# DIRECTIONALITY OF ALLOMORPHY: A REPLY TO CARSTAIRS-MCCARTHY

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## 1 Introduction

Carstairs-McCarthy (2001) proposes a theory of directionality in grammatically conditioned allomorphy based on the idea of ancestry in word structure and purporting to derive the following empirical claim:

(1) Grammatical allomorphy may be inwardly sensitive to particular features of a node in a morphological structure, or to the category of the whole node; however, it cannot be outwardly sensitive to particular features of a node.

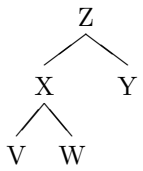
This approach aims to improve on Bobaljik (2000), which differs empirically in two respects: in outwardly sensitive conditioning, it predicts no distinction between particular features of a node and the category of the node itself; and it predicts the non-existence of inwardly sensitive grammatical conditioning.[1] This squib shows that Carstairs-McCarthy's system is, in fact, no improvement on Bobaljik's, either empirically or theoretically.

## 2 Outwards Sensitivity: features vs. categories

Carstairs-McCarthy's first claim is that allomorphy cannot be outwardly sensitive to particular features of a node, but only to the category of the node itself. He derives this claim by assuming that words are structured into a tree-like geometry and that allomorphy is sensitive only to what he calls *ancestry* (basically dominance) relations in a tree like (2):

[1] Bobaljik (2000) allows inwards sensitivity for class (i.e., lexical not grammatical) features.

(2)

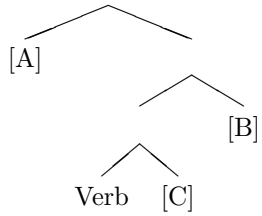



W is dominated by Z but not Y, so W can be outwardly sensitive to Z but not Y. On the assumption, addressed below, that Z is the categorial projection of Y, W will be sensitive to Y's category, not to its exact specification. So, if Y is [+past], then W could be sensitive to Z = Tense, taking a different form if Z (and Y) were absent. Carstairs-McCarthy argues that this is the correct generalisation based on Hungarian and Itelmen. We find neither argument convincing.

The argument from Hungarian is based on the plural, realised as *-a-i* on possessed nouns, *-ok* elsewhere. Carstairs-McCarthy observes that this allomorphy is sensitive to the presence or absence of the category Possessive, not to features of the possessor. He points out that his theory predicts the non-existence of a language just like Hungarian but with plural allomorphy outwardly sensitive to individual $\varphi$-features of the possessor. Bobaljik's system, however, allows such a language and so, he concludes, must be wrong. This is a simple fallacy of logic, however. A theory that predicts non-existence of $x$ is not rendered true by finding a language not exhibiting $x$. Hungarian is irrelevant.

Bobaljik's system allows sensitivity to individual features for the simple reason that Itelmen, the language in which Bobaljik is interested, seems to exemplify this. Bobaljik shows that Itelmen verbs are structured as below.

(3)




C, a class affix, is outwardly sensitive to individual $\varphi$-features of both A and B, and B, to $\varphi$-features of A.

For Carstairs-McCarthy to retain the generalisation cited above, he needs principled reasons to ignore Itelmen. To that end, he offers two observations, one for the C position, one for B.

> The sensitivity exhibited at C is not sensitivity in the realisation of a morphosyntactic property (2nd Person, say); rather, it is sensitivity in the realisation of an arbitrary lexical property (membership of inflectional Class II). The allomorphy exhibited at C is therefore outside the scope of any theory specifically concerned with the realisation of inflectional properties, ... (232)

However, this attempted defusing of the counterexample is not successful, since what it does is simply make the claim that another theory than that offered by Carstairs-McCarthy should deal with the realisation of class morphology. But there is no reason to assume this, and, in fact, general considerations of parsimony favour the opposite position, that the mechanisms responsible for realising allomorphy are the same for class and inflectional morphology.

Carstairs-McCarthy makes a second observation about the B position.

> [T]he only putative object agreement property at B which is sensitive to material at A is the 3rd Person; ... What occupies position B in '3rd Person object' forms is not a realisation of the person of the object but rather a discontinuous realisation (along with the prefix at A) of the person of the subject... (232)

However, this proposal is weak in the absence of a theory that gives the mechanism underlying such 'discontinuous realisation'; otherwise the term means little. Bobaljik's theory gives us exactly such a mechanism via the theory of allomorphy given by Vocabulary Insertion in Distributed Morphology, and this theory correctly predicts the form of the various morphemes in Itelmen. In the absence of an alternative mechanism for implementing the intuition behind 'discontinuous realisation' the Itelmen case stands as a counterexample to Carstairs-McCarthy's approach.

Lastly, Carstairs-McCarthy's proposal is stipulative in two ways. First, ancestry's role in conditioning does not follow from anything (why is c-command, or m-command, not the relevant notion?). Rather, ancestry is adopted as it seemingly gets the facts right. This means, contrary to his asserted aim, that Carstairs-McCarthy is offering a generalisation, not an explanation. Second, since Chomsky (1965), syntactic categories have been regarded as bundles of syntactic features, not simple atomic categories. Category labels often used by syntacticians are mere abbreviations for these bundles. Accordingly, it is impossible to make the distinction that Carstairs-McCarthy makes, without stipulating that category features only are visible on non-terminal nodes. Such stipulations rob Carstairs-McCarthy's system of explanatory value.

# 3 Inwards Sensitivity and cyclic insertion

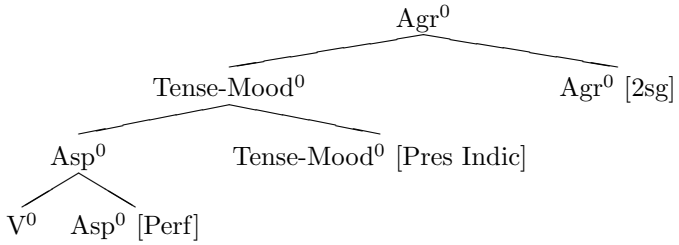
Carstairs-McCarthy's second claim is that allomorphy is inwardly sensitive to categories and features. This contrasts with Bobaljik's system, where such sensitivity is ruled out in principle, since vocabulary insertion replaces the syntactic feature bundle and operates root-out. So, 'looking inwards' reveals only phonological, not syntactic, material.

Carstairs-McCarthy provides an example from Latin where we see apparent inwardly sensitive allomorphy. The focus is on the exponent of second person singular agreement in a variety of perfective verb forms: *-istī* and *-s*. Only in the present indicative perfective do we find *-istī*. Elsewhere, we find *-s*, as in present and past perfective subjunctive, *amāueris* and *amāuissēs*. The issue is what and where the conditioner of the allomorphy is.

Carstairs-McCarthy claims that the conditioner is the present perfective, for two reasons. First, *-istī* occurs only in the present perfective. Second, *-istī* is not phonologically conditioned (say by *-u*), as it occurs with all exponents of the

present perfective (not a phonologically natural class; 233). Given Carstairs-McCarthy structure for the verb (235), the problem for Bobaljik lies with cyclic root-out vocabulary insertion: when [2sg] is targeted for vocabulary insertion, [Perf], already realised (say by *-u*), is no longer present to condition allomorphy.

(4)

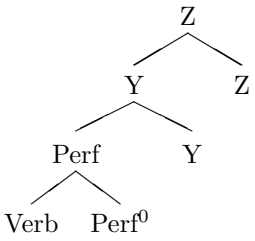



Accounting for this, Carstairs-McCarthy observes that the present perfective affects not just [2sg] but imposes a *screeveshape*, or whole paradigm of agreement affixes, on the verb. Technically, [Perf] marks the mother Agr$^0$ with a screeveshape that is visible at the daughter node Agr$^0$ [2sg] when targeted for vocabulary insertion. (The mediating role of the category Agr$^0$ seems conceptually natural as perfective affects agreement across all person-number combinations, at what one could call the categorial level. This elegance is undone, though, by the observation made in the previous section, that category itself is an unnatural concept. The features present on the Agr node include $\phi$-features, except by stipulation.)

The proposed solution suffers from the deficiency that it is unable to explain the very language it was proposed for. The correct generalisation about *-istī* is not that it is the exponent of [2sg] in the *present* perfective; it is the exponent of [2sg] in the perfective *tout court*. The crucial fact is that *-istī* is always adjacent to the exponent of perfective. The moment anything intervenes between the two, as in the perfective subjunctives *amāueris* and *amāuissēs*, [2sg] is realised as *-s*, which the present *amās* and the imperfective future indicative *amābis* reveal as the general default for [2sg]. Nothing in the perfective subjunctive cases should block Perfective from imposing its screeveshape on Agr$^0$, yielding **amāueristī* and **amāuissēstī*. Carstairs-McCarthy does state that he will ignore locality in his investigation; however, does so at the cost of ignoring crucial facts that cannot later be incorporated into his analysis.

Bobaljik's account, by contrast, requires only minimal alteration to capture this data. Recall that Bobaljik's tree lacked non-terminal node labels. We follow Adger, Béjar & Harbour (2001) in taking branching nodes to be labelled in the morphology just as in the syntax. So, even after Perf$^0$ is replaced by a vocabulary item, its mother maintains its feature specification. Adger, Béjar & Harbour further argue that conditioning for allomorphy is subject to a strict locality condition such that the mother Perf can condition Agreement if, and only if, they are sisters, as is illustrated by the tree and vocabulary items below.

(5) [2sg] $\leftrightarrow$ *-istī* | [Perf] ___
[2sg] $\leftrightarrow$ *-s*




The context for insertion of *-istī* is satisfied only at Y, guaranteeing adjacency of [Perf] and *-istī*. [2sg] is realised as *-s* if at a higher node, e.g., Z, as in *amāueris*, or if Perf is absent, as in *amās*. This system maintains the cyclic root-out insertion advocated by Bobaljik, with no new technology such as screeveshapes.

# 4 Conclusion

The empirical and theoretical arguments for the theory of allomorphy advocated by Carstairs-McCarthy are inadequate to motivate more than a minor modification to Bobaljik's model of grammatically conditioned allomorphy directionally constrained by root-out cyclic vocabulary insertion.

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