen*- shows up everywhere else.[17] In other words, the stem *senec*- appears to be a NENS. However, the distribution of the two stem alternants in this paradigm could also be taken to be governed by phonological properties of the affixes: *senec*- shows up only in cells where the affix is consonantal, whereas *sen*- shows up only when the affix starts with (or perhaps simply includes) a vowel. Should this be the right analysis of the distribution of these stems, the fact that one of them appears in the nominative singular and the other one everywhere else would be completely coincidental. Notice that stem alternations that are conditioned by phonological properties of the affix(es) are independently needed to account for otherwise inexplicable alternations like the one between *gir*- and *gīr*- in the Sanskrit paradigm in Table 19, with

[17] Whether we take the relevant alternation here to actually be *senec*- ∼ *sen*-, or just -*ec*- ∼ Ø, the point remains the same.

Table 18 Latin 'old man' (Ernout 1953: 60)

	NOM	ACC	DAT
SG	**senec**-s	**sen**-em	**sen**-ī
PL	**sen**-ēs	**sen**-ēs	**sen**-ibus

Table 19 Sanskrit 'song' (Stump 2015: 73)

	NOM	ACC	GEN	LOC	DAT	INS	ABL
SG	**gīr**	**gir**-am	**gir**-as	**gir**-i	**gir**-e	**gir**-ā	**gir**-as
DU	**gir**-au	**gir**-au	**gir**-os	**gir**-os	**gīr**-bhyām	**gīr**-bhyām	**gīr**-bhyām
PL	**gir**-as	**gir**-as	**gir**-ām	**gīr**-ṣu	**gīr**-bhyas	**gīr**-bhis	**gīr**-bhyas

the short-vowel stem appearing before vowels and the long-vowel stem everywhere else (Stump 2015: 72–73).[18] In order to make sure that our argument against SCC was built on clear evidence that exponence may reference nominative contexts, we decided to also exclude paradigms such as the one in Table 18, which lend themselves to analyses referencing the phonological properties of the affixes.

This filtering of our initial database has led us to mainly consider stem alternations in pronominal (and determiner) paradigms in building our argument against SCC.[19,20] What we hope to have established is that, even if we admit the possibility of (reasonable) feature manipulations and phonologically-conditioned stem alternations, there still exist paradigms (the ones listed in Sect. 3.1 and Sect. 3.3) that are immune to such alternative analyses. It is these paradigms that most clearly provide evidence for rules of exponence making direct reference to nominative environments and therefore the ones that most severely undermine SCC. For the rest of this section we review the viability of a proposal made in McFadden (2018) as a way of sidestepping the problem of NENSs for SCC. We argue, however, that his proposal is ultimately not viable and that, therefore, the tension between SCC and NCC remains unresolved.

[18] Stump (2015: 73) also notes that "Sanskrit phonology allows the sequence /īr/ before vowels and the sequence /ir/ before consonants," and hence that the alternation falls outside of regular phonology.

[19] Potentially relevant stem alternations in nominal (rather than pronominal) paradigms, at least in Indo-European, were for the most part analyzable as phonologically-conditioned (see Sect. 5.1).

[20] A reviewer points out that "most of the empirical evidence that is presented here involves closed-class items (pronouns, determiners)" and that "these are domains where psycho-linguistic evidence has strongly suggested that all word forms are stored as such in the mental lexicon." We take the concern to be that, if pronouns really were not morphologically decomposed, then our focus on pronominal "stems" here would be misguided. However, we think this concern is mitigated by the very existence of Smith et al.'s (2019) results: if pronominal "stems" were not represented as such in the lexicon, they would not be expected to support any *ABA generalization—much less one that converges with the *ABA generalization independently found in case-affix syncretism across uncontroversially decomposable forms (on the convergence between the *ABA patterns of Case-affix syncretism in nouns and Case-conditioned co-suppletion in pronouns, see Zompì 2019). We leave the reconciliation of this conclusion with the available psycholinguistic counterevidence as an open question.

3.3 Why invoking "markedness" features is not the right solution to the problem

Acknowledging the problem that NENSs pose for SCC, McFadden (2018) proposes that we could maintain SCC if we allow rules of exponence to make reference to meta-features encoding an abstract notion of "markedness." Concretely, McFadden proposes that "markedness" be conceived of as "the presence of a feature." Assuming SCC and this notion of markedness, nominative would be "unmarked," while both accusative and dative would be "marked" by virtue of them having features, as in (5a).[21] Assuming further that singular and plural are also decomposable as in (5b), with dual/plural marked and singular unmarked, the Doric Greek *h*-∼*t*- stem alternation (Table 13) can be understood as resulting from rules of exponence sensitive to McFadden's notion of markedness: *t*- is inserted in environments where marked features are present (i.e. in all environments that are non-singular or non-nominative) and *h*- is inserted elsewhere. Rules of exponence with this effect are given in (6).

(5)	a.	(i)	NOM	b.	(i)	SG
		(ii)	ACC^{m}		(ii)	DU^{m}
		(iii)	DAT^{m}		(iii)	PL^{m}

(6) a. Insert *t*-stem in "marked" contexts
b. Insert *h*-stem elsewhere

We argue that McFadden's notion of markedness faces a severe empirical problem. For any category distinguishing two or more properties, at least one of these properties would have to be "marked." This, however, does not seem to be correct. Consider, for example, the Latvian emphatic pronoun in Table 20. Given that the exponence rule for *paš*- does not apply to either nominative singular masculine or nominative singular feminine, we are forced, on McFadden's approach, to conclude that neither masculine nor feminine in Latvian have Gender features. An even more striking manifestation of the same problem is found in the Tocharian anaphoric pronouns in Table 21, where neither masculine nor feminine can involve features, but at the same time these two Genders must still be distinguished by a stem alternation. Notice, further, that Gender as a category cannot be thought to be generally exempt from McFadden's notion of markedness, since, if it were so, the approach would be left without an analysis of the stem alternation in the English 3rd person pronoun (Table 14) and others like it.[22]

Tocharian also instantiates an analogous problem for the domain of Deixis. In Table 22, we find, again, the characteristic L-shaped pattern replicated this time across

[21] See Trommer (2005; 2016) for an antecedent of this approach in the context of a treatment of German strong and weak adjectival inflection. Further back in time, Béjar and Hall (1999) push this line of explanation even further, positing a "form of underspecification in which a morpheme may be specified for a [given] degree of featural markedness without being specified for any individual feature."

[22] Note also that, in order to account for the English paradigm under McFadden's approach, one would have to take masculine to be marked and feminine to be unmarked, which is the reverse from what has been concluded based on other markedness diagnostics (cf. e.g. Bobaljik et al. 2011). Thus, even if McFadden's notion of markedness were not untenable on independent grounds, as we argue it is, it would still have to be a strictly distinct notion from other, more traditional notions of markedness.

Table 20 Latvian emphatic pronoun 'self' (Prauliņš 2012: 465)

	MASC			FEM		
	NOM	ACC	DAT	NOM	ACC	DAT
SG	**pat**-s	**paš**-u	**paš**-am	**pat**-i	**paš**-u	**paš**-ai
PL	**paš**-i	**paš**-us	**paš**-iem	**paš**-as	**paš**-as	**paš**-ām

Table 21 Tocharian A anaphoric pronouns (Krause and Slocum 2007–10: Sect. 31)

	MASC		FEM	
	NOM	ACC=DAT	NOM	ACC=DAT
SG	**s**-am	**c**-am	**s**-ām	**t**-ām
PL	**c**-em	**c**-esäm	**t**-om	**t**-osäm

Table 22 Tocharian A masculine demonstrative pronouns (Krause and Slocum 2007–10: Sect. 31)

	DIST		PROX	
	NOM	ACC=DAT	NOM	ACC=DAT
SG	**s**-am	**c**-am	**s**-äs	**c**-as
PL	**c**-em	**c**-esäm	**c**-es	**c**-esäs

Table 23 Old English singular feminine demonstrative pronoun (Hogg and Fulk 2011: 192–195)

	NOM	ACC	DAT
DIST	**s**-ēo	**þ**-ā	**þ**-ǣre
PROX	**þ**-ēos	**þ**-ās	**þ**-isse

Deixis values. By the same logic that we applied above to Latvian, a markedness approach would be forced to assume that this language's Deixis properties (i.e. distal and proximal) should both lack features. Moreover, just as with Gender, the category Deixis cannot be thought to be generally exempt from McFadden's notion of markedness, since, for paradigms such as the one from Old English in Table 23, proximal would have to be assumed to be "marked."

Given the existence of categories with multiple properties that would all have to count as "unmarked" (and that, moreover, would have to do so in some languages but not in others), we conclude that McFadden's notion of markedness can provide at best a technical solution to the problem that NENSs pose to SCC. An implication of this conclusion is that the tension between SCC and NCC that we pointed out in Sect. 3.1 remains, effectively, unresolved.

4 Weak Case Containment

In this section, we propose a solution to the tension between SCC and NCC by adopting a system that is midway between the two, which we refer to as Weak Case Containment (WCC). The system is the one represented in Table 24, where the dative feature set still properly contains the accusative one (as in SCC), but nominative and accusative do not stand in a proper containment relation to one another (as in NCC).

Table 24 Weak Case Containment

NOM	ACC	DAT
k_0	k_1	k_1 k_2

It should be clear why we say that WCC is "midway" from NCC to SCC: WCC is like SCC and unlike NCC in lacking a feature that is common to the nominative and accusative but absent in dative contexts, namely k_3; on the other hand, WCC is like NCC and unlike SCC in having a feature that is present exclusively in nominative contexts, namely k_0.[23,24] We argue that this midway featural decomposition also allows us to have the best of both worlds, in terms of empirical coverage.

Recall that, under NCC, one could readily specify a rule with features only present in accusative contexts, namely with the feature set $\{k_1, k_3\}$, which opened the door to the derivation of the ABA pattern. Under SCC, on the other hand, this was not possible: any rule that could apply in accusative contexts could also apply in dative contexts due to proper containment of the former in the latter. Since our WCC, like SCC, involves proper containment of the accusative inside the dative, it also shares with SCC the prediction that ABA should not be a generable surface pattern. Table 25 lays out all the possible derivations of the surface patterns AAA, ABB, AAB and ABC that are available once we combine WCC and the Subset Principle.

While WCC matches SCC's success in ruling out ABA, it is not as strict as SCC when it comes to its predictions about the relative specificity of rules of exponence in ABB patterns. As can be seen from rows 2–4 of Table 25, unlike SCC but like NCC, WCC does not make the prediction that rule B in ABBs will always be more specific than rule A. In fact, rows 2–3 specifically show that, under WCC, there are derivations of ABB where rule A is more specific than rule B. As a result, WCC also matches the success of NCC in affording a straightforward analysis of NENSs.[25]

For example, the Latvian stem alternation from Table 20, singling out nominative singular across both masculine and feminine, can now easily be captured by the rules

[23] We consider Arsenault (2007) to be a precursor to our proposal. See Arsenault (2007); Moskal (2018); and Vanden Wyngaerd et al. (2020) for analogous decompositions of categories other than Case.

[24] Notice that a different way of talking about WCC is in terms of one binary feature similar to, say, Calabrese's ±MOTION that distinguishes between NOM and ACC/DAT, and one privative feature that is present in DAT environments specifically. For the rest of the paper, we will continue to talk about WCC in terms of three privative features, for purely expository purposes.

[25] Based on just the data seen so far, one may even wonder whether there is actually any evidence for derivations of ABB where rule B is *more* specific than rule A, as e.g. in row 4; that is, one may wonder if we ever need to posit k_1 at all. It turns out that we do—specifically, to capture the distribution of stems like *undz* in the Yiddish 1st-person paradigm or *ykk-* in the Icelandic 2nd-person paradigm, shown below.

Yiddish 1st person (Jacobs 2005: 185)

	NOM	ACC	DAT
SG	**ix**	**m**-ix	**m**-ir
PL	**m**-ir	**undz**	**undz**

Icelandic 2nd person (Einarsson 1949: 68)

	NOM	ACC	DAT
SG	**þ**-ú	**þ**-ig	**þ**-ér
PL	**þ**-ið	**ykk**-ur	**ykk**-ur

Table 25 Derivations of AAA, AAB, ABB, ABC assuming the Subset Principle and WCC
(light grey = the rule competes and wins; mid grey = the rule competes but loses; dark grey = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM=$\{k_0\}$	ACC=$\{k_1\}$	DAT=$\{k_1, k_2\}$	
1.	A: ∅	competes and wins	competes and wins	competes and wins	*AAA*
2.	A: $\{k_0\}$	competes and wins	does not compete	does not compete	*ABB*
	B: $\{k_1\}$	does not compete	competes and wins	competes and wins	
3.	A: $\{k_0\}$	competes and wins	does not compete	does not compete	*ABB*
	B: ∅	competes but loses	competes and wins	competes and wins	
4.	A: ∅	competes and wins	competes but loses	competes but loses	*ABB*
	B: $\{k_1\}$	does not compete	competes and wins	competes and wins	
5.	A: ∅	competes and wins	competes and wins	competes but loses	*AAB*
	B: $\{(k_1,)k_2\}$	does not compete	does not compete	competes and wins	
6.	A: ∅	competes and wins	competes but loses	competes but loses	*ABC*
	B: $\{k_1\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1, k_2\}$	does not compete	does not compete	competes and wins	
7.	A: $\{k_0\}$	competes and wins	does not compete	does not compete	*ABC*
	B: ∅	competes but loses	competes and wins	competes but loses	
	C: $\{(k_1,)k_2\}$	does not compete	does not compete	competes and wins	
8.	A: $\{k_0\}$	competes and wins	does not compete	does not compete	*ABC*
	B: $\{k_1\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1, k_2\}$	does not compete	does not compete	competes and wins	

in (7). Since neither the *pat*-stem nor the *paš*-stem are specified for Gender features, the pattern that their interaction gives rise to will cut across genders, as desired.[26]

(7) a. Insert *pat*-stem in k_0 singular contexts
b. Insert *paš*-stem elsewhere

What we hope to have shown is that, once we consider both the absence of ABA patterns and the existence of ABB patterns where rule A is more specific than rule B, both SCC and NCC face a challenge, whereas a system like WCC does not.[27] What we still have not addressed is how this kind of reasoning may extend to other patterns. SCC, WCC and NCC make predictions about the relative specificity of rules

[26]The success of this account rests on the assumption that properties like masculine, singular and proximal—which, under our account, have to be specified alongside nominative for the paradigms we have looked at—are also not properly contained within all other properties in their respective categories. We have not come across any evidence against this prediction. For singular, see e.g. Noyer (1992) and Harbour (2014); for proximal, see e.g. Harbour (2016) and Terenghi (2021).

[27]As pointed out in fn. 11 and fn. 13, NCC or SCC could be supplemented with additional assumptions to rule out ABA or rule in NENSs, respectively. However, the observations about surface containment which we present in Sect. 6.2 seem to us to be more in line with WCC than with any enriched versions of either NCC or SCC.

of exponence not only in ABB patterns, but in AABs and ABCs as well. For example, WCC predicts that rule B should always be more specific than rule A in AAB patterns (cf. row 5 of Table 25) and that rule C should always be more specific than rule B in ABCs (cf. rows 6–8 of Table 25). In the next section, we address these predictions and argue that, at least within Indo-European, they are not met with any convincing counterexamples (though see Sect. 5.1 for some apparent challenges from AABs), and that therefore, WCC seems to be a promising feature decomposition of nominative, accusative and dative.

5 Possible and impossible derivations of AABs and ABCs under WCC

5.1 AABs

WCC (like SCC) is more restrictive than NCC when it comes to deriving AAB patterns. Consider the three possible derivations of AAB under NCC in Table 26. Importantly, NCC allows us to derive AAB patterns either via inventories where rule B is more specific than rule A (row 7 in Table 26) or via inventories where rule A is more specific than rule B (row 8 in Table 26). The latter derivation, however, has no counterpart under WCC (or SCC; see row 3 in Table 8), because in WCC there is no such feature as k_3. The only possible derivation of AABs under WCC is thus the one repeated below in Table 27, where rule A is unspecified for Case features, and where rule B is specified for (at least) the dative-specific feature k_2. It thus follows, under WCC, that rule B in any AAB pattern will not be able to apply in nominative or accusative contexts elsewhere in the paradigm, since these contexts do not involve k_2. This prediction is laid out in (8).[28]

[28] Barring feature manipulations turning accusatives into nominatives, WCC yields the same consequence for the analysis of AAB in Case affixation, which is, as a reviewer points out, a widespread pattern in Indo-European languages. Consider, for example, the AAB pattern of the affixes *-ēs* and *-ibus* in the plural of Latin *custōs* 'keeper.' Here, WCC forces us to view the nominative-accusative affix *-ēs* as not specified for any Case features, as in (i).

Latin 'keeper' (Aronoff 1994: 80–81)

	NOM	ACC	DAT
SG	custōs	custōd-em	custōd-ī
PL	custōd-**ēs**	custōd-**ēs**	custōd-**ibus**

(i) a. Insert *-ēs* in the context of plurals
b. Insert *-ibus* in the context of $(k_1,)k_2$ plurals

In certain morphosyntactic contexts (e.g. the neuter), we also observe systematic nominative-accusative syncretism across a variety of exponents (Aronoff 1994; Calabrese 2008; Baerman 2004; McFadden 2018; Plank 2016; Wunderlich 2004). If one is to capture such "metasyncretisms" via Impoverishment (Bobaljik 2002), then one will need a rule like (ii), whose effect is to neutralize what would have featurally distinguished nominative from accusative. As a result of the application of (ii), rules specified for either k_0 or k_1 will no longer be eligible to apply in neuter contexts. (The relevant Impoverishment rule could even be potentially stated in a more concise way if k_0 and k_1 were taken to represent the two values of a single binary feature, as mentioned in fn. 24).

Table 26 Derivations of AAB, assuming the Subset Principle and NCC (from Table 11)
(░ = the rule competes and wins ▒ = the rule competes but loses ▓ = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM=$\{k_0, k_3\}$	ACC=$\{k_1, k_3\}$	DAT=$\{k_1, k_2\}$	
6.	A: $\{k_3\}$	░	░	▓	AAB
	B: $\{(k_1,)\, k_2\}$	▓	▓	░	
7.	A: Ø	░	░	▒	AAB
	B: $\{(k_1,)\, k_2\}$	▓	▓	░	
8.	A: $\{k_3\}$	░	░	▓	AAB
	B: Ø	▒	▒	░	

Table 27 Derivations of AAB, assuming the Subset Principle and WCC (from Table 25)
(░ = the rule competes and wins ▒ = the rule competes but loses ▓ = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM=$\{k_0\}$	ACC=$\{k_1\}$	DAT=$\{k_1, k_2\}$	
5.	A: Ø	░	░	▒	AAB
	B: $\{(k_1,)k_2\}$	▓	▓	░	

(8) For a given context C_1 where we find the pattern AAB, there should be no context C_2 where rule B applies in the nominative or the accusative.

In the rest of this section, we review the AAB patterns of stem exponence that appear to counterexemplify (8) within Indo-European. While a detailed analysis of each relevant case study would take us too far afield, here we wish to provide a proof of concept that, for virtually all the apparent counterexamples to (8) that we have come across, there are alternative analyses of the stem alternation patterns that do not rely on morphosyntactic conditioning.

The first class of apparent counterexamples to (8) is found in Indo-European athematic neuter nouns such as Latin 'thigh' in Table 28. Here a stem ending with *-in-* shows an elsewhere distribution, while a second stem, ending in *-ur*, appears exclusively in nominative singular and accusative singular contexts (Calabrese 2020; McFadden 2018; Moskal 2015). Importantly, this paradigm seems to counterexemplify (8), with an AAB pattern in the singular and a BBB pattern in the plural. However, the distribution of the two stems in this paradigm can be accounted for in terms of a phonological trigger: since only nominative singular and accusative singular are suffixless, one may simply assume that the allomorph *femur* can only show up at the right edge of the phonological word, and that *femin-* shows up elsewhere. The same

(ii) *Impoverishment rule*:
Delete k_0 and k_1 in neuters.

These analytic implications of adopting WCC (which are also implications of adopting SCC) appear to us to be innocuous. In particular, we are not aware of any cases where an AAB pattern in Case affixation counterexemplifies the prediction in (8).

Table 28 Latin 'thigh' (Weiss 2009: 240)

	NOM	ACC	DAT
SG	**femur**	**femur**	**femin**-ī
PL	**femin**-a	**femin**-a	**femin**-ibus

Table 29 Classical Greek 'town' (Kühner and Blass 1890: 440)

	NOM	ACC	DAT
SG	**ásty**	**ásty**	**áste**-i
PL	**áste**-a	**áste**-a	**áste**-si
DU	**áste**-i	**áste**-i	**áste**-oin

Table 30 Slovene 'tribe' (Herrity 2015: 86)

	NOM	ACC	DAT	GEN
SG	**plême**	**plême**	**plemén**-u	**plemén**-a
PL	**plemén**-a	**plemén**-a	**plemén**-om	**plemén**
DU	**plemén**-i	**plemén**-i	**plemén**-oma	**plemén**

problem arises and the same solution is available for Classical Greek neuter nouns such as *ásty* in Table 29. The morphophonological solution may initially seem to not be viable for paradigms such as the one in Table 30 from Slovene, where both the nominative/accusative singular and the genitive dual/plural seem to lack an overt affix and yet they receive different stems. A morphophonological account of the stem alternations is possible even here, however, if the genitive plural/dual suffix underlyingly involves a vowel (*yer*), as has been claimed for other Slavic languages such as Russian (Halle 1994; Bailyn and Nevins 2008).[29]

The second class of apparent counterexamples to (8) comes specifically from Classical Greek, where the AAB pattern may also be found outside neuters, as illustrated in Table 31. Here it is a stem ending in a high vowel (*poli*-, *pēxy*-) that only shows up in nominative singular and accusative singular, while a stem ending in *-e* (*pole*-, *pēxe*-) appears elsewhere. What makes these cases different from the ones discussed above is that the A∼B alternation cannot be blamed on the presence vs the absence of a suffix, since the nominative and accusative singular forms are marked with *-s* and *-n*, respectively. However, while these latter cells are not suffixless, they still have unique morphophonological properties within the paradigm: they are the only cells whose suffix amounts to just a coda (*-s*, *-n*), while all other suffixes are ostensibly syllabic, at least underlyingly.[30] One could thus assume that the high-vowel stem (*poli*-,

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[29]Russian also has a similar class of neuter nouns (e.g. *ímja* ∼ *imen*- 'name'), except that the stem vowel in these nouns' genitive plural is distinct form the stem vowel in the rest of the cells with a nasal stem, e.g. *imen-á* (nominative or accusative plural), or *ímen-i* (dative singular), but *imjón* (genitive plural), which adds a phonological complication to the paradigm. See Wade (2020: 94) for a list of Russian nouns that belong to the relevant class.

[30]For example, even though dative singular *pólei* is superficially bisyllabic (ending with either a long vowel or a diphthong), its UR is /pole+i/ (cf. nominative singular *kólak-s* ∼ dative singular *kólak-i* 'flatterer'). The only potential problem arises from accusative plural *póleis*. While we have implicitly assumed

Table 31 Classical Greek 3rd declension nouns (Kühner and Blass 1890: 440)

	'city' (feminine)			'forearm' (masculine)		
	NOM	ACC	DAT	NOM	ACC	DAT
SG	**póli**-s	**póli**-n	**póle**-i	**pē̂xy**-s	**pē̂xy**-n	**pḗxe**-i
DU	**póle**-	**póle**-	**polé**-oin	**pḗxe**-	**pḗxe**-	**pēxé**-oin
PL	**póle**-	**póle**-	**póle**-si	**pḗxe**-	**pḗxe**-	**pḗxe**-si

Table 32 Old Saxon 3rd person masculine pronoun (Fulk 2018: 190)

	NOM	ACC	DAT
SG	**h**-ē, -ī, -ie	**i**-na(n)	**i**-m(u)
PL	**s**-ia, -ea, -ie	**s**-ia	**i**-m

pēxy-) only appears if it contains the last syllable of the (underlying) phonological word.[31]

Finally, the set of (cognate) paradigms in our sample that proved the most resistant to a morphophonological reanalysis was the one of 3rd-person pronouns in High Germanic. Consider the paradigm of the Old Saxon masculine 3rd-person pronoun in Table 32, where the *i*-stem appears only in the dative in plural contexts (AAB) but in both dative and accusative in singular contexts (CBB). Thus, by looking at the masculine paradigm, one would conclude that *i*-stem is the elsewhere stem, which we (just like SCC) predict to be impossible.

Crucially, however, the problem with these Germanic paradigms is more general. The stem alternations in paradigms like the one in Table 32 could not be characterized in morphosyntactic terms *even if we adopted NCC*. Consider Table 33, where we include both the masculine and feminine forms of the Saxon 3rd person pronoun. What is important to observe is that *neither the i-stem nor the s-stem have morphosyntactically coherent distributions*. Since *i*- and *s*- cannot both be distinct elsewhere stems, the *s*-∼*i*- alternation appears to not be amenable to *any* morphosyntactic analysis, irrespective of whether we adopt WCC, NCC or SCC. Given these facts, we take Old

its underlying suffix to be *-es*, cross-declensional considerations might lead one to favor an alternative analysis such as -*ːs* (cf. thematic accusative plural *lýkūs* < UR /lýk-o-ːs/). If that were the case, the relevant phonological factor would not be (a)syllabicity of the suffix, but rather the presence or absence of a nuclear mora in it.

[31] Kiparsky (2010) and Stump (2015: 82) discuss cognate paradigms in Proto-Indo-European and Sanskrit, where the stem alternation appears to be conditioned by a different phonological factor—namely, by whether the suffix begins with a consonant or a vowel. It is not clear that this analysis can carry over to Greek, where the -*e*-stem also appears before the ostensibly consonant-initial dative plural suffix -*si*.

A couple of heteroclite adjectives add some further complications. Although the gist of the analysis holds some promise even for them, the interactions between stem allomorphy and heteroclisis (which one might think of as affix allomorphy) appear to us complex enough to warrant more extensive discussion than we have space for in the present paper. See McFadden (2018: 27–28) for some preliminary discussion.

Table 33 Old Saxon 3rd person pronoun (Fulk 2018: 190)

	FEM			MASC		
	NOM	ACC	DAT	NOM	ACC	DAT
SG	**s**-iu, -ie	**s**-ia, -ea	**i**-ru,-ro	**h**- ē, - ī, -ie	**i**-na(n)	**i**-m(u)
PL	**s**-ia, -ea, -iu	**s**-ia, -ea	**i**-m	**s**-ia, -ea, -ie	**s**-ia	**i**-m

Table 34 Derivations of ABC, assuming the Subset Principle and WCC (from Table 25)
(light grey = the rule competes and wins; mid grey = the rule competes but loses; dark grey = the rule does not compete)

RULE INVENTORIES		RULE COMPETITION IN EACH CONTEXT			PATTERN
No.	Rules	NOM=$\{k_0\}$	ACC=$\{k_1\}$	DAT=$\{k_1, k_2\}$	
6.	A: Ø	competes and wins	competes but loses	competes but loses	*ABC*
	B: $\{k_1\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1, k_2\}$	does not compete	does not compete	competes and wins	
7.	A: $\{k_0\}$	competes and wins	does not compete	does not compete	*ABC*
	B: Ø	competes but loses	competes and wins	competes but loses	
	C: $\{(k_1,)k_2\}$	does not compete	does not compete	competes and wins	
8.	A: $\{k_0\}$	competes and wins	does not compete	does not compete	*ABC*
	B: $\{k_1\}$	does not compete	competes and wins	competes but loses	
	C: $\{k_1, k_2\}$	does not compete	does not compete	competes and wins	

Saxon and other paradigms like it to be open problems, not only for the theory we are proposing, but for any theory that rejects "morphomes."[32,33]

[32]The problem described here seems to be limited to older West Germanic languages. Paradigms that raise the same issues as that of Old Saxon are found in Old High German (Fulk 2018: 190), Old Frisian (Cummins 1881: 40) and Middle Dutch (Helfenstein 1870: 195).

[33]There is perhaps, even here, a morphophonological trigger underlying the distribution of these stems. Putting aside the *h*-stems of the nominative singular for the moment, the distribution of the *s*-stem vs that of the *i*-stem can be described, across dialects, in terms of whether the suffix that follows is vowel- or consonant-initial. Taking the *s*-stem and the *i*-stem to be morphophonological alternants of the same stem allows us to see these paradigms as involving only two morphosyntactically conditioned stems, i.e. the *h*-stem that applies in masculine nominative singular contexts and the *i/s*-stem elsewhere, as in (i).

(i) a. Insert *h/e*-stem in nominative singular masculine contexts
b. Otherwise:
1) Insert *i*-stem before a consonant-initial suffix
2) Insert *s*-stem before a vowel-initial suffix

A downside of characterizing the *s*-∼*i*- alternations in terms of a morphophonological trigger is that the relevant stem alternation appears to be "suppletive" (in that these stems do not seem to be phonologically related) and recent theories of suppletion have often assumed that phonologically conditioned suppletion (as opposed to relations between phonologically related stems) cannot be "outward sensitive" (Bobaljik 2000; Embick 2010; Paster 2006), though see Deal and Wolf (2017) and references therein for apparent counterexamples to this generalization. While we think that accounting for such patterns without appealing to morphomes will require a morphophonological approach, we leave it to future research to ascertain whether an account like the one in (i) can ultimately be maintained.

Table 35 Albanian demonstrative pronoun (Newmark et al. 1982: 122)

		MASC			FEM		
		NOM	ACC	DAT	NOM	ACC	DAT
DIST	SG	a-**i**	a-**t**-ë	a-**t**-ij	a-**j**-o	a-**t**-ë	a-**sa**-j
	PL	a-**t**-a	a-**t**-a	a-**t**-yre	a-**t**-o	a-**t**-o	a-**t**-yre
PROX	SG	k-**y**	kë-**t**-ë	kë-**t**-ij	k-**j**-o	kë-**t**-ë	kë-**sa**-j
	PL	kë-**t**-a	kë-**t**-a	kë-**t**-yre	kë-**t**-o	kë-**t**-o	kë-**t**-yre

5.2 ABCs

The possible derivations of ABC patterns under WCC are repeated below in Table 34. For any ABC, rule C is predicted to only ever apply in the presence of the feature k_2. Given that under WCC this feature is only present in datives, we make the prediction in (9). The prediction is shared by SCC, though the latter additionally predicts that rule B will be more specific than rule A (see Table 11). Neither of these predictions is shared by NCC, which admits derivations of ABC from inventories where any of the three rules may be more specific than any other (see Table 11).

(9) For a given context C_1 where we find the pattern ABC, there should be no context C_2 where rule C applies in the nominative or the accusative.

Unfortunately, there are only a very small number of ABC patterns available for testing the prediction in (9). The only case of ABC in stems that we have encountered in the Indo-European languages we have looked at (and which is also one of the two ABC patterns identified in Smith et al. 2019) is found in the Albanian demonstrative pronoun, in feminine singular contexts across Deixis properties, as shown in Table 35. As can be verified by looking at the rest of the paradigm, it is the *t*-stem (i.e. rule B) that appears to be the elsewhere rule. Crucially, the *sa*-stem (i.e. rule C) does not spread into accusatives or nominatives outside the feminine singular context, in compliance with (9).[34]

6 Final remarks

6.1 Main conclusions about featural containment in the domain of Case

Different theories of featural decomposition for a particular domain make different predictions not only about the attested and unattested patterns of exponence, but also

[34] The only other language reported by Smith et al. (2019) to exhibit an ABC pattern in stems is Khinalugh, a Nakh-Daghestanian language, with an ergative-absolutive alignment. To the extent that Smith et al. (2019) are correct that there is a *ABA generalization for ABS ≺ ERG ≺ DAT in ergative-absolutive languages paralleling the one found in nominative-accusative languages, we note that the pattern from Khinalugh also conforms to the prediction that rule C in ABC should be more specific than rules both A and B. In the Khinalugh singular first person pronoun, the ABC pattern is ABS: *zɨ*, ERG: *yä*, DAT: *as(ɨr)*, while in the plural, we find ABS: *yir*, ERG: *yir*, DAT: *širu* (Khvtisiashvili 2013: 125). This suggests that (if any conclusions are to be drawn at all) it is the B stem (i.e. the *y*-stem) that exhibits an elsewhere distribution. See Ganenkov (2018), however, for some challenges to the *ABA generalization from other Nakh-Daghestanian ergative-absolutive languages.

Table 36 Surface containment in comparative morphology (Bobaljik 2012: 31–32)

	POS	CMPR	SPRL
Persian 'little'	kam	kam-tar	kam-tar-in
Czech 'young'	mlad-ý	mlad-ši	nej-mlad-ši
English	tall	tall-er	tall-est

about the ways in which the attested patterns can and cannot be derived. The present paper specifically discussed this issue as it applies to the domain of Case. We showed that a tension arises between two competing theoretical approaches to the featural representation of the nominative, the accusative and the dative cases, which we referred to as SCC and NCC: while SCC fares better than NCC in capturing the fact that ABA patterns are unattested (in contrast to AAA, ABB, AAB and ABC, which are all attested), SCC proves to be too strict when it comes to its predictions about the possible and impossible derivations of attested patterns of exponence (in particular ABB). We argued that our proposed third theory, which we referred to as WCC, achieves the best of both worlds: it captures *ABA with the same ease that SCC does and the (im)possible derivations of (un)attested patterns of exponence as easily as NCC does.

We conclude the paper by entertaining some commonly held assumptions about the relation between featural containment and surface containment, and argue that, to the extent that these assumptions are correct, WCC appears to make more accurate predictions than both SCC and NCC in that domain as well.

6.2 From featural containment to surface containment

Featural containment has sometimes been observed to correlate with universal asymmetries in the attested surface-containment patterns. In this last section, we briefly consider what the consequences of adopting WCC are in terms of the attested patterns of surface containment. We conclude that, assuming a particular theory of how featural containment and surface containment relate to each other, WCC fares better than both SCC and NCC.

Bobaljik (2012) argues, based on a *ABA generalization in adjectival suppletion, that the positive degree of an adjective is featurally properly contained in its comparative, and that the comparative is in turn featurally properly contained in its superlative. Concomitantly, Bobaljik also shows that there are several languages where the positive form is regularly a substring of the corresponding comparative form (e.g. Persian or English in Table 36), as well as several languages where the comparative form is a substring of the corresponding superlative form (e.g. Persian or Czech in Table 36). There are also languages where no surface containment is observed between positives and comparatives (Czech in Table 36), or between comparatives and superlatives (English in Table 36). Importantly, there seem to be no languages (in Bobaljik's sample) where the superlative form is a substring of the corresponding comparative, or where the comparative is a substring of the corresponding positive. Assuming Bobaljik's analysis of *ABA in adjectival suppletion to be correct, we might entertain the gen-

Table 37 Predictions about attested and unattested surface-containment patterns once SCC, WCC and NCC are combined with (10)

SURFACE CONTAINMENT PATTERN	SCC	WCC	NCC
the NOM form is a substring of the ACC form	possible	possible	possible
the NOM form is a substring of the DAT form	possible	possible	possible
the ACC form is a substring of the DAT form	possible	possible	possible
the ACC form is a substring of the NOM form	impossible	possible	possible
the DAT form is a substring of the NOM form	impossible	possible	possible
the DAT form is a substring of the ACC form	impossible	impossible	possible

eral hypothesis in (10), which essentially states that featural containment and surface containment may not contradict each other.[35]

(10) Given two feature sets F and F' such that $F \subset F'$, the string of exponents realizing F may form a substring of the string of exponents realizing F', but the string of exponents realizing F' may not be a substring of the string of exponents realizing F.

Coupled with the hypothesis in (10), the three case decompositions we have introduced so far make different predictions about the presence or absence of universal surface-containment asymmetries between nominative, accusative and dative. In the rest of the present section, we discuss the predictions in Table 37 against the empirical landscape. We argue that, once again, adopting SCC leads to predictions that are too strong, adopting NCC leads to predictions that are too weak, and adopting WCC leads to predictions that are just right.

Let us start with the relation between accusative and dative forms. Recall that both SCC and WCC, unlike NCC, hold that the accusative is featurally contained in the dative; so, assuming (10), they should both predict that there might be languages where accusative forms are regularly substrings of the corresponding dative forms, but not languages where dative forms are substrings of the corresponding accusatives. As far as we know, this appears to be true: while the literature reports the existence of several languages of the first type (Table 38), we do not know of any languages that clearly showcase dative forms that are substrings of the corresponding accusatives.

Since SCC posits featural containment between nominative and accusative, given (10), SCC predicts that there should not be any instances of accusative forms surface-contained in the corresponding nominatives. In other words, SCC would lead us to expect the attested surface-containment patterns between nominative, accusative and dative forms to be no different from the attested surface-containment patterns between positive, comparative and superlative as described by Bobaljik (2012). By contrast, WCC and NCC do not posit any featural containment between nominative

[35] In a theory that draws a distinction between null exponents and the absence of an exponent, it is not obvious what would be enforcing (10)—in particular, what would block the possibility that, e.g., F may be mapped onto an overt exponent while F' may be mapped onto a null exponent. One theoretical option would be to posit a constraint on null exponence to the effect that, if a feature set is mapped onto an overt exponent, none of its supersets may be mapped onto a null exponent.

Table 38 Surface containment and Case (Gippert 1987 [cf. Caha 2010: 42]; Smith et al. 2019: 1037)

		NOM	ACC	DAT
Kalderaš Romani 'brother'	SG	phral	phral-es	phral-es-kə
	PL	phral(-á)	phral-en	phral-en-gə
Tocharian B 'man'	SG	eṅkw-e	eṅkw-e-ṃ	eṅkw-e-ntse
	PL	eṅkw-i	eṅkw-e-ṃ	eṅkw-e-ṃ-ts

Table 39 Accusative forms surface-contained in nominative forms (Einarsson 1949: 33; Prauliņš 2012: 28)

		NOM	ACC	DAT
Icelandic 'horse'	SG	hest-ur	hest	hest-i
	PL	hest-a-r	hest-a	hest-um
Latvian 'cat'	SG	kaķ-i-s	kaķ-i	kaķ-i-m
	PL	kaķ-i	kaķ-us	kaķ-i-em

Table 40 Dative forms surface-contained in nominative forms (Einarsson 1949: 35; Braune and Heidermanns 2004: 109)

		NOM	ACC	DAT
Icelandic 'valley'	SG	dal-ur	dal	dal
	PL	dal-i-r	dal-i	döl-um
Gothic 'town'	SG	baúrg-s	baúrg	baúrg
	PL	baúrg-s	baúrg-s	baúrg-im

and accusative, and, thus, do not necessarily predict a universal surface-containment asymmetry between nominative and accusative forms. What are the relevant facts? While advocates of SCC have occasionally adduced in their favor the existence of languages where nominatives are substrings of the corresponding accusatives (e.g. Kalderaš Romani and Tocharian B in Table 38, again), the fact of the matter is that the reverse surface-containment pattern is also attested, at least within Indo-European (Table 39; cf. Zompì 2017: Sect. 3.3 on Gothic, and McFadden 2018: 10 on Icelandic). While this is unexpected under SCC, it is not under WCC or NCC.

Finally, under SCC, nominatives may be substrings of datives but not vice versa; by contrast, under either WCC or NCC, no prediction is made about the attested patterns of surface containment between nominatives and datives, since the two cases are not in a containment relation to each other. Here, too, SCC's predictions turn out to be too strong. Cases of nominatives being substrings of datives can be found in Table 38, but cases of datives being substrings of the corresponding nominatives may crucially also be found, as seen in Table 40.

Thus, to the extent that something like the hypothesis in (10) can be maintained, the facts appear to provide support for featural containment of the accusative within the dative, but not for featural containment of the nominative within the accusative—or, at least, no more support for NOM $\subset$ ACC or NOM $\subset$ DAT than they provide for ACC $\subset$ NOM and DAT $\subset$ NOM. This is precisely in line with what WCC would lead us to expect. The difference between the attested surface-containment patterns in adjectival morphology observed by Bobaljik (2012) and Case morphology can simply be seen as the result of two different ways of deriving *ABA: strict featural containment (as in SCC) for positive, comparative and superlative, but weak featural containment (i.e. WCC) for nominative, accusative and dative.

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