

Cyclic Spell-Out and the size of Phases

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Although the hypothesis of Cyclic Spell-Out (CSO) has been widely adopted in recent Minimalist investigations, many aspects of this important operation remain poorly understood and there has been little evidence of the right phono-syntactic kind available to throw light on the basic mechanics of such a procedure. This paper shows how the interaction of syntax and phonology in tone sandhi patterns found in Taiwanese provides a critical window into the process of CSO and in certain cases allows one to observe very clearly just how such an operation applies to a syntactic input form. The patterning observed leads to a number of new insights about CSO and results in the significant conclusion that the regular input to CSO is in fact only fully clausal CP constituents and not smaller vP units, contrary to commonly-held assumptions. Such a conclusion motivated by phono-syntactic patterns is noted to have potentially far-reaching consequences for analyses of successive cyclic movement as much of recent minimalist syntax has been based on the assumption that vP constituents are phases and so require movement to their edges prior to incorporation in any larger structure.

In Taiwanese, tone sandhi (TS) processes provide important information about underlying syntactic structure, and TS occurs in a word only if it is a syntactic head followed by a phonetically overt complement. TS therefore fails to occur in the final words of adjuncts, elements in specifier positions and words that are sentence-final. A single odd exception to this generalisation is the observation that the particle *kong* (indicating emphatic obviousness) does undergo TS in S-final position. This element has recently developed from the verb *kong* 'to say' and is assumed to have grammaticalized as a new mood-like C^0 , just as general verbs of saying have been noted to grammaticalize as complementizers/ C^0 s in other languages (including cognates to *kong* in other forms of Chinese). What is puzzling about *kong* is its irregular TS and the fact that it occurs in S-final position, given that Taiwanese is elsewhere regularly head-initial. Both irregularities can be given a single, simple explanation if it is hypothesized that *kong* is inserted into a regular head-initial CP with a following IP complement and then this IP complement undergoes raising leftwards to SpecCP: [_{CP} *kong* IP] → [_{CP} IP_k [_C *kong* t_k]]. TS can be suggested to critically apply *before* the IP-raising, when *kong* will be a head with a following overt complement, which will trigger TS in *kong*. It will also account for the significant fact that no TS occurs in the final syllable of the IP: although this syllable might appear to be a natural candidate for TS in the overt [IP *kong*] form, if TS applies to an underlying [*kong* IP] sequence, here it will actually be S-final and hence be correctly expected not to show TS. Importantly, if TS is now taken to apply before IP-movement as suggested, this indicates that the IP-movement must either take place at PF (as TS is a *phonological* process occurring in PF), or it can be seen as strong evidence for CSO. As the IP-raising can be shown to have interpretative effects which are not expected if it were to be purely PF movement, the conclusion is that *kong*-IP raising must indeed be mid-derivational and hence an occurrence of CSO. Assuming that IP-movement is to SpecCP, the patterns also importantly indicate that CSO occurs to a phase *before* its outer/external specifier is constructed.

The paper then goes on to compare *kong* forms with object topicalization in Taiwanese and English *wh*-sentential-stress patterns analyzed in Bresnan (1971) as arguments for CSO. When objects are topicalized in Taiwanese it is found that the verb which selects them significantly does *not* show TS. This suggests that TS applies after topicalization, when the V is S-final ([..OB_k...V t_k], as if TS applied before topicalization the overt object should cause TS on the preceding V [..V OB]). Now, if it were to be true that vP constituents are phases and an input to CSO before CPs, it would falsely be expected that an object *would* cause TS on its preceding verb prior to raising in a [_{vP} SUB V OB] sequence (remembering that the *kong* patterns indicate that a phase's external Specifier, hence Spec_{vP} here, is only constructed after CSO of a phase). As TS does not occur, this provides a clear empirical argument that vP constituents are actually *not* genuine inputs to the process of CSO and that CSO only applies to full clausal constituents as phases/significant cycles. The Taiwanese-based TS arguments are then shown to be further supported by Bresnan's observation about English that raised *wh*-objects significantly (and unexpectedly) show sentential stress: this occurs via application of the sentential stress rule to the object in its S-final in situ position when a full CP phase is inputted to CSO (before creation of the CP phases's outer Spec, which the *wh*-object later raises to). Finally, certain critical differences between English *wh*-movement and Taiwanese object topicalization are shown to result from the fact that the latter targets a lower clausal position than SpecCP.

References

Bresnan, Joan. 1971. Sentence Stress and Syntactic Transformations. *Language* XLVII.2, 257-281. Reprinted in: *Syntactic Argumentation*, (1979) 233-257, edited by D. J. Napoli & E. Rando, Georgetown University Press.