Towards a theory without adjacency: Hyper-contextual VI-rules

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1 Introduction

In determining under which configurations an element can condition allomorphy of another element, some type of adjacency has been appealed to in various proposals. Embick (2010) identifies two restrictions on allomorphy interactions: (i) cyclic domain restrictions, and (ii) linear adjacency restrictions (see also Arregi & Nevins 2012). That is, in order for an element to condition allomorphy on another element, one of the conditions is that they must be linearly adjacent to each other. Other work (Adger et al. 2003, Bobaljik 2012) has assumed that structural, rather than linear adjacency is what is necessary. What is common across both proposals is that it is necessary, but not sufficient for two elements to be in the same cyclic locality domain, but that, in addition, there are further conditions of adjacency which come into consideration.

In this paper, we assume, with Embick and others, that cyclic locality is indeed a restrictor on allomorphy (see also Bobaljik 2012, Moskal 2015b); however, our main focus is on the purported necessity of an adjacency condition to restrain allomorphy. We will argue that the only relevant consideration for the locality of allomorphy is *accessibility* (to be defined in section 2), and that adjacency is not universally relevant for the computation of allomorphic relations. Since we are making the claim that adjacency does not restrict allomorphy, it behoves us to show that previous data which have been appealed to in support of adjacency have independent explanations. The consideration will be mostly on cases of 'blocking' whereby allomorphy of a particular element A conditioned by element B appears to be blocked in the presence of some overt morpheme C.

(1) [A–B] [*B able to condition allomorphy of A*]

(2) [A–C–B] [*B unable to condition allomorphy of A due to intervening C*]

We show that these blocking effects are found in both lexical and functional material. In lexical material, considerations of accessibility independently prevent B conditioning allomorphy on A. The presence of element C is relevant only insofar as it pushes element B out of a configuration whereby it is accessible to element A; hence, these cases do not argue for any adjacency effects in allomorphy. The second type of blocking effect comes from functional items, where considerations of accessibility are irrelevant. Here, we show that the apparent blocking effects come from Vocabulary Insertion (VI)-rules that are hyper-contextual, defined as follows:

(3) A VI-rule that makes reference to multiple nodes in the structure.

These rules have the effect of blocking but do not grant a role to adjacency. In sum then, we make two claims. Firstly, adjacency is not a (universal) restrictor on allomorphy. Secondly, VI-rules can make reference to anything (and potentially everything) to a certain element, as long as the trigger is accessible, which is defined by cyclic locality.

In the following, we first briefly present the cyclic approach assumed here, which adopts Moskal (2015b) in which suppletion is constrained by an Accessibility Domain. Then, we turn to previous approaches that incorporate linearity (Embick 2010, Adger et al. 2003) or structural adjacency (Bobaljik 2012) (section 3). In section 4, we present conceptual as well as empirical problems for incorporating adjacency as a constraint on allomorphy, and, finally, in section 5 we offer an alternative analysis of purported adjacency effects.

2 Suppletion constrained by Accessibility

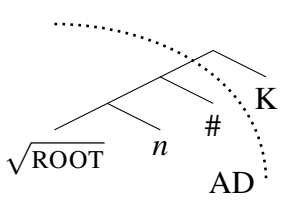
Working in Distributed Morphology (Halle & Marantz 1993), Moskal (2015b) formulates a version of cyclic locality that derives suppletion patterns in lexical material; specifically, she captures the observation that suppletion can be governed by nodes that are closer to the root but not those that are 'too far away' by contending that suppletion is constrained by accessibility of elements to the root. That is, not every node in the morphological word is able to govern suppletion of the root; rather, only certain nodes are accessible.

Accessibility to the root is limited to elements within the Accessibility Domain (AD) of the root, which is essentially defined as the highest category defining node above the root, and one node above that.[1] Thus, in the following abstract representation of a lexical noun,

[1]For reasons of space we do not fully explicate how the 'one node up' effect can be theoretically derived, but see Moskal (2015a,b) for extensive discussion. The idea in brief is not that every category defining node is cyclic, but *potentially* cyclic, with cyclic status afforded to the highest cyclic node in the domain. This idea is similar in spirit to recent syntactic proposals that phasehood is not an inherent property of certain

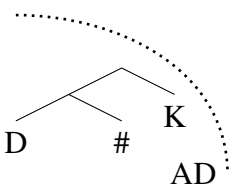
incorporating Greenberg's (1963) observation on the order of number and case (Universal 39), number information (represented by #) is accessible for suppletion, since it lies within the accessibility domain of the root but case information (K) is not. As such, Vocabulary Insertion (VI) rules making reference to case information are illegitimate items, since K is not accessible. This approach correctly captures the observation that whilst root-suppletion according to number information is seen prevalently in lexical nouns, root-suppletion for case is never attested, bar a few examples which can be shown to be lacking number (see Moskal 2015a,b).

(4)



There is an important distinction between functional and lexical items that needs to be addressed. Category-defining nodes are assumed to be cyclic (Embick 2010) and create an accessibility domain, which consists of the category-defining node and one node above (as in (4) above). However, functional items are commonly assumed to involve less structure (Postal 1969, Déchaine & Wiltschko 2002). Moskal argues that the smaller amount of structure is actually the absence of category-defining nodes in functional material. Thus, we expect that the Accessibility Domain in functional items is larger than in lexical items, given that there is no domain created low in the structure:[2]

(5)



This prediction is borne out, and we see that in functional items case information is accessible, and suppletion is seen frequently for case in functional items like pronouns (see also Smith et al. 2015).

projections, but rather the highest projection of a certain domain, see Bobaljik & Wurmbrand (2005), den Dikken (2007), Bošković (2014), Wurmbrand (2014) and references contained therein. Furthermore, see Newell (2008) on the relation between word-internal locality domains and phases.

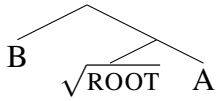
[2]Note that 'D' is only used as a label for a pronominal base here.

3 The role of adjacency in suppletion

Other work on locality restrictions on allomorphy proposes some form of adjacency condition in addition to cyclic locality. These approaches can be grouped into two separate approaches. Embick (2010) argues that there is a condition of linear adjacency, such that allomorphy can only be conditioned by elements that are linearly adjacent to each other, providing that cyclic locality is also met.[3] Specifically, he proposes the following condition:

(6) Contextual allomorphy is possible only with elements that are concatenated.

In the following abstract structure, both A and B, providing that they are accessible to the root, are able to govern root-suppletion, since they are linearly adjacent:

(7) 

Crucially, linear adjacency relies on the operation of pruning (Embick 2003, 2010), which eliminates nodes with null exponents.[4] Though in most cases Embick assumes that pruning takes place after VI, in the cases discussed here, pruning necessarily must take place prior to Vocabulary Insertion to avoid a look-ahead problem. Our cases deal with allomorphy of the root/base in the context of higher nodes. Given that VI is standardly assumed to proceed from the root outwards (Bobaljik 2000), then it follows that at the point the root undergoes VI, the phonological content of affixes (or lack of content, in the case of null morphemes) is not known. The look-ahead problem is that the grammar must know that a morpheme is null in order to prune it; however, the fact that it is null is not known at the point that the root/base undergoes VI. In other words, the exponent of the root is determined prior to the point that pruning happens. In order to account for this type of pruning in Latin, Embick (2010, 86) draws on "a general 'radical' Pruning rule that applies early in PF derivations [...], eliminating node[s] from the representation" prior to VI (cf. Embick & Halle in prep). Such a rule is a powerful addition to the toolkit of DM, and it is clear that a theory that does not have to rely on this type of radical pruning is to be preferred, all else being equal.

An anonymous reviewer points out that the look-ahead problem arises only under certain assumptions about the way that VI is structured, and that changing one or more of these assumptions can alleviate the problem. For instance, one could assume that linear

[3] It should be noted that Embick uses a different conception of cyclic locality as to that formulated above.

[4] Note that pruning is not obligatory for all nodes with null exponents; rather, Embick "posit[s] pruning rules where required" (Embick 2010, 59).

adjacency requirements are evaluated after affixes have undergone VI, and that pruning takes place before this. This could happen in at least two ways. Firstly, one could assume that linear adjacency serves as a kind of 'filter' on outputs (see Chomsky & Lasnik 1977 among others), which would mean that at the point in which linear adjacency becomes important, pruning of null-exponents has already taken place. Alternatively, one could assume that during VI, roots are first replaced by a phonologically unspecified index, which is replaced by the real exponent after affixes have undergone VI and null affixes pruned. Either of these approaches avoids the look-ahead problem. However, we are assuming the simplest possible form of VI, whereby it is simply an iterative operation that replaces morphosyntactic features with phonological exponents. Given that our theory can adhere to this simple conception, without the need to factor in anything more (considerations of accessibility and locality are independent questions), we contend that modifying assumptions about the nature of VI, must be shown to be independently necessary. Whereas the effects discussed in this paper (blocking, etc.) have been used to this effect, our approach handles these phenomena within the simple conception. Thus, we do not see the phenomena under discussion here as evidence for modifying VI away from its current formalisation.

A separate conception of adjacency is given by Bobaljik (2012) (see also Adger et al. 2003, who proposes that allomorphic relationships can be established between elements that are structurally adjacent. For Bobaljik, structural adjacency is motivated in his study of comparative and superlative suppletion. Specifically, he shows that in adjective-comparative-superlative triples, suppletion for the superlative is never seen without suppletion for the comparative. That is, whilst there can be ABB patterns (*good-better-best*), AAB patterns are not attested (**good-gooder-best*). Bobaljik argues at length that it is universally the case that the comparative is contained within the superlative:

(8) [[$\sqrt{\text{ROOT}}$ CMPR] SPRL]

Since the superlative is not structurally adjacent to the adjectival root, it is not able to condition suppletion of the root.[5] That is, in the following configuration, A can condition suppletion of the root but B cannot; even though B is *linearly* adjacent to the root, it is not *structurally* adjacent:

(9) [B [$\sqrt{\text{ROOT}}$ A]]

Thus, even in languages where the superlative and comparative morpheme differ in their being prefixes or suffixes (and so both are linearly adjacent to the root), we still see only ABB patterns, but not AAB.

[5]Unless the comparative mediates in forming a suppletive form, such as in ABC cases like Latin *bonus-melior-optimus*; see Bobaljik (2012) for discussion.

3.1 Blocking effects in lexical material

The strongest indication in favour of linear and/or structural adjacency being relevant for allomorphy comes from blocking effects that are apparently conditioned by adjacency. These effects can be divided into blocking in lexical material, and blocking in functional material. In this section we review the evidence from blocking effects, and how it, at first blush, seems to support a theory that incorporates adjacency as a restrictor on allomorphy. However, the reader should bear in mind that we will show them to come from separate considerations.

Kiowa Consider the following data from Kiowa (Adger et al. 2003) distributives:

(10) a. á- kˈúú
3.PL.AN -sit
'They sit.'

b. hɔ́n á- kóp -gɔ̂ɔ
NEG 3.PL.AN -sit -NEG
'They don't sit.'

In (10), we can see that the lexical verb root *k'úú* 'sit' undergoes suppletion conditioned by NEG: *kˈúú* is realised as *kóp* when NEG is present in the structure. However, when the distributive marker *yɔ́* is added to the structure, which, as shown in (11) is located between the verb and NEG, root-suppletion is blocked:[6]

(11)		[*v*	ROOT]	DISTR	NEG	
a.		á-	kˈúú			'They sit.'
b.		á-	kóp		gɔ̂ɔ	'They don't sit.'
c.		á-	kúú	yɔ́		'They sit about.'
d.		á-	kúú	yɔ́	gɔ̂ɔ	'They don't sit about.'
e.	*	á-	kóp	yɔ́	gɔ̂ɔ	'They don't sit about.'

Specifically, in (11d) NEG-driven root-suppletion is blocked and instead the elsewhere form of the root surfaces, *kúú.* Adger et al. (2003) argue that this is because the distributive morpheme intervenes between the verbal root and NEG.

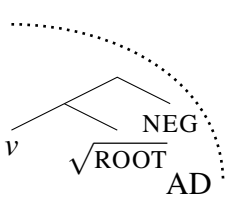
(12) [[[*v* $\sqrt{\text{SIT}}$] DISTR] NEG]

They argue that root allomorphy is necessarily conditioned by adjacency, and thus the root cannot supplete for NEG due to the intervention of distributive *yɔ́.*

[6] Note that agreement features are located on *v*.

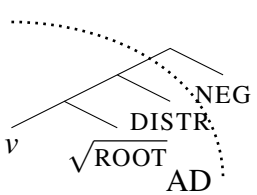
However, this type of blocking is exactly what we predict by virtue of the Accessibility Domain, without recourse to adjacency. The fact that we observe suppletion in the context of NEG in (11b) is predicted, since NEG lies one node above category-defining *v*, and thus falls within the Accessibility Domain:

(13)



In contrast, in (11d), NEG is no longer accessible since the final node within the Accessibility Domain is DISTR:

(14)



Thus, in accordance with suppletion being constrained by the Accessibility Domain, suppletion for NEG no longer is a possibility in the presence of the distributive. Crucially, this is not a matter of adjacency, but rather the fact that only one node above the category-defining node is accessible.

Note that this logic holds for any lexical item.[7] Thus, the claim of Adger et al. (2003) that roots can only undergo suppletion when the trigger is adjacent follows directly from the Accessibility Domain. It is not because roots lack (syntactic) agreement features, as is their explanation, but rather because root-suppletion is constrained by what nodes are accessible to govern allomorphy.[8,9]

[7]Another linearity violation of lexical material is observed in Lak (Radkevich 2014), where the root for 'moon/month' suppletes in the context of (ergative) case, across a plural morpheme *-dald*:

(i)

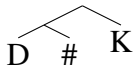
	SG	PL
ABS	barz	barz-ru
	'moon/month'	'moon/month-PL'
ERG	zur-ul	zur-dald-il
	'moon/month-ERG'	'moon/month-PL-ERG'

[8]Note that according to the Accessibility Domain it is irrelevant whether the distributive morpheme is null or not. Under a purely linear approach to adjacency, in which null allomorphs are subject to optional pruning (Embick 2003, 2010), suppletion should be possible in this scenario.

[9]An anonymous reviewer points out that adjacency is motivated by cases outside of suppletion as well, for example zero-causatives (i) and exocentric compounds (ii):

3.2 Blocking effects in functional material

Turning to adjacency with regard to suppletion patterns in functional material such as pronouns, we make different predictions if we adopt Moskal's (2015) proposal. Specifically, in the absence of a category-defining node in pronouns, no Accessibility Domain is formed low within the functional structure, thus allowing for a wider range of elements to condition suppletion. Thus, (functional) pronouns provide a testing ground as to the question whether, in addition to cyclic constraints, adjacency plays a role in delimiting allomorphy. In the following, we again follow Greenberg's Universal 39 and number is located lower than case:

(15) 

Focusing on linear adjacency first, on the hypothesis that it is an allomorphy restrictor, we expect that overt number morphology blocks case-driven suppletion if both # and K are suffixal (16) or prefixal (17), since in those configurations, both of which derive from (15), D and K will not be linearly adjacent. A structural adjacency also rules out case-driven suppletion in both (16) and (17).

(16) D-#-K

(17) K-#-D

Khakas The first of two cases of blocking effects we discuss comes from Khakas third person pronouns:[10]

(i) The shoe-shine boy shined/*shone the shoes.

(ii) Toronto Maple Leafs/*Toronto Maple Leaves

The blocking of irregular forms in zero-causatives follows from our account on the assumption that the CAUS morpheme is a head that lies between the category defining *v* and T (Harley 2008). Thus, CAUS is one node above the category defining node, and prevents T from being in the AD; hence *shone* is disallowed in (i):

(iii) [[[$\sqrt{\text{SHINE}}$ *v*] CAUS] T]

As to exocentric compounds, we wish to remain agnostic -largely for reasons of space- as to whether the current approach offers anything to explain why irregular forms should be 'blocked' there. This is an issue that is certainly worthy of fuller attention, and we leave it to future research.

[10]Data from the Surrey Morphology Group database (http://www.smg.surrey.ac.uk/suppletion/).

(18)

	SG	PL
NOM	ol	olar
ACC	anɨ	olarnɨ
DAT	aɣaa	olarɣa
LOC	ande	olarda
LAT	aniŋzar	olarzar
ABL	anəŋ	olardaŋ / olarnaŋ

In the singular forms of the pronouns, there is suppletion for case, whereby the nominative form differs from all the other cases. However, in (18), third person pronouns in Khakas have an overt plural exponent *-lar*, and we see that suppletion seems to be blocked in its presence, the root reverting to the elsewhere realisation *ol* (with degemination).

Thus, we can formulate the following VI-rules for Khakas, where * indicates linear adjacency (Embick 2010), and K stands for non-nominative case (see Smith et al. 2015 for further discussion on (complex) case suppletion, we turn to this question in more detail below):

(19) a. $[3] \Leftrightarrow$ an / _*K
b. $[3] \Leftrightarrow$ ol

The more specific VI-rule, (19a), applies when case (excluding the nominative) is linearly adjacent to D; otherwise, the elsewhere form arises. Thus, when # intervenes between the base and K the specific rule is inapplicable and default *ol* surfaces.

The data from Khakas seem like a compelling argument in favour of a linear adjacency blocking effect.[11] Under a view that relies exclusively on the Accessibility Domain, K is still within the AD of the base, and so the blocking effect of number is unexpected.

Kayardild In Kayardild (Evans 1995), we see a similar pattern: in the oblique singular form of first person pronouns, the base *nga* undergoes suppletion to *ngiju*. However, as seen in the other oblique forms for the dual and plural, this suppletive form does not arise, presumably due to the intervening presence of the overtly realised dual and plural morphemes (Evans 1995, 202).

(20)

	SG	DU	PL
NOM	nga-da	nga-rr-a	nga-l-da
OBL	ngiju-wa	nga-rr(a)-wa	nga-la-wa

[11] This blocking effect can be derived under structural adjacency only if we assume that singular is the absence of number.

Again, under a linearity account, we can formulate the VI-rules in (21), where we see that the absence of an exponent for the singular allows case to become linearly adjacent to the base and condition suppletion.

(21) [1] ⇔ ngiju / _*OBL
[1] ⇔ nga

If we do not allow for VI-rules to refer to linear adjacency, we expect rules such as (22), and incorrectly predict that it should apply irrespective of the overt or covert realisation of the number morphemes:

(22) [1] ⇔ ngiju / _] OBL]
[1] ⇔ nga

As mentioned above, in contrast to structural adjacency, the linear adjacency hypothesis predicts that although case suppletion should not be possible across an intervening number node, this only holds if case and number are both suffixal or both prefixal. If they differ in this regard and one is a prefix and the other a suffix, then both are linearly but not structurally adjacent to the base, and we predict that under linear adjacency suppletion for either number or case should become possible, whilst under structural adjacency case-driven suppletion is still ruled out.

Qafar With this in mind, consider Qafar first person pronouns (Hayward 1998):

(23)

	SG	PL	
NOM	anu	n-anu	
ACC	y-oo	n-y-oo	> nee
GEN	y-i	n-y-i	> ni

On the decomposition assumed here (see Moskal 2015a for discussion), we observe allomorphy between *anu* and *y*. Furthermore, number is prefixal, as evidenced by the *n*-prefix in the plural forms.[12] Though there is no overt case morphology in Qafar pronouns, Hayward states that in lexical nouns "[o]vert nominative marking occurs only with vowel-final masculine nouns, in which a suffix *-i* replaces the terminal vowel" (Hayward 1998, 629). Thus, one could argue that case in pronouns is suffixal, and linearly adjacent to the base:

(24) #-D-K

[12] With a /yV/ sequence resulting in a front vowel in pronouns.

Assuming linear adjacency as a restrictor on allomorphy, then we see that case is able to cause suppletion of the base; the VI-rules would be the following:

(25)
[1]	⇔	y / _*K
[1]	⇔	anu
PL	⇔	n-
[ACC]	⇔	-oo
[GEN]	⇔	-i

Note that this is not in line with a structural adjacency account, since under a structural account case is still further out than number. These data support linearity insofar that we see case being brought close enough to the root to condition allomorphy, but is incompatible with the structural adjacency account.

It should be pointed out here that these data do not cause a problem for an Accessibility approach, since we are dealing with functional material, and the lack of a category defining node brings K into the AD of the base, and we can assume the same set of VI-rules in (25), without a linear restriction:

(26)
[1]	⇔	y / _] K]
[1]	⇔	anu
PL	⇔	n-
[ACC]	⇔	-oo
[GEN]	⇔	-i

Here we have reviewed evidence that seems to favour adjacency as a restrictor on allomorphy. In lexical material, we have further shown that blocking also arises through considerations of accessibility, not just adjacency. Functional items on the other hand seem to show much stronger evidence for an adjacency condition, as these blocking effects cannot be handled by accessibility. In the next section we show that this cannot be a universal constraint on allomorphy, based on data from Basque and Tamil.

4 Against adjacency

As mentioned above, Embick (2010) assumes linearity in addition to cyclic locality. However, we saw that from a theoretical perspective, it would be more parsimonious to have a single restrictor of allomorphy, rather than both cyclic and linear locality. Moreover, taking into account that the type of linear adjacency discussed here necessarily relies on radical pruning, there are serious conceptual problems with incorporating linearity as a restrictor on allomorphy.

As a final argument against adjacency as a universal restrictor on allomorphy, we discuss two cases that are empirical problems for approaches that assume adjacency.

Basque Firstly, we find a case of non-linearly conditioned root-suppletion in Basque (Bobaljik 2012, 156-8); consider the suppletive adjectives *asko* 'much' and *on* 'good', which show suppletion in the context of the comparative:

(27)

	POS	CMPR
much	asko	gehi-ago
good	on	hobe

Crucially, however, in the presence of the morpheme *-xe* 'a little more X', which is located between the root and the comparative, we still see the suppletive variants occurring (third column):

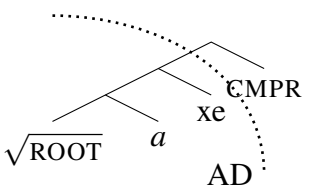
(28)

	POS	CMPR	'a little more much/good'
much	asko	gehi-ago	gehi-xe-ago
good	on	hobe	hobe-xe-ago

In *gehi-xe-ago* and *hobe-xe-ago*, we see a clear instance of a linearity violation: comparative-driven root-suppletion across *xe*.

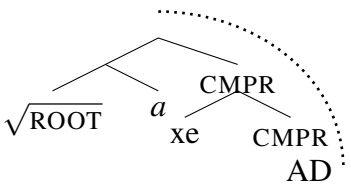
In addition, note that on the assumption that *xe* is a separate projection, we run into a problem for the structural adjacency and the Accessibility Domain approach as well: the comparative is too far from the root to condition root-suppletion:

(29)



However, Bobaljik (2012), drawing on semantic considerations, argues that structure of this construction is as follows (adapted from Bobaljik 2012, 157):

(30)



In (30), we see that the comparative falls within the Accessibility Domain by virtue of being one node above category-defining *a*. Nonetheless, we see that the trigger (comparative) is not linearly adjacent to the target (root). Note that Bobaljik (2012) does not represent category-defining *a*; thus, allowing the comparative is structurally adjacent to the root. In this way, we see a case of a linearity violation but not a structural adjacency violation.

Tamil Secondly, the most important case comes from Tamil (Schiffman 1999). In (31), we see case-driven suppletion: in the singular, the pronoun alternates between *naan* in the nominative, but *en* in all other cases. Crucially, this same suppletive pattern is seen in the plural form, with a clear plural marker, the suffix *-(n)ga(l)*:

(31)

	SG	PL
NOM	naan	naan-ga
OBL	en	en-ga
DAT	en-akku	en-gal-ukku

Indeed, the same pattern holds in second person pronouns, given in (32):

(32)

	SG	PL
NOM	nii	nii-nga
OBL	on	on-ga
DAT	on-akku	on-gal-ukku

Note that the presence of an overt plural in both the nominative and the oblique means that no matter which form is taken as the non-suppletive one, linearity is violated. Indeed, in the dative forms there is a clear dative suffix *-ukku*, which lies outside of the plural morpheme *-gal*.

A theory in which adjacency, either structural or linear, is taken as a universal restrictor on allomorphy cannot account for this data. The problem is that *-(n)ga(l)* clearly forms the number morphology in the form, yet we consistently observe suppletion across this morpheme for both oblique and dative case. For the Accessibility Domain, no such problem exists: even across the intervening number morpheme, case is accessible since we are dealing with functional items without a category-defining node. Thus, K lies within the same Accessibility Domain as the base, and we can formulate the following VI-rules, where K is again non-nominative case:

(33)

[1]	⇔	en / _] K]
[2]	⇔	on / _] K]
[1]	⇔	naan
[2]	⇔	nii
PL	⇔	-(n)ga(l)
SG	⇔	-∅
[OBL]	⇔	-∅
[DAT]	⇔	-ukku

In sum, there clearly is an overt number morpheme in the Tamil paradigm, which results in the case morpheme not being adjacent to the base, yet it is still able to condition suppletion. Whilst there is no clear basis for this under an approach reliant on some form of adjacency, on an approach where only accessibility is relevant for suppletion, there is no problem.

5 Towards a theory without adjacency

Having shown conceptual problems as well as the empirical issue of in particular Tamil first and second person pronouns, we reject adjacency as a universal additional restrictor on allomorphy. We have already seen that apparent adjacency effects in lexical material fall out by and large from considerations of accessibility (see the discussion of Kiowa above). However, not recognising adjacency as a restrictor on suppletion leaves us with formalising the blocking effects in functional material in Kayardild and Khakas. Here, we will show that we can account for the blocking effects previously ascribed to adjacency by assuming hyper-contextual VI-rules. These rules make reference to more than one node, which jointly form the context for VI.[13]

In the following, we assume that suppletion in the context of Z occurs when Z is sufficiently local to the suppletive element. By virtue of the Accessibility Domain, this means that Z must be *accessible* to the suppletive element (and so in the same AD). Thus, there is no locality encoded in the rule itself, but rather locality is independent, per the Accessibility Domain. Following Bobaljik (2000), we assume that VI proceeds from the

[13]Hyper-contextual VI-rules are reminiscent of span-conditioned allomorphy, which has been appealed to in various recent work, particularly in the nanosyntax framework (Svenonius 2012, Bye & Svenonius 2012, Merchant 2015). However, it should be noted that we are still maintaining that these rules are constrained by accessibility restrictions, i.e. the Accessibility Domain, and we do not see a natural restrictor in the cited spanning works. Note that Tamil also provides evidence against the *Spanning Insertion Hypothesis* of Merchant (2015), which claims that only contiguous spans of nodes can factor into VI. In Tamil, the number node is ignored in the computation of the base, since the base inflects for case, irrespective of whether the form is singular or plural.

root outwards. Thus, all the contexts Z here make reference to morphosyntactic features that are accessible to the root/base.

Kayardild Recall that evidence that linearity restricts suppletion came from blocking effects, whereby an intervening morpheme blocks suppletion that is otherwise observed. The effect is observed clearly in Kayardild, data repeated from above:

(34)

	SG	DU	PL
NOM	nga-da	nga-rr-a	nga-l-da
OBL	ngiju-wa	nga-rr(a)-wa	nga-la-wa

Under a linearity account, in order to capture the Kayardild blocking effect, one must assume that SG is pruned in the context of oblique in order to ensure that (oblique) case is linearly adjacent to the base.

Under an accessibility-only approach, we can model blocking effects by proposing that certain VI-rules are hyper-contextual. That is, some VI-rules make reference not to a single node, but a combination of two nodes, which then can be a context for suppletion. Concretely, we assume that *nga* is the elsewhere root, and that the suppletive variant *ngiju* arises in the context of the singular *and* the oblique. Upon including hyper-contextual VI-rules, (35) shows the relevant Kayardild VI-rules:

(35)

[1]	⇔	ngiju / _] SG] OBL]
[1]	⇔	nga
DU	⇔	rr
PL	⇔	l(a)
NOM	⇔	(d)a
OBL	⇔	wa

Note that such hyper-contextual rules are not only possible but actually expected to exist. As mentioned above, VI-rules that make reference to case in lexical nouns are not at all ruled out by the grammar; rather, the reason that we so rarely observe them is that in canonical lexical nouns reference to case is uninterpretable, with case falling outside the Accessibility Domain. Thus, there is nothing in the operation of VI that would prevent hyper-contextual rules from existing. Indeed, the only restriction on the interpretation of VI-rules comes from the AD. In pronouns, both number and case are accessible, and, as such, interpretable, resulting in a hyper-contextual rule such as [1] ⇔ ngiju / _] SG] OBL] being a legitimate grammatical item. Thus, we see that positing hyper-contextual rules allow us to account for blocking effects.

Khakas Turning to the other case of blocking that seems caused by linearity, recall the data from Khakas, repeated from above:

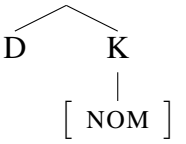
(36)

	SG	PL
NOM	ol	olar
ACC	anɨ	olarnɨ
DAT	aɣaa	olarɣa
LOC	ande	olarda
LAT	anɨŋzar	olarzar
ABL	anəŋ	olardaŋ / olarnaŋ

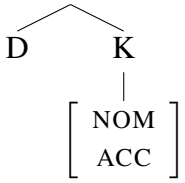
Under a linearity approach, the analysis for Khakas seems straightforward: a suppletive root *an* appears whenever a non-nominative case is linearly adjacent to the root, or, assuming that the singular node is pruned, when K is structurally adjacent. When the plural morpheme *-lar* intervenes and blocks either type of adjacency, this results in the case suffix no longer being linearly adjacent to the base, and suppletion is not observed; rather, the elsewhere form *ol* surfaces.

An analysis that makes use of hyper-contextual rules at first glance might seem to miss a generalisation; that is, the blocking effects in Khakas are pervasive across all non-nominative cases, thus making these hyper-contextual rules a curious accident. However, if we take into account the decomposition of case argued for in Smith et al. (2015), we are led to an analysis like the one offered for the Kayardild paradigm: we only need a single hyper-contextual rule that gives rise to the blocking facts. In Smith et al. (2015), it is shown that ABB case suppletion patterns result from the same VI-rule, namely a rule that changes the form of a base in the context of a marked case (in the sense of Marantz 1991); that is, cases are in a containment relation such that dependent cases contain unmarked cases, and oblique cases contain both.

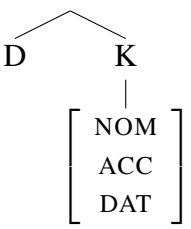
(37)



(38)



(39)



Thus, a specific VI-rule that makes reference to a less complex case will necessarily lead more complex cases to take on that suppletive base. If we apply this to the Khakas third person pronoun pattern, we can capture the blocking effects with the following hyper-contextual VI-rule, where K is non-nominative case:

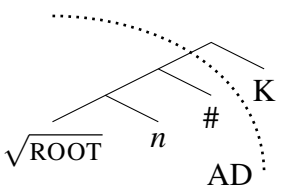
(40) [3] ⇔ an / _] SG] K]
[3] ⇔ ol

This rule ensures that all non-nominative cases will pattern the same (see Smith et al. 2015 for details). Crucial for the discussion here, this results in what appears to be a blocking effect: [3] ⇔ an / _] SG] K] is more specific for all cases other than NOM when they are also singular. In contrast, in the plural, the hyper-contextual rule in (40) is inapplicable, resulting in the base reverting to elsewhere *ol*.

In sum, we have seen that the poster-child for assuming adjacency, blocking, is able to be handled using only the machinery that is required for an Accessibility Domain approach. Importantly, we can see in the analyses of Kayardild and Khakas that hyper-contextual rules account for blocking effects that seem to stem from linearity considerations. However, it should be emphasised that such hyper-contextual rules are still subject to accessibility considerations by requiring to make reference to material that falls within the AD. Thus, whilst hyper-contextual VI-rules for lexical items that make reference can be formulated, they will not be interpretable since the case node is inaccessible to the root by lying outside of the AD. Case-suppletion will still be ruled out for lexical nouns. (41) can be formulated as a rule, but since K lies outside the AD (42), the rule will never be interpretable as K will never be visible.

(41) $\sqrt{\text{ROOT}}$ ⇔ Y / _] #] K]

(42)



Finally, a note is in order on the null exponence of number in both Kayardild and Khakas. In the current account, where adjacency effects are epiphenomenal, it is an accident that the singular morpheme is null in both cases that we have proposed hyper-contextual rules. Thus, we predict that we should see a situation where we have a hyper-contextual rule that makes reference to a (value of a) node that falls within the AD and is closer to the base, and a rule that realises this same (value of a) node overtly. We can schematically represent this by the following VI-rules, where *a* and *b* are overt exponents and with the relevant component X in boldface:

(43) D ⇔ a / _] **X**] Y]
X ⇔ b

More concretely, we predict a hypothetical language Khakas' with an overt singular exponent, here *-pe*:

(44)

	SG	PL	
NOM	ol-pe	ol-lar	*Hypothetical language*
ACC	an-pe-nɨ	ol-lar-nɨ	

The relevant VI-rules would crucially include a hyper-contextual rule that makes reference to the closest element, SG, which is also realised overtly:

(45) D ⇔ an / _] SG] K]
D ⇔ ol
SG ⇔ -pe
PL ⇔ -lar
ACC ⇔ -nɨ

Since singular is often not expressed overtly, we might also want to turn to another predicted situation: we also expect to see a language containing a hyper-contextual rule with reference to a plural which is realised overtly, hypothetical Khakas":

(46)

	SG	PL	
NOM	ol	ol-lar	*Hypothetical language*
ACC	ol-nɨ	an-lar-nɨ	

The relevant VI-rules would include a hyper-contextual rule with reference to the closest element, PL, which is realised overtly:

(47) D ⇔ an / _] PL] K]
D ⇔ ol
PL ⇔ -lar
ACC ⇔ -nɨ

These types of languages are predicted to be possible if we assume hyper-contextual VI-rules, limited by the Accessibility Domain. We do not have at present examples of such languages, but we leave them here as an open conjecture for future research to uncover. In sum, hyper-contextual VI-rules are a logical possibility in a system which assumes cyclic locality as the sole delimiter of contextual allomorphy triggers, and easily accounts for the data from Basque and Tamil.

Though it remains an empirical issue to find languages showing the predicted behaviour, in case they are truly unattested, though it clearly cannot be universal, adjacency may well be a language-specific restriction. That is, there may be cross-linguistic variation as to whether languages incorporate adjacency as an additional restrictor. Indeed, Bobaljik (2015) also rejects a simple universal adjacency condition, and, following ideas in Calabrese (2005) and Nevins (2010) (see also Moskal 2014), he suggests that languages display cross-linguistic variation of three types of 'relativised' adjacency: (i) certain languages allow for all intervening nodes to block suppletion relations (absolute adjacency); (ii) certain languages allow for marked intervening nodes to block suppletion relations (plural would block, but singular not); and (iii) in certain languages intervening nodes never block suppletion relations (no adjacency condition).[14] There is room within our proposal to incorporate some instances of adjacency in certain cases, where necessary, yet we leave it to future research whether we need to superimpose (relativised) adjacency.

6 Conclusion

Throughout this paper, we have considered the implications of incorporating adjacency as a universal restrictor on suppletion. Having shown that adjacency suffers from serious drawbacks, we raised the question whether adjacency can be removed from the theory in favour of an accessibility-only hypothesis. Given that accessibility is independently required in the grammar, a theory where all effects result from accessibility is a clear bonus. We showed that in addition to the conceptual simplifications afforded by an accessibility-only hypothesis, there are also empirical challenges to adjacency that force us to adopt the accessibility-only hypothesis. Furthermore, adjacency restrictions have traditionally been appealed to in order to explain blocking effects, but we have shown that though blocking effects are seen, they can be explained to without adjacency effects by including hyper-contextual VI-rules. Future work will bear on the question of whether all blocking effects of this type can be captured by appealing to such rules.

[14]Note that throughout this paper we have taken the strong position that adjacency (linear or structural) plays no role in allomorphy and shown that in many cases, purported adjacency effects stem from elsewhere. We are not however denying that linear relations can play a role in allomorphy - see Arregi & Nevins (2012) and references therein for evidence from Basque and Romance clitic systems that the position of a clitic relative to T has an effect on its surface form - rather we are saying that adjacency is not a *universal* restrictor on allomorphy, *contra* previous work.

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