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THE THEORY OF MORPHOLOGICAL CONTROL*

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In this paper I will outline a theory about the way in which morphological elements may locally control abstract, i.e. not phonologically realized, minor positions, and apply the theory, as an example, to certain problems in Quechua grammar. After some general observations, I will give a schematic representation of some of the possible features of a theory of morphological control (in section 1). Section 2 is devoted to a discussion of three aspects of Quechua grammar, notably tense complementizers, Case, and auxiliaries, in the light of a theory of morphological control. In section 3 I return to a general discussion of the theory.

One of the characteristic types of moves in the theory of generative grammar has been the postulation of abstract structure, concomitant with the formulation of a set of constraints, essentially defining the learnability of the abstract structure for the child. We may distinguish between the 'normal' case and a series of special cases. The normal case is lexical insertion: a phrase structure category dominating a phonetic matrix specified by the lexicon of a language. Special cases include:

(a) Non-insertion of NP, accounted for in the theory of binding in one of its variants (cf. Chomsky, 1979, 1980, and much other work);
(b) Non-insertion of gapped elements, accounted for in the theory of gapping (Neijt, 1979);

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(c) Non-insertion of verb phrases, accounted for in the theory of VP interpretation. (Williams, 1977)

Here I argue that there is a fourth case of non-insertion:

(d) Non-insertion of lexical material in minor positions, which are then controlled by morphological material elsewhere.

Thus turning to the outlines of a theory accounting for this special case in section 1, I will first sketch some of the original motivation for such a theory.

In the study of polysynthetic suffixing languages a frequent analytical problem has been the relation between a complex morphology and the syntactic structure. One was faced with sentences with few but very long words. An easy solution to this problem has been to assume that in some sense these language possessed syntaxes similar to those the more familiar Indo-European languages and that many affixes in these languages are base-generated as syntactic categories (e.g. complementizers, postpositions, case markers, auxiliaries). In fact, these types of proposals had the added attraction of being in line with the lexical decomposition theory which characterized many variants of 'generative semantics'. The main problem of all these proposals is that often they don't do justice to the morphology of the languages involved. The independent generation analysis, as we may call it, has to assume that the minor elements, after being separately generated, are obligatorily cliticized or phonologically attached to an adjacent lexical element. In many cases it is possible, however, to show that the supposedly attached elements in fact behave like ordinary affixes morphologically, and, unlike clitics, are subject to all kinds of morphological restrictions, characteristic of the word formation component. For this reason, I propose, instead of independent generation and attachment, another mechanism: morphological control.

1. Preliminary outline of the theory

The theory of morphological control states that morphological material on a given lexical element A controls an abstract position B within a given domain X. Control is exercized through the transfer of a feature from A to B:

(1) $\ldots [_X \ \ldots \underset{[\alpha F_i]}{A} \ldots \ B \ \ldots] \ldots \Longrightarrow \ldots [_X \ \ldots \ A \ \ldots \underset{[\alpha F_i]}{B} \ \ldots] \ldots$

The question then is, what restrictions does the theory specify for the domain X, for A, for B, for the relation between A and B, and for the feature $[\alpha F_i]$ transferred.

Here we will simply list a number of possible restrictions. These will then be considered in more detail in section 2, and we will return to the general outline of the theory in section 3.
A first possibility is that A governs B in the sense of Aoun & Sportiche (1980):

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(2) A must govern B (where X governs Y iff the first maximal projection dominating Y is X^{max})

A weaker claim would be not to specify the domain of control, but just to restrict A:

(3) A must be the head of a phrase.

Still weaker may be:

(4) A must belong to a major category ($\pm$ N, $\pm$ V)

Restriction (4) is equivalent to (3) under a strict interpretation of the X' expansion convention, but not if one allows for X-bare constituents. Note that under the strict interpretation, adopted here, both (3) and (4) follow from the major category restriction formulated in Aronoff (1976): the base serving as input to a word formation rule must belong to a major category. Thus only major categories can contain morphological material and function as morphological controllers. To make (2) follow from Aronoff's restriction as well, we can invoke a general boundedness principle (cf. also Koster 1978).

(5) X and Y may only be related to eachother if no Z^{max} intervenes

We will return in a moment to an auxiliary theory of 'escape hatches', allowing specific deviations from (5). Note that by restricting morphological control through the interaction of a quite general locality principle and a restriction of the lexicon, we indicate the relation of morphological control both to lexical and to syntactic processes. Given that a grammatical theory that predicts that a substantial class of differences between languages is lexical has great plausibility, we can state that languages do not only differ as to how elements are lexicalized (i.e. in their vocabulary), but also as to whether they are lexicalized at all, and hence, whether morphological control occurs.

Turning to ways of restricting the controlled position B, we may limit B either categorially, as in (7), or structurally, as in (6):

(6) B must be directly dominated by a maximal category

(7) B must be defined in terms of at least one minor feature

Both restrictions have interesting consequences. Note that, if we formulate a theory of escape hatches with respect to (5), as in the extended boundedness condition (8), also (9) follows with respect to B (also cf. Van Riemsdijk, 1978):

(8) X and Y may only be related to eachother if no Z^{max} intervenes, or if there is an escape hatch, a position immediately dominated by Z^{max} and coindexed with both X and Y.

(9) B must be a potential escape hatch

Turning now to (7), we can claim, given a reasonably restricted theory about the internal structure of minor categories, namely that

they are not branching and that they are dominated by a position in the projection line of a major category, that (10):

(10) B must c-command A

Now note that (10) is a weaker version (6): (6) states that B must c-command A from some X^{max} level, (10) states that B must c-command A from any level in the tree.

Another possible restriction on the relation between A and B may be:

(11) No lexical material may intervene between A and B

This characteristic of string adjacency has led grammarians in the past to analyze in terms of cliticization or attachment what will be analyzed here as morphological control. As said before, we will have to argue on specific grounds that cliticization is not correct. We will turn in the course of our argument to the question whether affixes count as lexical material in (11), and hence, whether morphological control may jump affixes.

A final set of restrictions concerns the nature of the feature transferred from A to B in the process of morphological control. One stipulation may be:

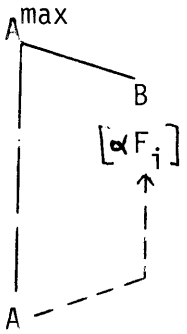
(12) $[\alpha F_i]$ must be a member of a limited, universally defined set

This set may coincide with the set of minor features (cf. Van Riemsdijk 1978), or be a proper subset of this set. Along the same lines we can say that morphological control needs to be structure preserving: a feature is moved to a position defined in terms of that feature. This will become apparent in the discussion of Quechua in section 2. Some potential difficulties will be mentioned in section 3.

(13) Morphological control is structure-preserving

This concludes our preliminary discussion of the features of a theory of morphological control. The following configuration obeys all restrictions:

(14)



We will see that not all potential cases of morphological control in Quechua grammar, discussed in section 2, conform to (14).

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2. Morphological control in Quechua grammar

Given the various features of the theory of morphological control, we now turn to Quechua grammar to see whether they are pertinent or whether they need to be replaced or amended. I will be discussing three domains of application. First, a Tense position on the S' level, then a Case position, and finally the Agreement position on the S level.

2.1 The S' Tense position. Let us consider, perhaps as a preliminary step, two Quechua complement sentences:

(15) a. ri - y - ta muna - ni[1]
go NOM AC want 1
'I want to go'

b. ri - sqa - n - ta yaca - ni
go NOM 3 AC know 1
'I know that he went'

These sentences demonstrate some of the characteristic features of Quechua syntax. First we see it is an SOV, left-branching language, the complement being to the left of the matrix verb, which occurs at the end of its clause. It has case marking, both on noun phrases and, as in (15) a. and b., on sentential complements: the accusative marker /-ta/ in both examples. We see the use of nominalization as a complementation strategy: the /-y-/ infinitival nominalizer in (15) a., and the /-sqa-/ definite nominalizer in (15) b. Finally, there is no overt subject necessary either in matrix or in subordinate clauses. Instead, we find person marking on the verbs: not on the infinitival /ri-y-ta/ 'to go' in (15) a., but /-ni/ '1st person' on /muna-ni/ 'I want' and /yaca-ni/ 'I know', and /-n/ in /ri-sqa-n-ta/ 'that he went'.

Somehow the verb /muna-/ 'want' subcategorizes for a /-y-/ infinitival complement, and /yaca-/ 'know' subcategorizes for a factive or tensed complement, with /-sqa-/. How do we account for these subcategorization restrictions? If we assume (a) that verbs can be subcategorized for tensed or tenseless clauses; (b) that subcategorization is constrained by (8), and can only involve elements on the X^{max} level, we can postulate that the specification of tensedness is given on the S' level. Since in Quechua all projections are left-branching, the head occurs in the rightmost position in its phrase, and morphological control is rightward. Hence the tensedness must be specified to the right of the verb, if we assume that it is controlled by the verb morphology. A possible base rule is:

(16) S' --> ... S ... $\pm$ Tense ... (cf. Lefebvre & Muysken, 1978)

For English, this $\pm$ Tense position, to the left of S (cf. Den Besten 1977), corresponds to 'that' and 'for .. to ..', and there we would want to say that some verbs are subcategorized for 'that' clauses, etc. The Quechua would be non-lexicalized and morphologically controlled in (15) a. and b. There may also be lexicalized complementizers in this position in Quechua: the /cay/ complementiz-

ers discussed in Lefebvre (1980) for Cuzco Quechua would be lexical realizations of the + Tense position, the /nisa/ complementizers discussed in Muysken (1977: 190-1) for Jungle Quechua would be an example of a lexically realized - Tense position. Both are clause-final, to be sure.

In (15) a. and b., I claim, the ± Tense position is not realized lexically, but morphologically controlled. In (15) a. /-y-/ controls the - Tense position on the S' level of the complement clause, while in (15) b. /-sqa-/ controls the + Tense position.

What alternatives are there to morphological control, and what are the objections against them? The theory of generative grammar provides for percolation and cliticization. Percolation would imply that the subcategorized ± Tense feature would percolate down from V''' (= S') to the verb, through the main projection line. Then there would be a matching rule comparing the value for the percolated feature with the morphologically specified verb tense. There are several problems with this analysis. One is that in Quechua we find lexical auxiliaries in some cases, and there we would have to say that percolation goes to the AUX position rather than following the main projection line. Thus percolation would be less restricted than had been assumed, as regards its path. Here I am assuming that V is the head of S' in Quechua, not AUX or INF or AG or whatever. There is good evidence for this assumption from person agreement processes in Quechua and from the overall similarity between nominal and verbal structures.

A second problem with percolation is word order freedom. Morphological control predicts that in Quechua subordinate clauses nothing can move past the verb, since otherwise the strict adjacency of controller A and controllee B would be violated. Percolation does not predict this. It has often been noted that there is a marked contrast in the freedom of the position of the verb between Quechua main clauses and subordinate clauses (see e.g. Jake, 1979). While a traditional explanation may be the invocation of structure-preserving qualities (Emonds, 1976), this will not account for the fact that other elements in subordinate clauses are not similarly fixed in position. The idea that the verbal morphology functions as a controller for the ± Tense position explains the fact neatly. Thus we can see a sort of trade-off between the degree of lexicalization of minor positions and the freedom of positioning of heads, typically morphological controllers.

Of course, there is a certain duplication in a theory which allows for both percolation and morphological control. If we adopt morphological control, it would be attractive to disallow for percolation, for instance by restricting the specification for non-categorial features to terminal nodes. We will return to the problem of percolation in section 3.

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Against cliticization, i.e. the assumption that /-sqa-/ and /-y-/ in (15) are generated independently on S', and then cliticized to the verb, there are several arguments. A first problem would be that numerous semantically intra-clausal affixes show up to the right of /-sqa-/ and /-y-/ in the verb form (such as person markers in (15) b., and we would have to assume a complex set of reordering rules.

A second problem for cliticization is that it entails that the + Tense position dominates the full set of different morphological elements, such as /-y-/ and /-sqa-/, already mentioned, /-na-/ 'unrealized/futuritive', perhaps also /-q/ 'agentive'. One would have to say that /yaca-/ 'know' is subcategorized for several different complementizers, while the relevant generalization is really that it subcategorizes for + Tense complements. By assuming morphological control rather than cliticization it follows naturally that only the feature + Tense is specified in the S' position, and that the specific characterization of tense, i.e. past, present, or future, is irrelevant at the S' level.

A third problem is that the supposed complementizers cited above are morphologically similar to the main clause tense markers in their distribution, and we would have to separate them from this class under the cliticization analysis unless we would also assume main clause tense markers to be generated at the matrix S' level. For these three reasons, the cliticization analysis for Quechua nominalizing affixes is problematic. An analysis in terms of morphological control gives us the desired result.

2.2 Case. With respect to Case, I assume that there is an abstract Case position in Quechua on the X''' level, and hence also on the S' (= V''') level, to the right of + Tense on S', and in the rightmost position for N''' and A'''. Case is an abstract position and controlled by an element on the head. There cannot be a case suffix, the controller of the Case position, affixed to a [- N] element:

(17) X''' --> X'' ... Case ...

(18) *[-N X]+case

Given the morphological restriction in (18) verbs as such cannot be case-marked.

Complement clauses are governed, hence they must be case-marked. We cannot have bare complement clauses. The one way they can be case-marked is as shown in (15), through a nominalizer with a case suffix. The other way is to create a dummy case-bearing element on the S', not to have the verbal morphology control an abstract position:

(19) ri - rqa - n cay - ta yaca - ni 'I know that he went'
go PA 3 that AC know 1

In this example, directly parallel to (15) b., /cay-ta/ 'that AC' is in the rightmost position within the S' complement (cf. Lefebvre 1980).

Suppose we assume Case to be on the S' level (and again, the fact that subcategorization falls under boundedness condition (8) would force this, since verbs can be subcategorized for certain case-marked complements), how can we exclude percolation as a theoretical possibility? There are three problems, as far as I can see, with the possibility that Case is assigned to the X''' node and then percolates down through the main projection line to the X node, where it is matched in feature specification with the case morphology of the head.

A first problem is the existence of lexicalized Case positions, as was sketched in (19): how can there be a Case position if Case is a feature percolating down to the head? A second problem for percolation is that it would have to be string-sensitive. Consider (20)-(21):

(20) sumaq wasi - ta riku - ni
beaut. house AC see 1 'I see a beautiful house'

(21) wasi hunt'a - ta riku - ni
house full AC see 1 'I see a full house'

In both cases we have a verb governing an object NP modified by an adjective. In (20) the accusative case marker /-ta/ is morphologically realized on the head N, while in (21), a special case with a postnominal adjective, it appears on the adjective, /hunt'a/ 'full'. Case has to be marked on the rightmost element in the NP, which will generally be the head but occasionally is not. Now percolation would have to be defined as choosing the rightmost path in the projection, which seems rather unnatural.

A problem for the analysis in terms of morphological control is of course that the control relation has to exceed the X''' (here A''') domain. In (21) the Case of the NP is marked on the head of the A'''. It skips that level and goes directly to the N''' Case position. Thus X^{max} government, as in (2), is too strong a requirement in its strict interpretation. One way out is to say that A''' is not a governing category, but this is both theoretically undesirable and it leads to some problems, as we will see. It is more plausible to assume that when the A''' is in the domain of an N''' it is not governed and not assigned Case of its own. A situation similar to (21) we find in (22):

(22) $[_{N'''}\ [_{A'''}$ alli - ta $]$ e Case $]$ riku - ni 'I see a good one'
good AC see 1

Here /-ta/ morphologically controls the Case position of the empty N''' dominating it, while itself being affixed to the adjective. But adjective phrases can also be case-marked themselves:

(23) $[_{A'''}$ alli - ta $]$ riku - ni 'I see well'
good AC see 1

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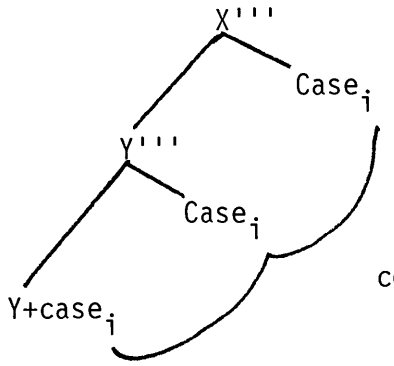
When the adjective phrase occurs by itself in the VP, it is governed and hence case-marked, and /-ta/ controls the position in the A'''.

Thus we have to modify the condition on boundedness in morphological control by saying that the feature specification for Case is not controlled in its own X''' domain if it is not governed. In that circumstance, the Case position can function as an escape hatch, along the lines of (8), for control to a higher position. The configuration relevant to (21) and (22) is then as in (24):

(24)



conditions: (a) Y''' is not governed;
(b) Y is rightmost in X'''

The conditions are not specific to this instance, but will follow from the interaction of morphological control and the general theory of boundedness. In any case, a percolation analysis does not handle these same facts in a satisfying way.

A third problem concerns double case marking. Consider (25):

(25) $[_{N'''}\ [_{N'''}$ Xwan - pa - ta Case$]$ e Case $]$ riku - ni
John GEN AC see 1
'I see John's'

We find here a combination of the genitive marker /-pa/ and the accusative marker /-ta/ on a possessive noun phrase modifying an empty head. Obviously there are two NP's. We want to say that the string /-pa-ta/ first controls the specifier NP Case position, and since it only matches with genitive there (structurally assigned within the matrix NP), it goes on to control the Case position in the matrix NP. Here accusative, assigned by the verb, is morphologically controlled. Of course (26) will be ungrammatical:

(26) Xwan - pa - ta wasi 'John's AC house'
John GEN AC house

since the /-ta/ cannot control any Case position within the specifier NP. In (25) again we find morphological control crossing an X''' boundary, but in this case the intermediate escape hatch is controlled itself:

(27) $[_{X'''}\ [_{Y'''}$ Y+case$_i$+case$_j$ Case$_i$$]$ Case$_j$ $]$

We must assume that there is matching operation involved in morphological control: the features specified by the morphology are matched against the features specified by government. When there is no govern-

ment, as in (21)-(22)-(24), the features have to match a position in the next domain up. When there are features specified on the intermediary position, and the morphology provides double specification, the extra features have to match in the next X''' domain up. It is not clear at this point whether this state of affairs is possible because genitive case is not assigned through government, but structurally. If this were the case, it would explain why the 'interior' element in case stacking examples is always the genitive.

The theory of percolation would have great difficulty in accounting for the facts in (25)-(27). Again, there would have to be a rightmost path convention, but worse, there would need to be a principled way to percolate the Case features to lexical elements, starting from the right.

Now, consider cliticization. The type of stacking shown in (25) has always been considered evidence par excellence for the independent generation of case-suffixes. In (25) accusative /-ta/ would simply be generated in the top N''' and, in the absence of a lexical noun, be cliticized to the element on its left, which happens to be a nominal specifier, itself already case-marked. This independent generation would neatly account for the scope of the case markers, without having to assume the complex machinery just sketched. In Muysken (1980) I argue at length against this option, for mostly descriptive morphological reasons.

Notice, first, that Case cliticization does not blindly attach to any adjacent constituent, but is restricted to +N contexts. That type of restriction is characteristic of affixes, not of clitics. Second, we find a case of allomorphy in the genitive marker, depending on the preceding element. Third, there are cases of variable suffix ordering: some case-suffixes precede the nominal delimitative marker, some follow it. Again, a phenomenon characteristic of morphology, not of cliticization. There are, fourth, truncation rules involving part of a case marker, and part of a preceding affix. If we assume truncation to occur in the lexicon, again an argument against cliticization. There are cases of lexicalized meaning, involving case markers and adjectives. All these facts, more fully elaborated in Muysken (1980), point to case affixation as a word formation or lexical process, not as a cliticization or phrase structure process.

I have tried to argue here that the contradictions between the morphological distribution of case affixes and their scope can best be resolved in the theory of morphological control. Competing accounts, such as cliticization and percolation, suffer unsurmountable difficulties. Now I will turn to a final instance of morphological control, the AUX on the S level.

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2.3 Aux. The third class of cases of morphological control that I will discuss will be the AUX, a minor category on the S level. I assume base rules (28) a. and b.:

(28) a. S --→ NP VP AUX

a.' V'' --→ N''' V' AUX

b. AUX --→ Tense, Mood, Aspect; Agreement

I will assume also that the Agreement marker properly governs the subject position (cf. Chomsky, 1979), and in this way Quechua subjects can be empty without violating the ECP.

In simple clauses, however, both subject and object agreement are morphologically realized on the verb, not on an auxiliary:

(29) qu - yki 'I give you'
give 1-2

In past habitual tense, however, we find that both types of agreement are realized on the auxiliary verb /ka-/ 'be':

(30) qu - q ka - yki 'I used to give you'
giveAG be 1-2

If we want to make the theoretical assumption that in both cases it is the AUX that properly governs the subject, clearly we need to adopt morphological control. /qu-yki/ in (29), while part of the V', morphologically controls the agreement marker on the empty AUX position, which can then properly govern the subject. Again there is an alternation between lexicalization, (30), and morphological control, (29).

Obviously, there can be no percolation here, so the only other alternative is cliticization. Again, the principal arguments against this solution are morphological: first, just as with tense markers, we would need to assume a complex set of affix-reordering rules; second, there are very complex interactions in Quechua between subject and object markers. Sometimes they are fused, as with /-yki/ '1-2', sometimes they are separated. The need to derive person markers with affixes is extensively argued for in Muysken (1978).

2.4 Summary. These then are the three cases of presumed morphological control that I wanted to discuss for Quechua. I have tried to demonstrate that in each case assuming morphological control would make the overall grammar of Quechua look simpler, and that in each case the two competing explanations, cliticization and percolation, were subject to serious problems.

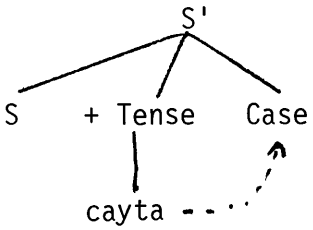
3. Discussion and conclusions

3.1 The analysis presented here suffers from a number of contradictions and inadequacies. First, consider lexicalized ± Tense and Case. We mentioned that in some circumstances, + Tense on the

S' level may be lexicalized as /cay/, and in our discussion of Case we suggested that /cayta/ is the lexical realization of Case. How can /cay/ be part of both?

A first possibility is that in fact there is a structure as in (31):

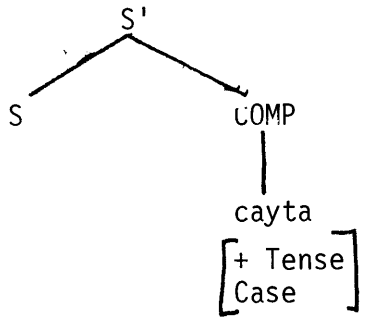
(31)



Here the case affix on the + Tense marker /cay/ will morphologically control the empty Case position.

Another possibility is that there is only one position, e.g. COMP, to the right of S, which can dominate various features:

(32)



These various options are in need of much more careful investigation of the structure of S' than can be pursued here.

A second problem for morphological control has to do with V, Aux, and Tense. In 2.1 I claimed that the verbal morphology can morphologically control an S' $\pm$ Tense position. In 2.3 that there is an alternation between lexicalized and controlled Aux, in the latter case itself controlled by the verbal morphology. If we look at complement clauses with a lexicalized Aux, as in (33):

(33) ri - q ka - sqa - n - ta yaca - ni
go AG be NOM 3 AC know 1
'I know that he used to go'

we must assume that there the auxiliary morphology controls the abstract S' $\pm$ Tense position, or, alternatively, that there is a chain from V to S' via Aux (where the latter is not lexicalized), as in (34):

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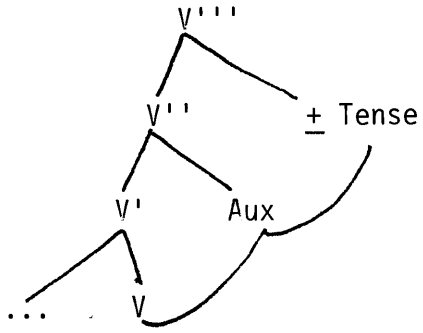
(34)

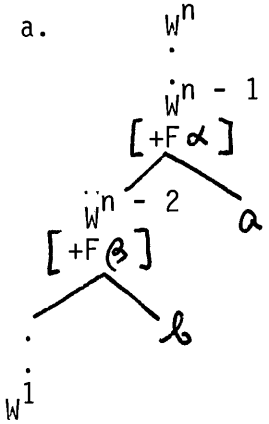


Tense features are controlled through the Aux. In 3.2 I will argue that this 'chain' control is indeed the correct analysis.

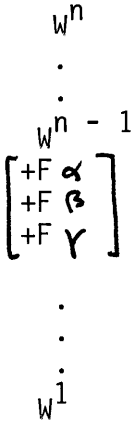
3.2 Percolation revisited. Morphological control may be quite a general phenomenon among the languages of the world, but it appears to be limited to situations where there is an immovable controller in a rightmost or leftmost position within a phrase. And of course there are many languages with material on either side of the head. Thus there may be a distinction between percolation languages and control languages. In control languages, a given feature of, say an NP, is morphologically realized on either the leftmost or the rightmost element in the NP and generated as an abstract position on the maximal level adjacent to the morphological realization.

In percolation languages, the feature can occur anywhere, and can be morphologically realized in several places at the same time, within specific structures (e.g. German Case in noun phrases). The fact that there is a distinction between percolation and morphological control should ideally follow from the lexicon. Suppose it is a consequence of the different structure of words in various constructions, but it is not clear how exactly. One possibility is to distinguish between words of type (35) a. and (35) b.:

(35) a.

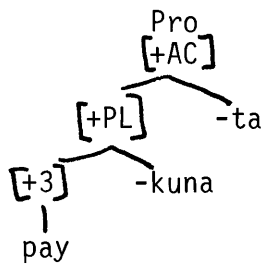


b.



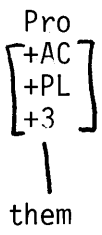
In words of type (35) a., corresponding to agglutinating languages, each node in the morphological word tree (drawn is a left-branching, suffixing tree) adds an extra feature. In words of type (35) b., a word as a whole has a number of features, not corresponding to particular nodes. Examples might be Quechua and English pronouns:

(36) a.



paykunata 'them'

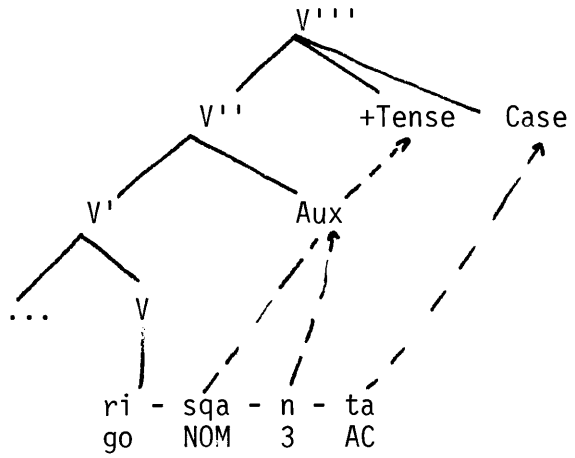
b.



These considerations bring us to the question what is meant by "lexical material" in the adjacency condition (11). Does it include suffixes as well? The discussion above suggests that the internal structure of words is indeed relevant, and that suffixes should count as well as "intervening lexical material". If they do, it follows generally that only exterior affixes can participate in morphological control. For interior affixes it would be blocked.

Another consequence is that, when there are several affixes involved that exercize morphological control, the sequence of controlled elements has to parallel the sequence of affixes. The scope of the Case controlled by the exterior case affix in (25) should be wider than the scope of the Case position controlled by the interior affix. It also follows, to return to the problem raised in 3.1, that chain control, as in (34), is necessary. Consider again (15) b.:

(37)



Since the /-n/ affix intervenes between the nominalizer /-sqa-/ and the + Tense position, /-sqa-/ can only control Aux directly. Then Aux is free to control + Tense.

3.3 The theory of morphological control. We have seen that the original restrictions put on morphological control in section 1 have b been partly maintained, partly elaborated upon, partly proved untenable if one accepts the analyses presented. I think we can maintain the definition of morphological control as feature transfer, in (1), but I think the idea that morphological control would be a type of government, as in (2), runs into difficulties when see that Aux can be the

controller as well, as in (34), and in (31) a nominal COMP element can control an adjacent Case position. Restriction (3) is too strong for the same reasons, but (4) can be maintained, unless we would find examples where the intermediate category in chain control were not definable in terms of ± N, ± V. Auxiliaries in Quechua are categorially verbs, with an extra feature of some kind.

While the government restriction in (2) is too strong, the boundedness principle in (5), with the escape hatch extension in (8), can be maintained. Under what conditions we find control exceeding a maximal boundary needs to be studied in much more detail. Restriction (6) needs to be dropped if we assume that Aux, dominated by V'' (= S), can be controlled rather than lexicalized, but (7) restrcting the controllee to minor positions seems to make the right predictions.

Restriction (9) is too strong, given the escape hatch theory in (8) and given that (6) excludes Aux. Restriction (10) can be retained, as it follows from (7). The adjacency condition (11) can be maintained, but notice that it has almost served as a definitional criterium in the Quechua cases. The condition (12) restricting the transferred feature to a universally defined and limited set can be maintained if we allow Case, Tense, and Person features to be members of it. We find that assuming that morphological control is structure preserving as in (13) makes a number of interesting predictions, as in (34) where the intermediary position in the control chain had the requisite feature Tense as well.

This concludes our discussion, meant as a proposal for a research program rather than as a definitive statement. Undoubtedly the bare outline of the theory of morphological control given here will find substance when more domains of application are investigated.

FOOTNOTES

* This paper is part of a larger research program dedicated to Quechua grammar. I want to thank the participants of the NELS conference, in addition to H. den Besten and C. Lefebvre, for their comments and encouragement.

[1] The orthography used here for the Quechua examples is roughly the phonetic one; c is a palatal stop, ll a palatalized lateral. In the glosses the following abbreviations have been used (in order of appearance in the text):

NOM	nominalizer
AC	accusative
1	first person
3	third person
PA	past tense
GEN	genitive
1-2	first person subject, second person object
AG	agentive
PL	plural

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