Phonological Derivation by Phase: Evidence from Basque

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In this talk I argue for "phonological derivation by phase" (PDbP), which combines elements of Lexical Phonology (Kiparsky 1982), Distributed Morphology (DM; Halle & Marantz 1993), and Derivation by Phase (Chomsky 2001). The basis for this theory is the notion that phonology is cyclic as a direct consequence of cyclicity (i.e., phasality) in syntax (Marvin 2002). I argue that the domains of phonological rule application, both above and below the word level, come for free when we assume DM and a phasal syntax. Specifically, phonological operations apply at each application of Spell-Out, and are subject to the Phase Impenetrability Condition (PIC; Chomsky 2001), which renders a spelled-out chunk inaccessible to operations on later cycles. This means that each phonological string becomes inaccessible subsequent to the transfer of another string to PHON. By preventing 'reaching back too far' into the derivation, the PIC derives the effects previously attributed to the erasure of morpheme boundaries at the end of every cycle (Siegel 1974, Mohanan 1982), opacifying the results of earlier cycles. In other words, a rule can only affect something on its own cycle and/or the previous one, nothing more: word-building operations and phonological rules interleave, and the PIC prevents modifying previous cycles after they are built.

The strong claim made by PDbP is that 'morpheme-level' phases defined by the DM categorial heads *n* and *a* (Marantz 2001, Marvin 2002) can replace Lexical Phonology's hierarchy of strata, and that 'clause-level' phases (defined by *v*, ApplH, D, C, etc.) can replace the prosodic hierarchy. PDbP maintains the basic division between lexical and post-lexical rules by arguing that all phonological rules obey the PIC, but in one of two different ways. Lexical rules must obey the PIC at both the morpheme and the clausal levels. Post-lexical rules apply once a sequence of morphemes has been turned into an atomic unit, and obey the PIC only at the clausal level.

I present a case study in PDbP from Lekeitio Basque. This dialect has two rules affecting vowels which apply in the same contexts, both within and across words. One obligatorily raises the first of two consecutive vowels; a later rule optionally assimilates the second vowel to the first, if the second is not round. I focus specifically on the assimilation rule. In (1a), assimilation occurs between the adjective and suffixal determiner, but not between the adjective and the noun which it modifies. In (1b), the initial vowel in the auxiliary assimilates to the final vowel in the verb.

Hualde & Elordieta (1992) note that the assimilation process behaves in many respects like a lexical rule, yet it can apply across (some) word boundaries and appears sensitive to morphosyntactic information. Elordieta (1997 et seq.) argues that the relevant environment for both of these rules is within a feature-checking chain: (C, T), (T, *v*), (T, D), (*v*, D), and (D, N). But such an analysis cannot explain, for example, why assimilation can occur between a root and an affix, as in (2). Nor does it explain why assimilation cannot occur between (the D head of) a subject and a verb, as in (3). If feature-checking triggered the assimilation rule, this would be unexpected, since the subject agrees in ϕ-features with the verbal complex.

I argue that the assimilation rules are lexical, and as such can apply only between two adjacent morpheme-level Spell-Out domains; all the data are compatible with a PDbP analysis. For example, in (1a) *estu* is accessible to the determiner *-a*: the former is spelled out in the complement of D, and the latter in its edge; these are adjacent domains, so assimilation can apply. However, assimilation is blocked between *ortu* and *estu* because even though the roots are ultimately string-adjacent, they are not spelled out in adjacent domains; see (4). A phase-based analysis also explains why an auxiliary assimilates to the main verb. Following Laka (1990), I show the main verb moving to AspP, with the auxiliary heading TP; movement only to *v* or all the way to T will produce the same results. The verb and auxiliary are spelled out together in the complement of C regardless, so assimilation is free to apply; see (5).

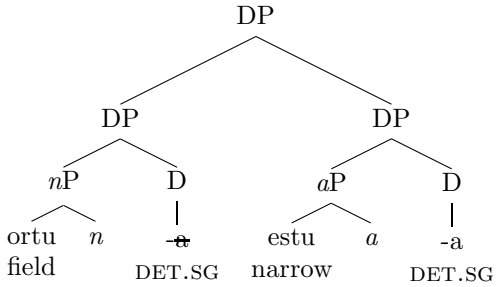
(1)

a.	ortu estu-a	→ ortu estuu	b.	dxo e-ba-n	→ dxo oban
	field narrow-DET.SG	'narrow field'		hit 3ERG-NONPRES-PAST	'(s)he hit it'

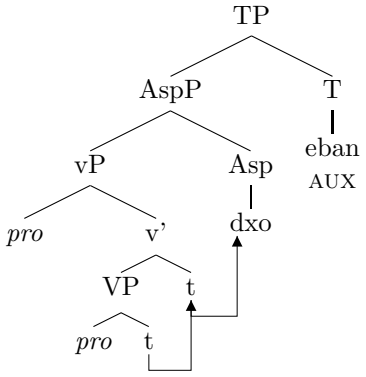
(2) soro-én-a → soruúna
crazy-SUP-DET.SG 'the craziest'

(3) lagun-a etorri da
friend-DET.SG come AUX 'the friend has come'

(4)



(5) dxo e-ba-n → dxo oban
hit 3ERG-NONPRES-PAST '(s)he hit it'



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