
**Observation:** More often than not, adverbs seem to come in a strict order. This order seems to hold not only in Italian, but crosslinguistically.

**Hypothesis:** There is a universal ordering of adverbs, which corresponds to a universal hierarchy of functional projections.

**Of course:** This will require looking closely at cases which seem to deviate from this order in order to see what it takes to “explain them away.”

**Adverbs seem to have an order…**

| (1) | a. Alle due, Gianni non ha **solitamenta** mica mangiato, ancora. | Italian  |
|     | b. * Alle due, Gianni non ha **mica solitamente** mangiato, ancora. |       |
| (2) | a. A deux heures, Gianni n’a **généralement pas** mangé, encore. | French |
|     | b. * A deux heures, Gianni n’a **pas généralement** mangé, encore. |       |

 Transitivity predicts we should also fine **mica > più** and **pas > plus**—yet…

| (3) | a. Non hanno **mica già** chiamato, che io sappia. | Italian |
|     | b. * Non hanno **già mica** chiamato, che io sappia. |       |
| (4) | a. Si tu n’a **pas déjà** mangé, tu peux le prendre. | French |
|     | b. * Si tu n’a **déjà pas** mangé, tu peux le prendre. |       |

| (5) | a. All’epoca non possedeva **già più** nulla. | Italian |
|     | b. * All’epoca non possedeva **più già** nulla. |
| (6) | a. A l’époque, il ne possédait **déjà plus** rien. | French |
|     | b. A l’époque, il ne possédait **plus déjà** rien. |

**Explanation:** For whatever reason, the infinitive can only raise as high as Neg, not past **pas**.
<table>
<thead>
<tr>
<th>Italian</th>
<th>French</th>
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<tbody>
<tr>
<td>a. Da allora, non ha più sempre vinto.</td>
<td>a. A partir de ce moment là, il n’a plus toujours vaincu.</td>
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<tr>
<td>‘Since then, he has no longer always won.’</td>
<td>‘Since then, he has no longer always won.’</td>
</tr>
<tr>
<td>b. * Da allora, non ha sempre più vinto.</td>
<td>b. * A partir de ce moment là, il n’a toujours plus vaincu.</td>
</tr>
<tr>
<td>più &gt; sempre</td>
<td>généralement &gt; pas &gt; déjà &gt; plus &gt; toujours...?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>So: solitamente &gt; mica &gt; gia &gt; più &gt; sempre ?</th>
<th>continuing in the same manner, we can come up with more complete hierarchy:</th>
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</thead>
<tbody>
<tr>
<td>Checking if: solitamente &gt; mica &gt; gia &gt; più &gt; sempre ...</td>
<td>francamente &gt; forunatamente &gt; evidentemente &gt; probabilmente &gt; Italian</td>
</tr>
<tr>
<td>(12) Quando si presenta un problema... ‘When a problem arises...’</td>
<td>sinceremente purtroppo chiaramente presumibilmente allora per caso goffamente</td>
</tr>
<tr>
<td>a. lui sa gia sempre come fare. ‘He knows already always how to act.’</td>
<td>solitamente &gt; mica &gt; gia &gt; più &gt; sempre &gt; completamente &gt; tutto &gt; bene (Italian)</td>
</tr>
<tr>
<td>b. * lui sa sempre gia come fare.</td>
<td>généralement &gt; pas &gt; déjà &gt; plus &gt; toujours &gt; completément &gt; tout &gt; bien (French)</td>
</tr>
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| (13) Gianni non ha mica sempre vinto.                                 |...] |
| a. Gianni non ha mica sempre vinto.                                   |...] |
| mica > sempre                                                          |...] |
| b. * Gianni non ha sempre mica vinto.                                 |...] |

| (14) Ha solitamente sempre ragione lui. ‘He is usually always right.’ |...] |
| a. Ha solitamente sempre ragione lui.                                 |...] |
| solitamente > sempre                                                 |...] |
| b. * Ha sempre solitamente ragione lui.                               |...] |

| (15) Da allora, non accetta mica più sempre i nostri inviti.           |...] |
| a. Da allora, non accetta mica più sempre i nostri inviti.            |...] |
| mica > sempre piu i nostri inviti.                                    |...] |
| b. * Da allora, non accetta mica sempre più i nostri inviti.          |...] |
| c. * Da allora, non accetta sempre mica più i nostri inviti.          |...] |
| d. * Da allora, non accetta sempre più mica i nostri inviti.          |...] |
| e. * Da allora, non accetta più mica sempre i nostri inviti.          |...] |
| f. * Da allora, non accetta più sempre mica i nostri inviti.          |...] |

| (16) A quest’ora, non ha solitamente mica gia più fame. ‘At this time, he isn’t usually not already any longer hungry.’ |...] |

So, all is as predicted in Italian. The French analog is toujours ‘always’.
The postverbal space

The problem: sempre > mica > più, yet with a pause and some stress, you can get:

(23) Da allora, non li accetta sempre # mica PIÚ.

'Since then, he doesn’t accept them always not any longer.'

If the ordering hypothesis is right, mica PIÚ must be in a different “space” than the preverbal adverbs.

The postverbal space seems to observe the same ordering restriction as the preverbal space, however.

(24) a. Gianni non vince le sue partite già più sempre BENE.
    'G. does not win his matches already any longer always well.'
   b. * Gianni non vince le sue partite già sempre più BENE.
   c. * Gianni non vince le sue partite già bene più SEMPRE.
   d. * Gianni non vince le sue partite sempre già più BENE.
   e. * Gianni non vince le sue partite già più sempre BENE.
   f. * Gianni non vince le sue partite già più bene SEMPRE.

This also seems to work for low adverbs but not for high adverbs (which generally can’t appear postverbally). Higher adverbs have to be “de-accented” and follow the main sentence stress (and therefore also any postverbal low adverbs) if they are to appear postverbally.

Are the postverbal and preverbal spaces independent? Or created by movement?

Point one: It seems to be possible to move adverbs around.

The interpretation of the adverb is still as if it were in its base position.

(Suggesting that it is an A-bar-chain)

(25) How elegantly do you think he was dressed?

(26) Il a bien dû se comporter.

he has well had to behave

However, often you can’t “subvert the order” (get the “wrong” surface order) by such movement. The generalization seems to be that wh-movement can change the order, but movement to a non-operator (that is, non-wh, non-focus) position seems not to be able to (at least in Dutch and French).

There are cases which appear to have adverbs generated in different positions.

(27) a. John has answered their questions cleverly. The answers are clever.
   b. John cleverly has answered their questions. John is clever.
   c. John has cleverly answered their questions. Ambiguous.

There seem to be several positions where cleverly (stupidly) can be generated—which is made more plausible by the fact that they can all be filled at once (and they mean different things).

(28) John has cleverly been cleverly answering their questions cleverly.
    John has cleverly been stupidly answering their questions cleverly.
    (John is clever, the answering was stupid, but the answers were clever).

So, one adverb can appear in several places, but with different interpretations.

Ideally, there is a one-to-one correlation between clausal position and interpretation, so we can essentially think of this situations as three different adverbs that sound the same.

Same holds for slowly—the difference in interpretation is subtle, but probably real.

(29) a. He has been slowly testing some bulbs. The whole testing was slow.
   b. He has been testing some bulbs slowly. Each testing was slow.

Back to Italian, it doesn’t seem like the adverbs in the postverbal space have a different interpretation (aside from focus). In particular, mica, più are still understood as taking scope over sempre.

(30) a. Da allora, non accetta mica più sempre i nostri inviti.
    b. * Da allora, non accetta i nostri inviti mica più sempre.
    'Since then, he doesn’t accept our invitations not any longer always.'
    b. Da allora, non accetta sempre i nostri inviti mica PIÚ.

Conclusion: They are in the same place in both cases—everything else moved.

(31) a. non accetta mica più sempre i nostri inviti.
   b. non accetta [i nostri inviti] i mica più sempre ti.
   c. non accetta [sempre i nostri inviti] i mica più ti.

Incidentally, this is also good because it isn’t movement of one adverb over another (which should be blocked by shortest move), but is movement of something different (a whole XP) over an adverb.

Cinque looks at more complicated movements in Italian—we might look at similar things in English.

English.

(32) a. Honestly, I am unfortunately unable to help you.
   b. * Unfortunately I am honestly unable to help you.

(33) a. Fortunately, he had evidently had his own opinion on the matter.
   b. * Evidently he had fortunately had his own opinion on the matter.
So, we have:

(48) \textit{usually > already, no longer, always > completely}

Lining it up with Italian, etc., we have

\begin{center}
\text{English:}
frankly > fortunately > evidently > probably > now > perhaps > wisely > usually > already > no longer > always > completely > well
\end{center}

Back to that postverbal spot. \textit{Well} seems to only sit in the postverbal spot:

(49) a. * John well concedes.
   b. John concedes well.

And always first...

(50) a. John concedes well usually.
   b. * John concedes usually well.
   c. John doesn’t play well any longer.
   d. * John doesn’t play any longer well.

In fact, that postverbal spot seems like it goes backwards.

(51) a. He hasn’t ruined it completely yet.
   b. He missed the target completely usually.
   c. He can’t play any longer usually (at this point).

By hypothesis the base-generated order is \textit{yet completely}, as follows:

(52) John didn’t yet completely grasp the concept.

So, how do we get sentences like (51a)?

(53) John didn’t [\textit{grasp the concept}] \textit{completely t_i}.
   \[
   \begin{array}{c}
   \text{[\textit{grasp the concept}]}
   \end{array}
   \]

(54) John didn’t [ [\textit{grasp the concept}] \textit{completely t_i} \textit{yet t_j}.
   \[
   \begin{array}{c}
   \text{[\textit{grasp the concept}]}
   \end{array}
   \]

A series of XP-movements can reverse the order. Over \textit{completely}, then over \textit{yet}. 
Incidentally, we can hop the larger XP over yet without moving the VP over completely.

(55) John didn’t [ completely grasp the concept] yet \textit{t}_i.

So, in English we seem to have the option of hopping over completely or over yet.

The fact that \textit{well} can only follow the VP suggests that we have to move the VP over \textit{well}.

(56) (underlying form) \quad \text{John} \text{ washed} \text{ the} \text{ dishes}.

(57) (surface form) \quad \text{John} \text{ washed} \text{ the} \text{ dishes} \text{ well} \text{ } \textit{t}_i.

You can hop over \textit{completely, already}, usually, \textit{yet}...

(58) a. John already completely failed the test.
b. John already [ failed the test ] \textit{t}_i completely \textit{t}_i.
c. John [ completely failed the test ] \textit{t}_i already \textit{t}_i.
d. John [ failed the test ] \textit{t}_i completely \textit{t}_i already \textit{t}_i.

(59) a. John usually completely fails the test.
b. John usually [ fails the test ] \textit{t}_i completely \textit{t}_i.
c. John [ completely fails the test ] \textit{t}_i usually \textit{t}_i.
d. John [ fails the test ] \textit{t}_i completely \textit{t}_i usually \textit{t}_i.

(60) a. John has usually already completely failed the test (by now).
b. John has usually already [ failed the test ] \textit{t}_i completely \textit{t}_i.
c. John has usually [ completely failed the test ] \textit{t}_i already \textit{t}_i.
d. John has [ failed the test ] \textit{t}_i completely \textit{t}_i already \textit{t}_i.
e. John has [ completely failed the test ] \textit{t}_i already \textit{t}_i usually \textit{t}_i.
f. John has [ completely failed the test ] \textit{t}_i already \textit{t}_i \textit{t}_j usually \textit{t}_k.
g. John has [ [ failed the test ] [ completely failed the test ] ] \textit{t}_i \textit{k} \textit{t}_j \textit{k} usually \textit{t}_k.

But \textit{always}, for some reason, doesn’t like to be hopped over.

(61) a. John always plays video games.
b. * John [ plays video games ] \textit{t}_i always \textit{t}_i.

b. * John usually [ plays video games ] \textit{t}_i always \textit{t}_i.
c. John [ always plays video games ] \textit{t}_j usually \textit{t}_j.
d. * John [ [ plays video games ] ] \textit{t}_i always \textit{t}_i \textit{t}_j usually \textit{t}_j.

(63) a. John always completely misses the target.
b. John always [ misses the target ] \textit{t}_i completely \textit{t}_i.
c. * John [ completely misses the target ] \textit{t}_j always \textit{t}_j.
d. * John [ misses the target ] \textit{t}_i completely \textit{t}_i \textit{t}_j always \textit{t}_j.

In summary: The English pattern looks like this:

\textit{well} \quad \text{XP-movement is required} \quad \text{over} \quad \textit{well}.
\textit{always} \quad \text{XP-movement is forbidden} \quad \text{over} \quad \textit{always}.
\textit{completely, usually, already, yet}... \text{XP-movement is} \text{ allowed}.

Interesting...
Maybe we don’t have to go as far away as Malagasy to find this kind of pattern.

A question remains: \textbf{Where} are those XPs moving to?
Cinque says that adverbs are generally in Spec.

So, do we have something like this? What is TargetP?

\hspace{1cm} (64) \quad \text{TargetP} \rightarrow \text{Target} \rightarrow \text{Target°} \rightarrow \text{YetP} \rightarrow \text{Yet} \rightarrow \text{Yet°} \rightarrow \text{ComplP} \rightarrow \text{Compl} \rightarrow \text{Compl°} \rightarrow ...

\hspace{1cm} (65) \quad \text{YetP} \rightarrow \text{Yet} \rightarrow \text{ComplP} \rightarrow \text{Compl} \rightarrow \text{Compl°} \rightarrow ...

This isn’t to say that adverbs are heads in \textit{all} languages, necessarily—consider these frightening examples from Italian:
Da allora, non hanno rimesso di solito mica più sempre completamente tutto bene in ordine. ‘Since then, they haven’t usually not any longer always put everything well in order.’

That pretty strongly suggests that there is a **head** between those adverbs (head-movement of the verb to one of those heads). Italian might very well look like this:

```
X 1 P
3
di solito
X 1 X 2 P
3
mica
X 2 X 3 P
3
più
X 3 X 4 P
3
sempre
X 4 ...
```

The heads and more evidence for the hierarchy

The Mirror Principle: The order of the morphological affixes directly reflects the syntactic hierarchy.

(74) NP V T Agr

a. je parl ai s
b. tu parl ai s
spoken PAST person+number

c. il parl ai t

(75) NP V T Agr

a. je parl er ai
b. tu parl er as
spoken FUT person+unnumber

c. il parl er a

If the finite verb moves to T and then to Agr, it would look like this:

```
(76) AgrP
Agr
TP
[T' V+T VP
1 1 1
V
V'
...
...
]
```

```
(77) AgrP
Agr
TP
[V+T]+Agr
T'
V+T VP
1 1 1
V
V'
...
...
```

So, in [V+T]+Agr, T is closer to the verb and is the head that was moved to first.

**Mirror Principle.** Morphological derivations (suffixation, prefixation, etc.) directly reflect syntactic derivations...

We can also see some universals in the order of morphemes in agglutinating languages:

(78) ku pwun-i cap-hi-si-ess-ess-keyyss-sup-ki-kka? Korean

*that person-NOM catch-PASS-HON-ANT-PAST-EPISTEM-HON-EVID-Q
Did you feel that he had been caught?*

By the Mirror Principle, things **closer to the verb** are **lower in the tree...**
So, Speech Act (kka) > Evidential (ti) > Conjecture (keyss) > Past (ess) > Anterior (ess) > Voice (hi) > VP.

Consider frankly > allegedly > probably > once > no longer

Frankly kind of modifies the speech act
Allegedly kind of modifies an evidential claim
Probably kind of modifies a conjecture
Once kind of specifies a past marker
No longer kind of specifies a perfect marking

And what we seem to find is that the order of the adverbs correlates with the order of their associated heads… It’s as if we had:

(79) ... Koritalian, glossed in English

And, although there are gaps in the available evidence, it seems like things stick to this hierarchy across languages.

<table>
<thead>
<tr>
<th>Cinque’s final matchup</th>
</tr>
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<tbody>
<tr>
<td>frankly</td>
</tr>
<tr>
<td>fortunately</td>
</tr>
<tr>
<td>allegedly</td>
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<td>probably</td>
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<td>once</td>
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<td>briefly</td>
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<td>characteristically(?)</td>
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<td>almost</td>
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<td>tutto</td>
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<td>well</td>
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<td>fast/early</td>
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<td>again</td>
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<td>often</td>
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<td>completely</td>
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</table>
Conclusions, implications, residual questions...

• Looks like it is actually possible that languages have an invariant hierarchy of functional projections, which is good from a language acquisition point of view.

• Nevertheless, that’s a horrendously complicated phrase structure, isn’t it? What about The Minimalist Program and “There is No AgrP”?

• Yeah, but the problem with Agr was that it doesn’t contribute to the interpretation.

• All these projections are motivated by interpretation. Aspect, voice, modality, etc… To the extent that all languages have utterances that have the same range of interpretations, we have crosslinguistic evidence for these things which contribute those meanings.

• So—we’re still in the domain of the Minimalist Program… these projections all have an interpretive role to play.

• Next question: In a simple sentence like John left, do we have all 40-some projections?

• Possibly not—perhaps only if there is morphology or interpretation to support.

• However, since languages can differ (and even within the same language for different verb forms) as to where the verb is with respect to the adverbs, the easiest way to state the restrictions would be to say that the verb moves up to a certain functional head (rather than stating for each adverb which kinds of verb it can precede/follow).