0. INTRODUCTION

In Quechua, as in many other Amerindian languages, we find very complex verb forms, as in (1) and (2) (both taken from recorded autobiographical narrative):

(1) lliw - ta - s thuni - ya - ra - chi - pu - q
    all   AC HS fall apart  AUM EXH CAU BEN AG
    ‘Throwing everything over...’

In the verb of (1) we find a verb stem thuni modified by no less than four ‘derivational’ affixes: augmentative ya, exhortative ra, causative chi, and benefactive pu. In addition there is an ‘inflectional’ agentive marker.

(2) tarde - ya - chi - ka - mu - q - ña - taq ka - ni
    late     DEADJ CAU RE CISL AG ALR EMP be 1
    ‘I used to be late’

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For those readers not totally familiar with the intricacies of Quechua dialectology, I would like to stress that the data analysed in this article are not identical with, though clearly related to, data discussed in other articles of mine on similar problems. Particularly, the chapter on affix order in my thesis, Muysken (1977) is mostly based on Ecuadorian Quechua data. Muysken (1981a), in the Heny volume, deals with data from Tarma, Central Peru, while in Muysken (1981b), in the Pisa volume, data from a number of central well-known dialects, including Junin, Ayacucho, and Cuzco Quechua, are discussed. Muysken (1986) is based on data from Cochabamba Quechua, spoken in parts of Bolivia. The data presented here are from a variety related to Cuzco Quechua spoken in the province of Chumbivilcas, department of Cuzco. This dialect, which so far has not been studied linguistically differs from Cuzco Quechua in one respect, as I will make clear in the text.
The complex verb in (2) consists of an adjectival stem tarde (borrowed from Spanish), followed by dejectival ya 'become', causative chi, reflexive ka, and cislocative (movement toward speaker) mu. In addition there is again the 'inflectional' agentive marker, and two enclitic elements, na 'already' and emphatic taq.

Neither the labels given here to the individual affixes, nor the gloss given to the whole sentence begin to convey the complex meaning of forms like these, for the interpretation of which other factors, such as context, play an important role. It is clear that for every verb stem there are many thousands, if not an infinite number (given the possibility of recursion), of fully suffixed verb forms. The task of the grammarian working within the research program of generative grammar is to characterize the linguistic capacity of humans, taking into account the ability to freely form and use complex verb forms such as the ones in (1) and (2). This paper was inspired in part by a remark of Schultink (1979), suggesting that the existence of Amerindian languages with very complex verb morphologies that require a grammar in terms of a template is a potential counterexample to locality conditions in morphology such as Siegel's adjacency condition (1977). Here the opposite research strategy is taken, trying to analyze all language-particular statements about Quechua affix order in terms of local stipulations, and to derive all non-local aspects of the ordering restrictions from general principles of the grammar.

This strategy can be approached from two different perspectives: (a) there is a word formation component separate from the syntax, with its own distinguishing properties; (b) word formation and phrase formation are really the same thing, differences between the two resulting from different realization rules. Position (a) is most strongly associated with the lexicalist research program of the late seventies and early eighties, beginning with Aronoff (1976) and Lieber (1980).

Position (b) is characteristic of researchers working in the framework of generative semantics and has been recently taken up by Baker (1985a). For Quechua this tradition has been quite strong, including work by Landerman & Frantz (1972) and a number of contributions by Weber (e.g. 1978).

I will take a seemingly contradictory position here, at the same time stressing the wellformedness conditions shared by complex words and sentences, and stressing the essentially different character of word formation processes. In other words, I will defend a position as sketched in (3c), distinguished from the lexicalist position of (3a), and the syntacticist position of (3b). These positions may be represented schematically as follows:
It is not clear to me yet, given the richness of theoretical vocabulary presently available within the theory, whether these three alternatives are not simply notational variants. Perhaps the 'wellformedness principles for representations' of (3c) are identical to the component of 'word and phrase formation' of (3b). If such is the case, it is merely a question of which metaphor gives us most insight. I will try to be as precise as possible about possible empirical consequences, however. In any case, what (3b) and (3c) share is the assumption that the actual shape of words is determined in a modular way, through the interaction of general principles governing the wellformedness of representations and principles particular to Quechua word formation.
In section 1 I will discuss the order of the Quechua affixes, and in 2 the different interpretations associated with the orderings, before turning in 3 again to the general issue of the position of word formation in the grammar.

I. THE ORDER OF THE QUECHUA AFFIXES

In this paper I will limit myself to the verbal affixes that precede the 'inflectional' affixes of tense, mood, person, and number. By 'verbal' I mean any element, the affixation of which creates a verb. Adapting the classification of Cusihuaman (1976) these can be separated into four categories:

A. Category Changing Affixes
   cha  denominal/deadjectival 'make x'
   ya   denominal/deadjectival 'become x'
   na   denominal 'put in x', 'take x from y'
   lli  ambivalent 'transform oneself into x'
   naya ambivalent 'desire x'
   raya ambivalent 'permanence'
   (y)kacha ambivalent 'V to and fro', 'V halfheartedly', 'pretend to be N'

The characterization 'ambivalent' means that these four affixes can be attached to either verbs or nouns.

B. Modifiers
   paya 'frequentative'
   rpari 'directed attention'
   naqa 'intentional'
   pa 'to try and ...'
   (pa-ku 'for someone else’s benefit')
   na 'repetitive'
   (pu-na 'reciprocal with intransitives')
   yu 'reciprocal'
   ru 'exhortative'

C. Auxiliaries
   ri 'inchoative'
   schi 'help'
   chi 'causative'
   ku 'reflexive'
D. Directionals

mu  'cis/translocative'
     (movement towards/away from the speaker)

pu  'regressive/benefactive'

We will see below that this classification does not reflect the true state of affairs, but it does give some idea of the variety of affixes involved in the system. Cusihuaman (1976) meant to indicate ordering possibilities as well: elements from category A before those from B, etc., but we will see below that this result is only partially correct.

The primary results on which this paper is based derive from a systematic exploration of the combinatory possibilities of the affixes mentioned above under A through D. These results are represented in Table I:

Table I: Affix combinations in the Quechua of Chumbivilcas (department of Cuzco)

<table>
<thead>
<tr>
<th>Affix Order</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>l y n c n r p p p n r y r p n s c y r k m p</td>
<td></td>
</tr>
<tr>
<td>l a a h a a a a u a i k p a a c h u u u u u</td>
<td></td>
</tr>
<tr>
<td>i a q y k n a a y y h i a a u a c r a a i</td>
<td></td>
</tr>
<tr>
<td>h i a</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order</th>
<th>Affixes</th>
</tr>
</thead>
<tbody>
<tr>
<td>lli</td>
<td>o - - - - - + - - - - + + + + + + + + + + +</td>
</tr>
<tr>
<td>ya</td>
<td>- o - - - - - + - + + - + + + + + + + + + + +</td>
</tr>
<tr>
<td>na</td>
<td>- - o - ? + + + - + + + + + + + + + + + + + +</td>
</tr>
<tr>
<td>cha</td>
<td>- - - o - + + + + + + + + + + + + + + + + + +</td>
</tr>
<tr>
<td>naqa</td>
<td>- - - o - - + + + + + + + + + + + + + + + + +</td>
</tr>
<tr>
<td>raya</td>
<td>- - - - - o - + + ? ? ? + + + + + + + + +</td>
</tr>
<tr>
<td>pa</td>
<td>- - - - - o - + - - + - + + + + + + + + + +</td>
</tr>
<tr>
<td>paku</td>
<td>- - - - - + - o - ? + + + + + + + + + + + + + +</td>
</tr>
<tr>
<td>puna</td>
<td>- - - - - + o - + + + + + - + + + + + + +</td>
</tr>
<tr>
<td>na</td>
<td>- - - - - - + - o + + + - + + + + + + + + +</td>
</tr>
<tr>
<td>ri</td>
<td>- - - - ? - + - + o + + ? + + + ? + + + +</td>
</tr>
<tr>
<td>ykacha</td>
<td>- - - - ? - + + + o + + + + + + + + + + + +</td>
</tr>
<tr>
<td>rpri</td>
<td>- - - - ? + - + + - + + + o + + + + + + + + +</td>
</tr>
<tr>
<td>paya</td>
<td>- - - - - ? - + ? + + + + o + + + + + + + + +</td>
</tr>
<tr>
<td>nay a</td>
<td>- - - - - - + + + + + + + o + + + + + + + + +</td>
</tr>
<tr>
<td>schi</td>
<td>- - - - - - + + - - + + o - - - + + +</td>
</tr>
<tr>
<td>chi</td>
<td>- - - - ? - - + + - + + + + o - - - + + +</td>
</tr>
<tr>
<td>yu</td>
<td>- - - - - - - + - - - - + + o + + + + +</td>
</tr>
<tr>
<td>ru</td>
<td>- - - - - - - - ? - - - - + + - o + + +</td>
</tr>
<tr>
<td>ku</td>
<td>- - - - - - - - - - - - o + + +</td>
</tr>
<tr>
<td>mu</td>
<td>- - - - - - - - - - - - - - - o + +</td>
</tr>
<tr>
<td>pu</td>
<td>- - - - - - - - - - - - - - - - - - o</td>
</tr>
</tbody>
</table>

Affix Order and Interpretation: Quechua

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This table should be interpreted as follows: when the crossing of *ya* horizontal with *paku* vertical gives a −, it means that a verb in which *ya* precedes *paku* is ungrammatical. The + right next to it in the column for *puna* vertical indicates that the sequence *stem+ya+puna* is grammatical, as far as I was able to establish. The few question marks indicate that the results on those points remain contradictory. The o represents a sequence of two identical affixes. Most of these are ungrammatical, but it is possible to repeat some affixes when they are not immediately adjacent. I will not discuss this issue here, referring the reader to Muysken (1977, 1986). It becomes much easier to make sense of Table I if we idealize the results temporarily in an abstract representation such as Table II:

*Table II: An idealized abstract version of Table I*

```
| l y n c n r | p p n r y r p n s c y r | k m p |
| l a a h a a | a u a i k p a a c h u u | u u u |
| i a q y a a | u a k n a a y y h i | a a |
| i a q y a a | c r a a i h i a |
```

<table>
<thead>
<tr>
<th>l i</th>
<th>y a</th>
<th>n a</th>
<th>cha</th>
<th>naqa</th>
<th>raya</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>p a</th>
<th>p a k u</th>
<th>p u n a</th>
<th>n a</th>
<th>r i</th>
<th>y k a c h a</th>
<th>r p a r i</th>
<th>p a y a</th>
<th>n a y a</th>
<th>s c h i</th>
<th>c h i</th>
<th>y u</th>
<th>r u</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>k u</th>
<th>m u</th>
<th>p u</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
The abstraction achieved here is based on the assumption that there are basically three types of affixes, as in (4):

(4)  

A Revised Description

<table>
<thead>
<tr>
<th>DERIVATIONAL (RESTRICTED TO STEMS)</th>
<th>SYNTACTIC (FREE)</th>
<th>INFECTIONAL (TEMPLATE-LIKE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lli</td>
<td>pa / pa...ku</td>
<td>INFLECTION</td>
</tr>
<tr>
<td>ya</td>
<td>na / pu...na</td>
<td></td>
</tr>
<tr>
<td>na</td>
<td>ri</td>
<td></td>
</tr>
<tr>
<td>na</td>
<td>ykacha</td>
<td></td>
</tr>
<tr>
<td>ROOT</td>
<td>paya</td>
<td>ku mu pu</td>
</tr>
<tr>
<td>cha</td>
<td>naya</td>
<td></td>
</tr>
<tr>
<td>naqa</td>
<td>schi</td>
<td></td>
</tr>
<tr>
<td>raya</td>
<td>yu</td>
<td></td>
</tr>
</tbody>
</table>

The derivational affixes can appear only on the invariant verb stems, cannot follow each other, and cannot follow anything else. Hence the three times in Table II, represented again in (5). The syntactic affixes can freely combine with each other, can follow the derivational affixes, but cannot follow the three inflectional affixes ku, mu and pu of the third category. These latter three affixes, finally, can follow everything else, and are rigidly ordered among themselves. That gives us (5):

(5)  

DERI SYNT INFL
DERI a- b+ c+
SYNT d- e+ f+
INFL g- h-

Here a ... h are codes for groups of affix combinations, referring back to Table II, and ‘+’ and ‘-’ refer to the grammaticality of combinations. The combinations predicted by (5) correspond rather well with Table I for a, c, d, f, g, h. It will be clear, however, when we compare Table II and (5) with Table I that there are a large number of discrepancies between the idealization and the actual fieldwork results. I will briefly discuss some of these group by group. With respect to (5a) it is not clear that naqa and raya are really part of this class: naqa is a borrowing from the Amerindian language Aymara, and perhaps therefore limited in its distribution; raya is perhaps part of the syntactic group but for reasons unknown combines with other affixes only with great difficulty. Many
of the deviations in (5b) and (5d) are also due to the uncertain status of *raya* and *naqa*, and finally we find some exceptions in (5b) because *lll*, *ya* and *na* do not combine easily, *lll* and *na* because of their marginal status in Quechua morphology and *ya* because it creates intransitive verbs and some syntactic affixes require a transitive base.

The most systematic and potentially troublesome set of deviations, however, concerns the supposedly free combinatory possibilities of the syntactic affixes, (5e). This set requires a number of additional, preliminary and ad hoc, ordering statements:

(6) **Ordering Statements**

\[
\begin{align*}
a. & \quad * \{ \text{chi} \} \ldots \{ \text{yu} \} \\
& \quad \{ \text{schi} \} \{ \text{ru} \} \\b. & \quad \{ \text{pa(ku)} \} \\
& \quad \{ \text{pu(na)} \} \\
& \quad \{ \text{ykacha} \} \\
& \quad \{ \text{rpasi} \} \\
& \quad \{ \text{naya} \} \\
& \quad \{ \text{paya} \} \\
& \quad \{ \text{ri} \} \\
c. & \quad * \{ \text{ru} \} \{ \text{yu} \} \\
d. & \quad * \{ \text{schi} \} \{ \text{ri} \} \\
& \quad \{ \text{chi} \}
\end{align*}
\]

There are several troublesome aspects of these very specific ordering statements, which suggest that they are simply the surface reflection of more complex underlying patterns. First of all, they have to be formulated as negative filters, and it is not clear how the more complex ones could be learned, if the learner starts from the assumption that both orders are possible in principle, for any set of two affixes.

Second, one of the negative filters, (6a), is not a local one, and in my introduction I stressed the importance of arriving at local language-specific statements. The contrast in locality between (6a) and (6b) can be seen in (7), where the affixes involved in both filters are combined (note that *ra* and *ya* are simply morphophonemic variants of *ru* and *yu*, respectively, an alternation I will return to below).

(7) \[
\begin{align*}
a. & \quad \text{lank'a} - \text{ra} - \text{schi} - \text{rpari} - \text{sa} - \text{yki} \\
& \quad \text{work} \quad \text{EXH help} \quad \text{INTEN FUT 1-2} \\
& \quad \text{‘I will really help you work’} \\
b. & \quad * \text{lank'a} - \text{schi} - \text{rpari} - \text{ru} - \text{sa} - \text{yki} \\
c. & \quad \text{yacha} - \text{ya} - \text{chi} - \text{paya} - \text{wa} - \text{n} \\
& \quad \text{know} \quad \text{AUM CAU FREQ 1ob 3} \\
& \quad \text{‘He always teaches me’}
\end{align*}
\]
In (7a) \( ra \) is not supposed to precede \( rpari \), according to (6b), but since \( schi \) intervenes and (6b) is local, the sequence is grammatical. The opposite situation, (7b), in which \( ru \) follows \( schi \) (a state of affairs not allowed by (6a)), but separated from it by \( rpari \), is ungrammatical. A similar contrast in (7c) and (7d), involving the triad of affixes \( ya \), \( paya \), and \( chi \), again supports the conclusion that restriction (6b) is local but (6a) is not.

A third problem with the statements in (6) is that three of them involve the affixes \( yu \) and \( ru \), and two involve \( schi \) and \( chi \), while we would expect a totally arbitrary set of affixes involved here. We will see below that these affixes show other types of anomalies as well, and this calls for a more principled treatment, which may allow us to do away with this type of restriction altogether. What is probably a language-particular set of restrictions involves prohibitions of identical phonological sequences in successive affixes, sketched in (8).

\[
\text{(8) Phonological Restrictions}
\]

\[
a. \quad *na naya \\
b. \quad *rpari ri \\
c. \quad *...qa ... qa ...
\]

In (8a) and (8b) complete affixes are listed, and in (8c) possible segments of two affixes or of the stem. It is hard to determine whether these restrictions are absolute or simply euphonic tendencies. They clearly have a different status than the ones in (6).

2. INTERPRETATION

The discussion so far has been limited to the purely formal parts of Quechua affix order. I will now turn to the way that ordering patterns are related to the meaning of complex verbs, and the way in which meaning determines ordering possibilities. It should be mentioned right away that the semantics of individual verbs often imposes strict limits on the combinability with particular affixes, and that the same holds true for the combinability of affixes. The ordinary case is that the interpretation of affixes is strictly compositional. In (9) I give examples where a different order implies a different meaning:

\[
\text{(9) a.} \quad rpari 'with effect'/ schi 'help' \\
\quad llank'a – schi – rpari – n \\
\quad \text{work help effect 3} \\
\quad \text{‘He really helped him work’}
\]
Pending further research on the interpretation of all the individual affixes, I will assume that the ordinary case is valid for all the affixes in the group I have called 'syntactic' in (4) above, with the exception of *yu* and *ru*, to which I return below. The cases that need special treatment are the interpretation of the three affixes with fixed positions: *ku* 'reflexive', *mu* 'cis-/translocative' and *pu* 'benefactive/regressive', and the interpretation of augmentative *yu* and exhortative *ru*, which were already shown to be problematic in their order with respect to *chi* 'cause' and *schi* 'help'. We will discuss these affixes in turn in separate sections.

2.1. *Ku*

I claim that in the dialect of Chumbivilcas *ku* can undergo two operations in the phonological component: readjustment and deletion. The readjustment rule is stated in (10):

(10)  *ku* readjustment: *ku* $\rightarrow$ *ka* / ___ *mu/pu*

This rule is present in many dialects of Quechua, and part of a more general lowering phenomenon. A rule particular to Chumbivilcas is (11):

(11)  *ku* deletion: *ku* $\rightarrow$ $\emptyset$/ ___ *chi*

There are two types of evidence for rule (11). The first one involves reciprocals. (12a) shows that reciprocal *na* cannot occur without reflexive
ku. The reasons for this were given in Muysken (1981b): na affixation creates a reciprocal anaphor out of one of the arguments of the grid of the verb, and ku is needed to bind this anaphor to an antecedent, through coindexation. (12b) shows the grammatical form with both na and ku:

(12)  a. *riku-na-n-ku
      see REC3 PL
      'They see each other'
    b. riku-na-ku-n-ku
      see REC RE 3 PL

Note now that (13a) is well-formed, even though u is absent, and that (13b), with ku present, is ungrammatical:

(13)  a. riku-na-chi-n
      see REC CAU 3
      'He causes them to see each other'
    b. *riku-na-ku-chi-n
      see REC RE CAU 3

The way to reconcile these apparent contradictions, I suggest, is to assume that the S-structure representation of (13a) is something like (13b), but that there is a rule of ku deletion as in (11), operating in the phonology.

Similar evidence can be derived from the derivational suffix lli 'transform oneself into'. As the contrast between grammatical (14b), with ku present, and ungrammatical (14a), without ku, shows, lli has to cooccur with ku:

(14)  a. *punki-lli-n
      swell 3
      'It swells'
    b. punki-lli-ku-n
      swell RE 3
      'It swells'

ku does not have a clearly reflexive meaning here, but perhaps indicates that the process is directed at the object directly involved. When causative chi is present, ku cannot appear, as the contrast between (15a) and (15b) shows:

(15)  a. punki-lli-chi-n
      swell CAU 3
      'He causes it to swell'
    b. *punki-lli-ku-chi-n
      swell RE CAU 3
Again, a straightforward way to explain this is by assuming that an underlying representation as in (15b) has undergone a *ku* deletion rule. This rule is similar to the rule of *ri* deletion postulated in Muysken (1981a) to account for a similar pattern of data in Ecuadorian Quechua. I assume that it operates in the phonological component, i.e. after semantic interpretation. It is tempting to interpret the pattern in (12)-(15) differently, in terms of the phenomenon in Italian of *si* being absent in causative contexts (Zubizarreta, 1985):

(16) a. Le nubi *si* dissipano
   'The clouds dissipate'

b. Il vento ha fatto dissipare le nubi
   'The wind made the clouds dissipate'

The parallel is certainly intriguing, but this analysis would make it necessary to explain why in many other Quechua dialects *ku* can precede *chi*, while in these dialects *ku* functions in exactly the same way as in Chumbivilcas Quechua. In Muysken (to appear) the issue of the (lack of) parallelism between the Quechua and the Romance case is discussed in detail. Before concluding, I should mention that *ku* deletion is only possible when it is somehow recoverable. A form such as (17a) is not ambiguous, and (17b) is ungrammatical:

(17) a. riku - *chi* - n
   see  CAU 3
   'He causes x to see y (≠ he causes x to see himself)

b. *riku - *ku* - *chi* - n
   see  RE  CAU 3

There is simply no morphological way to express 'he causes y to see himself'.

2.2. Mu

A second instance where the interpretation of the complex verb is not strictly compositional is *mu*. This affix generally appears in its full form but is reduced before *pu*, as in (18):

(18)  mu  \rightarrow  m / _ _ _ * pu

*mu* is interpreted as ‘cislocative’ or marking movement toward the speaker with motion verbs as in (19a), and as ‘translocative’ or marking movement away from the speaker with non-motion verbs as in (19b):
(19) a. apa - mu - n  
    take CISL 3  
    'He brings'

b. ranti - mu - n  
    buy CISL 3  
    'He goes and buys'

As was implied by the schema in (4), mu has to follow both chi 'cause' and schi 'help', but interestingly enough its interpretative possibilities differ for both affixes. In (20a) we see that the sequence chimu can be ambiguous, but the same is not the case for schimu, as in (20b):

(20) a. apa - chi - mu - n  
    take CAU CISL 3  
    'He causes to bring'  
    'He goes and causes to take'

b. apa - schi - mu - n  
    take help CISL 3  
    '*He helps bring'  
    'He goes and helps take'

With chi apparently mu can reach across the intervening affix and be construed as modifying apa 'take'. The same possibility does not occur with schi. This contrast is not a peculiarity of mu, as we can see when we consider examples of object marking, e.g. wa 'first person object' in (21):

(21) apa - wa - n  
    take lob 3  
    'He takes me'

The object marker wa is part of the inflectional paradigm (which has not been discussed in this paper but cf. Muysken, 1981a), and therefore follows both chi 'cause' and schi 'help'. As (22) shows, however, its interpretation is different with the two affixes:

(22) a. apa - chi - wa - n  
    take CAU lob n  
    'He causes me to take'  
    'He causes to take me'

b. apa - schi -wa - n  
    take help lob 3  
    '*He helps me take'  
    '*He helps take me'
With both affixes it is possible to construe wa as marking the object of the predicate expressed by the affix: 'cause' and 'help'. Only with chi, however, is it possible to reach across the higher predicate and construe wa as marking the object of the stem, apa 'take'. Therefore (22a) is ambiguous, and (22b) is not. A natural way to express the contrast between chi 'cause' and schi 'help' is to say that 'cause' is a restructuring predicate and 'help' is not, and use the co-superscripting formalism of Rouveret & Vergnaud (1980) to represent (22a) and (22b) as (23a) and (23b), respectively:

(23) a. \( \text{TAKE}^q \text{ CAUSE}^q \)
    
    b. \( \text{TAKE}^p \text{ HELP}^p \)

If we give syntactic trees for (22a) and (22b), as in (24), the fact that 'cause' is a restructuring predicate has consequences for the status of the subject of the lower predicate, \( \text{NP}1 \) in (24):

(24) a. 
    \[
    \begin{array}{c}
    \text{S} \\
    \text{NP}3 \\
    \text{VP} \\
    \text{S} \\
    \text{CAUSE}^q \\
    \text{NP}1 \\
    \text{VP} \\
    \text{NP}2 \text{ TAKE}^q \\
    \end{array}
    \]

    b. 
    \[
    \begin{array}{c}
    \text{S} \\
    \text{NP}3 \\
    \text{VP} \\
    \text{S} \\
    \text{HELP}^p \\
    \text{NP}1 \\
    \text{VP} \\
    \text{NP}2 \text{ TAKE}^p \\
    \end{array}
    \]

In the theory of Rouveret & Vergnaud (1980), \( \text{NP}1 \) has lost its subject qualities in (24a), but not in (24b). Therefore the object marker wa attached to (24a) can refer to both \( \text{NP}1 \) and \( \text{NP}2 \), but in (24b) only to \( \text{NP}1 \). The link with \( \text{NP}2 \) is blocked in (24b) because there is an intervening subject, \( \text{NP}1 \).

For \( \text{mu} \) and the contrast in (20) there are two possible accounts:

(a) We assume that \( \text{mu} \) is optionally generated either as a sister to \( \text{apa} \) 'take' or to \( \text{chi} \), and that there is a rule in the syntax that moves \( \text{mu} \) to the right of \( \text{chi} \) when it has not been generated there. This would explain the ambiguity in (20a): the surface position of \( \text{mu} \) can either correspond to its underlying position, or it has been moved
there, in which case the underlying position of *mu*, relevant to semantic interpretation, is the sister position of *apa*–‘take’. The reason that (20b) would not be ambiguous is that with *schi* the subject of the lower predicate, NP1 in (24b), blocks the linking of *mu* to its trace, in the case of movement, in the same way that *wa* cannot be linked to the lower object in (22b). It should be stressed that we would have Affix Movement here, as in Pesetsky (1985), but movement in syntax rather than in LF, with a whole range of other concomitant differences ensuing between Pesetsky-style movement and the movement discussed here;

(b) We assume that predicate co-superscripting has implications for the thematic structure of the predicates involved in such a way that the semantic information contained in the representation of *apa* ‘take’ (a motion verb) becomes available for *mu* in (20a), allowing the cislocative interpretation ‘cause to bring’, but not in (20b), where there is no co-superscripting. We will return below to the theoretical implications of these two alternatives.

2.3. *Pu*

We saw in (4) that *ku*, *mu*, and *pu* have to follow all the other affixes under consideration, and are rigidly ordered among themselves. I argued that *ku* is deleted when it is not in its correct position, and that *mu* may be moved to its correct position. How about *pu*? In my present understanding of *pu* it can only be interpreted in its final position. Consider the forms in (25).

\[(25)\]
\[
a. \text{llank’a - chi - pu - wa - n} \\
   \text{work} \quad \text{CAUBEN 1ob 3} \\
   \text{‘He causes to work, for my benefit’} \\
b. \text{llank’a - schi - pu - wa - n} \\
   \text{work} \quad \text{help BEN 1ob 3} \\
   \text{‘He helps to work, for my benefit’} \\
c. \text{llank’a - pu - wa - n} \\
   \text{work} \quad \text{BEN 1ob 3} \\
   \text{‘He works for me’}
\]

Neither (25a) nor (25b) is ambiguous. Both the causing and the helping are for the benefit of the speaker, but in neither case is it implied that the people are working directly for the speaker, as in (25c). They may easily be working for the speaker’s father, etc. *puwa* does not ‘reach across’ *chi* any more than across *schi* in (25).

This observation perhaps supports a movement account of *mu*: if it
were simply a fact that under co-superscripting lexical properties of the lower predicate become available for interpretation, this would hold as much for \( pu \) as for \( mu \). That there is a contrast between (20a) and (25a) in this respect suggests that \( mu \) can occupy different positions in the underlying representation, \( pu \) does not appear to be able to. An anonymous reader suggests an alternative: \( pu \) does not participate in restructuring because benefactives are not part of the argument complex of the verb.

2.4. Yu and Ru Again

The fourth exception to the regular pattern of free order and compositional interpretation involves augmentative \( yu \) and exhortative \( ru \). Consider once again part of the example with which I began this article:

\[
\text{(26) thuni - ya - ra - chi - pu - q}
\]

fall apart AUM EXH CAU BEN AG

'Throwing over ...'

All speakers agree that the exhortative and augmentative refer to the whole action of throwing over (including the causative) in examples such as this one, not just to the lower predicate. From the semantic point of view, \( chi \) should be internal to \( yu \) and \( ru \) (here realized as \( ya \) and \( ra \)).

There are more ways in which these two suffixes are anomalous, however. Recall the non-local filter in (6a), repeated here as (27):

\[
(27) *\{\text{chi} \} ... \{\text{yu}\} \quad (\text{non-local})
\]

In addition, the rule lowering \( yu \) and \( ru \) to \( ya \) and \( ra \) cannot be stated locally, either:

\[
(28) \begin{cases}
\{ yu \} \\
\{ ru \}
\end{cases} \rightarrow
\begin{cases}
\{ ya \} /... \\
\{ ra \}
\end{cases}
\begin{cases}
\{ mu \} \\
\{ pu \} \\
\{ chi \} \\
\{ schi \} \\
\{ ri \}
\end{cases}
\]

At this stage I do not have an elegant solution to all three anomalies. It may be possible to formulate a rule, operating in the phonology, which will move \( chi \) and \( schi \) to the right of \( yu \) or \( ru \) whenever the latter would be appended at a later stage of the formation of the word tree, but this rule would still not solve our problems completely. First, it would still be allowed to append \( yu \) and \( ru \) earlier than \( chi \) or \( schi \), which is alright
in terms of linear sequence but not in terms of semantics. A separate statement would be needed to the effect that elements of the class of \textit{yu} and \textit{ru} are appended last.

Second, the anomaly does not hold only for elements such as \textit{chi}, but also for \textit{mu}, etc. Thus the intensifying element \textit{ya} in (29) has scope over both predicates:

\begin{align*}
\text{ranti} &- \text{ya} - \text{mu} - \text{ni} \\
\text{buy AUM CIS 1} \\
\text{‘I go and buy (with intensity)’}
\end{align*}

The relation between the position of \textit{yu} and \textit{ru} and their interpretation is much more complicated.

Third, postulating a movement rule for \textit{chi} and \textit{schi} avoids the non-local filter, but the structural description for the movement rule will still be non-local: no true explanation is achieved.

Fourth, the movement rule does not explain yet why the lowering rule in (28) is non-locally conditioned.

3. MORPHOLOGY AND SYNTAX

To conclude, I would like to return to the issue raised in the Introduction of the interface between morphology and syntax. In what sense are complex words like syntactic structures? There are a number of constitutive principles that they share:

A. Both are defined in terms of the notion of \textit{categorial projection of a head}.

B. In both interpretation is generally compositional, as a result of the \textit{locality of government}.

C. In both we can distinguish similar classes of predicates, as in (30), where Quechua entries for affixes are compared with French entries for lexical verbs:

\begin{align*}
\text{(30)} & & \text{\textbf{Quechua}} & & \text{\textbf{French}} \\
\text{a. control predicates} & & \text{mu ‘cislocative’} & & \text{promettre ‘promise’} \\
& & \text{naqa ‘try and ...’} & & \text{vouloir ‘want’} \\
\text{b. raising predicates} & & \text{ri ‘inchoative’} & & \text{sembler ‘seem’} \\
\text{c. non-restructuring predicates} & & \text{schi ‘help’} & & \text{laisser ‘let’} \\
& & \text{naya ‘desiderative’} & & \text{voir ‘see’}
\end{align*}
d. **restructuring predicates**
   
   chi ‘cause’
   faire ‘cause’

D. The derivation of both types of structures can be seen in terms of a T-model (Chomsky & Lasnik, 1977; Muysken, 1981a). For the formation of the Quechua verb as sketched here this model would include the following elements:

(31) 

<table>
<thead>
<tr>
<th>Affixation</th>
<th>Co-superscripting</th>
<th>Movement rules (e.g. <em>mu</em>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. readjustment</td>
<td>interpretation</td>
<td></td>
</tr>
<tr>
<td>b. deletion (e.g. <em>ku</em>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. filtering by templates</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The idea that morphology and syntax are really not separate is most clearly expressed in the Mirror Principle of Baker (1985a), which holds that morphological derivations must directly reflect syntactic derivations and vice versa. This can be visually represented as in (32):

(32) MORPHOLOGY        SYNTAX

<table>
<thead>
<tr>
<th>Underived</th>
<th>Underlying</th>
</tr>
</thead>
<tbody>
<tr>
<td>lexical item</td>
<td>level</td>
</tr>
<tr>
<td>A-mor ———— A-syn</td>
<td></td>
</tr>
<tr>
<td>B-mor ———— B-syn</td>
<td></td>
</tr>
<tr>
<td>C-mor ———— C-syn</td>
<td></td>
</tr>
<tr>
<td>inflected</td>
<td>surface</td>
</tr>
<tr>
<td>form</td>
<td>level</td>
</tr>
</tbody>
</table>

There are a number of problems with such a principle, however, which suggest a greater separation between morphology and syntax than is proposed in it:
A. The derivational order of attachment of affixes is not the same as their government hierarchy (Pesetsky, 1985), and it is the latter that determines semantic interpretation;

B. There is no 'ordering' of many syntactic properties, such as marking an element as a reciprocal anaphor, which is the effect of attaching the Quechua affix na;

C. There is no verbal correlate in the syntax to a lot of affixes, even those of the 'syntactic' (cf. (4)) class, e.g. augmentative. For the interpretation of these affixes a separate theory is needed. How then do we determine which theory is needed for what?

D. The notion of 'morphological derivation' is coherent in that it corresponds to a sequence of morpheme additions. The corresponding notion of 'syntactic derivation' as needed to deal with Quechua affixation facts is not defined in syntactic theory.

Generally morphological affixation rules mimic phrase structure rules, lexical insertions, and transformations in their effects, since morphological structures are interpreted on the basis of the same principles as syntactic structures, but this is not the same as saying that they are inseparable. We have seen in the description of Chumbivilcas Quechua affix order above that:

E. Many orders are not motivated by questions of interpretation. There are many possible interactions between affix order and interpretation in Quechua:

I. The variation in linear sequence has no semantic effect:

(33) a. phawa - y qhawa -ri- rqa- mu - y waka - ta
    run IMP look INC EXH CISL IMP cow AC
    'Run, go and watch the cow.'

b. qaylla - lla - ta chura -rqa- ri- y
    close DEL AC put EXH INC IMP
    rumi - kuna - ta
    stone PL AC
    'Put the stones in a row.'

(Cusihuaman, 1976: 210)

Even though the affixes rqa and ri occur in opposite orders, their contribution in meaning to the stem is identical in both cases.

II. Variation in order does have semantic effect:
(34) a. the examples in (9) above
   b. mikhu - naya - chi - wa - n
      eat                DESI CAU lob 3
      'It causes me to feel like eating'
      mikhu - chi - naya - wa - n
      eat                CAU DESI lob 3
      'I feel like making someone eat'
   c. riku - na - chi - ku - n - ku (Muysken, 1981b)
      see                 REC CAU RE 3 PL
      'They cause x to see each other'
      riku - chi - na - ku - n - ku
      see                 CAU REC RE 3 PL
      'They cause each other to see x'

III. Fixed order, meaning of form in part ambiguous:

(35) riku - chi - ku - ni
      see                     CAU RE 1
      'I make someone see myself/I make myself see someone'

IV. Fixed order, meaning predicted by compositional interpretation
    of sequence of affixes:

(36) a. hamu - chi - pu - wa - n
      come                  CAU BEN lob 3
      'He causes to come for me'
      b. *hamu - pu - chi - wa - n

(37) a. qawa - ysi - na - ku - n - ku
      see                 HELP REC RE 3 PL
      'They help each other see'
      b. *qawa - na - ku - ysi - n
      'Someone helps them see each other'

V. Fixed order, meaning not predicted by compositional interpretation
    of sequence of affixes:

(38) a. chura - raya - ku - n
      put               fixed RE 3
      'It stays put' (NOT: it is kept putting) (Buttner, 1983: 17)
b. *chura – ku – raya – n

c. cf. the discussion of mu and ku above

d. cf. the discussion of yu and ru above

The only thing we do not find is a situation where the order of the affixes is not restricted, but the interpretation of each pair is contrary to what compositionality would predict.

Although much remains to be understood about the order and interpretation of Quechua affixes, I hope that the above analysis has convinced the reader that the order of affixes is in part governed by rules particular to a so far little understood word formation component, and that at the same time, the interpretation of the affix order generally follows much better understood principles of compositionality and wellformedness of tree representations.