The phonology of cliticization in Stratal Optimality Theory

Ricardo Bermúdez-Otero (*University of Manchester*)

Please cite as: Bermúdez-Otero, Ricardo (2006). 'The phonology of cliticization in Stratal Optimality Theory.' Handout of paper presented at Annual Meeting of the Linguistics Association of Great Britain, Newcastle upon Tyne, 31 August 2006. Available at www.bermudez-otero.com/clitics.pdf

INTRODUCTION

§1 In recent years, the notion that special clitics (Zwicky 1977) constitute the morphology of phrases has gained increasing currency (e.g. Anderson 1992, 2000, 2005; Légendre 2001; Spencer 2001).

In this view, special clitics are introduced by postsyntactic morphological operations, which spell out features associated with a phrasal domain by modifying its phonological realization.

§2 In a recent, comprehensive, and influential statement of this theory, Anderson (2005) assumes a lexicalist version of Stratal Optimality Theory (Kiparsky 1998, 2000) to describe the phonological behaviour of special clitics.

Within this overall framework, Anderson (2005) makes two particularly strong claims:

- that all cliticization is postlexical;

and

- that all the phonological effects of cliticization emerge from 'Stray Adjunction', by which Anderson means the specific way in which the clitic is incorporated into prosodic structure (see Anderson 2005: 13).

§3 In this paper, however, I shall argue that Anderson's approach to the phonology of cliticization is inadequate:

more specifically, familiar evidence from Catalan (Harris 1993) indicates that, just like affixes, clitics must be allowed to specify the phonological level to which the domain created by the clitic-host combination belongs.

§4 This result is entirely compatible with the principles of Stratal Optimality Theory broadly construed (Bermúdez-Otero forthcoming), but has important consequences for the status of special clitics:

- special clitics display the same range of phonological interactions with their hosts as affixes;
- the distinction between word morphology (affixation) and phrase morphology (special cliticization) may be untenable (Bermúdez-Otero & Payne in prep.).

TYPES OF GRAMMATICAL CONDITIONING IN PHONOLOGY

§5 If we are to probe the grammatical nature of special clitics by means of evidence from their phonological interactions with their hosts, we need a restrictive and highly articulated theory of grammatical conditioning in phonology.

Fortunately, the phonological framework adopted by Anderson, Stratal OT, provides such a theory.

Basic principles of Stratal OT (Bermúdez-Otero forthcoming: ch. 2)

§6 *The cycle*

The phonological function $\mathcal{P}$ is specified in optimality-theoretic terms:

$\mathcal{P}(x) = \mathcal{E}val(\mathcal{G}en(x))$

However, $\mathcal{P}$ applies cyclically (in the sense of Chomsky & Halle 1968: 15) over a nested hierarchy of phonological domains associated with the grammatical structure of a linguistic expression.

§7 *Domain simplification*

Every phonological domain is exactly coextensive with some grammatical category (or construction),

…but not every grammatical category defines a phonological domain.

For alternative views of the relationship between grammatical categories and phonological domains, see Inkelas (1990) and Orgun (1996).

§8 *Level segregation*

Domains associated with grammatical categories of different types may invoke different rankings of CON: e.g.

- domains $e = [_c\,[_b\,[_a\,x]]\,[_b\,[_a\,y]\,z]]$
- function $\mathcal{P}(e) = \mathcal{E}val_c(\mathcal{G}en(\,\mathcal{E}val_b(\mathcal{G}en(\,\mathcal{E}val_a(\mathcal{G}en(x))\,)),\mathcal{E}val_b(\mathcal{G}en(\,\mathcal{E}val_a(\mathcal{G}en(y)),z))\,))$

Kiparsky (1998, 2000) and Bermúdez-Otero (forthcoming) countenance exactly three levels: the stem, word, and phrase levels. Bermúdez-Otero (forthcoming: ch. 2) formulates explicit restrictions on the ascription of particular types of grammatical category to particular levels.

Grammatical conditioning of phonology in Stratal OT

§9 In stratal OT, grammatical information conditions the application of phonology in three ways:

through
- level and cophonology selection,
- cyclic misapplication,

and
- prosodic bounding.

§10 *Level selection*

As we saw in §8, the grammatical category which defines a domain δ may condition the application of $\mathcal{P}$ to δ simply by selecting the ranking of constraints applicable to δ.

A classic example (English):

- *-ity* suffixation creates Level-I (stem-level) phonological domains;
- *-ing* suffixation creates Level-II (word-level) phonological domains.

§11 *Cophonology selection*

Work by Anttila (2002) and Inkelas & Zoll (2003) suggests that constraint hierarchy associated with a phonological level may specify a partial ordering of constraints. In

that case, different categories belonging to the same level may select different total orderings compatible with the master hierarchy.

English example (Bermúdez-Otero & McMahon 2006: §4);

- The Level-I master hierarchy specifies the rankings for trochaic shortening, but does not specify the ranking of constraints on extrametricality.
- Nouns and suffixed adjectives select a total ranking with final syllable extrametricality: e.g. *sincēre* → *sin*(*cĕri*)<ty>.
- Verbs, underived adjectives, and *-ic* adjectives select a total ranking with final consonant extrametricality: e.g. *cyclōne* → *cy*(*clŏni*)<*c*>.

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§12 The concept of cophonology also affords a new approach to nonconcatenative morphology. In reduplication, for example, Inkelas & Zoll (2005) analyse the reduplicant as a copy of the stem subject to a special truncating cophonology:

E.g. Chumash *tʃʰum-tʃʰumaʃ* 'islanders'

domain structure	$[_{Y}\,[_{X(truncatory)}\,tʃ^{h}umaʃ][_{X(normal)}\,tʃ^{h}umaʃ]]$
inner cycle (level X)	$tʃ^{h}um\cancel{aʃ}$ $tʃ^{h}umaʃ$
outer cycle (level Y)	$tʃ^{h}umtʃ^{h}umaʃ$

§13 This approach to nonconcatenative morphology enables one to impose the following constraint on morphophonological operations:

Morph Integrity Hypothesis (Bermúdez-Otero forthcoming: ch. 2)

a. The morphology can manipulate phonological material by:
   (i) choosing between alternative allomorphs,
   (ii) concatenating morphs,
   (iii) associating morphological units with cophonologies.
b. The morphology cannot directly alter the phonological content of morph.

This avoids postulating WFRs with the same generative power as ordinary phonological rules (cf. Anderson 1992). However, whilst the Morph Integrity Hypothesis requires the recognition of morphological pieces such as morphs, it does not presuppose the existence of classical morphemes (with or without lexical entries), and so it is entirely compatible with inferential-realizational models of morphology (Stump 2001).

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§14 *Cyclic misapplication*

Cyclic misapplication occurs when a grammatical category C triggers a phonological cycle, but there is some phonological material outside C that could have caused or prevented the application of a phonological process in that cycle.

Example: underapplication of dentalization in Northern Irish English (Harris 1989)

	tenor	*tenner*
domain structure	$[_{WL}\,[_{SL}\,tɛnəɹ]]$	$[_{WL}\,[_{SL}\,tɛn]\,əɹ]$
SL (dentalization)	tæn̪ə˞ɹ	tɛˑən
WL	tæn̪ə˞ɹ	tɛˑə**n**ə˞ɹ

§15 *Prosodic bounding*

Constraints on grammar-prosody alignment control the location of prosodic boundaries, and prosodic boundaries can in turn block the application of phonological processes.

Example: Canadian Raising blocked by the internal ω-boundary in compounds

	nitrate	*high school*	*highschool* (univerbated)
morphology	[$_N$ nitrate]	[$_N$ [$_A$ high][$_N$ school]	[$_N$ highschool]
prosody	[$_\omega$ ˈn**əi**$_{\text{ı}}$treɪt]	[$_\omega$, [$_\omega$ ˈh**aɪ**][$_\omega$ $_{\text{ı}}$skul]]	[$_\omega$ ˈh**əi**$_{\text{ı}}$skul]

§16 Note that this taxonomy of grammatical conditioning has intertheoretical validity: e.g.

- monostratal versions of OT replicate cophonology selection by means of constraint indexing (see Inkelas & Zoll 2003);
- monostratal versions of OT replicate cyclic misapplication effects by means of output-output correspondence constraints (e.g. Benua);
- more generally, virtually everyone acknowledges that syntax and morphology can affect phonology both procedurally (e.g. through the cycle) and representationally (e.g. through the prosodic hierarchy); see Scheer (forthcoming: §7.2),

THE PHONOLOGY OF CLITICIZATION IN ANDERSON (2005)

Anderson's (2005) basic postulates

§17 *Lexicalism*

> First, I assume that words are built (including affixation) within the lexical phonology. As a result, affixation processes have access to the form and meaning of stems, and can depend on (and affect) this in idiosyncratic ways. Second, words are combined with one another post-lexically, through the syntax. On the assumption of the Lexicalist Hypothesis (cf. Anderson (1992)), the syntax does not manipulate or have access to the internal form of words […]
> Anderson (2005: 33-34)

§18 *Simple clitics vs special clitics*

Simple clitic = An ordinary lexical item that happens to lack a ω node.

Special clitic = The postsyntactic morphological realization of a feature of a phrasal domain.

§19 *Postlexical cliticization*

It necessarily follows from Anderson's definitions that all cliticization takes place postlexically:

- Simple clitics are ordinary lexical items: they behave normally in the syntax and undergo Stray Adjunction (see §2) in the postlexical phonology.
- Special clitics are introduced by the postsyntactic (phrasal) morphology, just as affixes are introduced by the presyntactic (lexical) morphology.

§20 *The rôle of Stray Adjunction types*

From Anderson's claim that all cliticization is postlexical it follows that:

- Cliticization may not feed or bleed lexical phonological processes, but must counterfeed or counterbleed them.

- If, as is commonly assumed, the postlexical phonology applies noncyclically across the board, then cliticization does not involve cophonology selection or cyclic misapplication;

  all grammatical conditioning in the phonological interaction between a clitic and its host arises indirectly from the manner in which the clitic material is incorporated into prosodic structure, i.e. from the clitic's Stray Adjunction type.

Types of Stray Adjunction

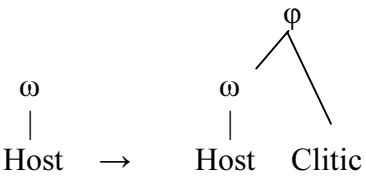
§21 Anderson (2005) basically follows Selkirk's (1996) optimality-theoretic approach to the prosodification of functional elements, adapted to his lexicalist framework.

Relevant constraints:

- EXHAUSTIVITY(φ)
  Every phonological phrase (φ) is exhaustively composed of prosodic words (ω).
- NONRECURSIVE(ω)
  No prosodic word (ω) directly dominates another prosodic word (ω).
- PROSODICFAITHFULNESS
  Prosodic structure in the input (i.e. lexical prosodic structure) is preserved in the output (i.e. is preserved postlexically).

These constraints give rise to three main types of Stray Adjunction:
- free cliticization
- affixal cliticization
- internal cliticization

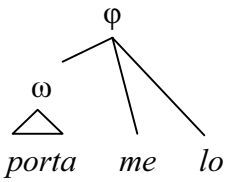
§22 *Free cliticization*



Ranking schema: FAITHFULNESS, NONRECURSIVE(ω) » EXHAUSTIVITY(φ)

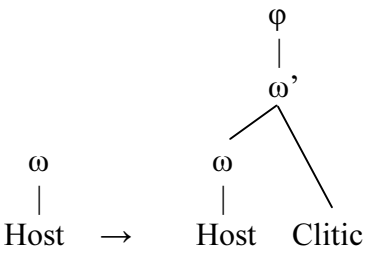
Example: Standard Italian (Anderson 2005: 55)

e.g.	*pórta*	'bring'
	pórta=me=lo	'bring it to me'



Cliticization does not affect the stress profile of the host, and clitic sequences remain stressless.

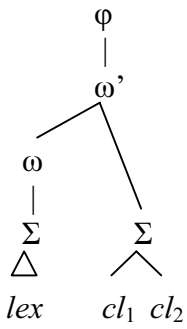
§23 *Affixal cliticization*



Ranking schema: FAITHFULNESS, EXHAUSTIVITY(φ) » NONRECURSIVE(ω)

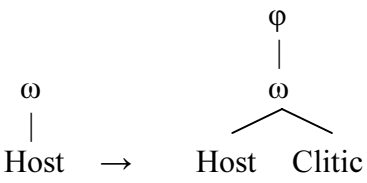
Example: Neapolitan Italian (Anderson 1995: 53)

e.g. *péttina* 'comb'
péttina=tí=llə 'comb it for you'



Cliticization does not affect the internal, lexically derived foot structure of the host, but clitic sequences can be footed.

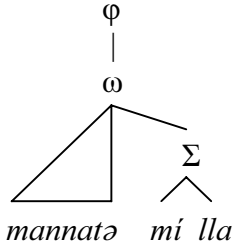
§24 *Internal cliticization*



Ranking schema: EXHAUSTIVITY(φ), NONRECURSIVE(ω) » FAITHFULNESS

Example: Lucanian Italian (Anderson 2005: 54)

e.g. *mannátə* 'send'
mannatə=mí=lla 'send it to me'



Cliticization changes the lexically derived foot structure of the host: the clitic-host combination is re-stressed as a single word.

A CATALAN COUNTEREXAMPLE

§25 The Catalan 3SG.NEUT.ACC clitic *=ho* is a counterexample to Anderson's approach to the phonology of cliticization:

☞ The encliticization of *=ho* bleeds a lexical (word-level) process of laryngeal neutralization; cf. §20 above.

Are the Romance pronominal clitics really special clitics?

§26 Many scholars treat the Romance pronominal clitics as agreement affixes rather than special clitics (e.g. Miller & Sag 1997, Monachesi 1999).

However, Anderson explicitly intends his theory of special cliticization to apply to Romance pronominal clitics, including Catalan (Anderson 2005: ch. 8).

§27 Main differences between Catalan pronominal clitics and Catalan agreement affixes:

- *Position*
  Clitics appear in postverbal position with infinitives, gerunds, and positive imperatives, and in preverbal position with all other verb forms (Hualde 1992: §2.1.8.2). In contrast, subject agreement affixes are not mobile and are exclusively suffixal.

  Ho=*vaig* *fer* *per* *a* *tu* (notice clitic climbing)
  3SG.NEUT.ACC=1SG.PAST do.INF for to you
  'I did it for you'

  *Rep=****ho***
  receive.IMP=3SG.NEUT.ACC
  'Receive it!'

- *Partially complementary distribution with full NPs*
  Catalan has clitic doubling in a range of environments (e.g. dislocated direct objects; Hualde 1992: 169); in other contexts, the clitic is absent if a full NP argument is present. In contrast, subject agreement suffixes never disappear in the presence of a full NP subject.

  No he llegit pas aquest llibre (no doubling)
  not have.1SG read.PASTPTC NEG this.MASC book
  'I have not read this book'

  Aquest llibre, no ***l'=****he* *llegit* *pas*
  this.MASC book not 3SG.MASC.ACC=have.1SG read.PASTPTC NEG

Admittedly, although these patterns of behaviour distinguish pronominal clitics from affixes in Catalan, they are both attested in agreement affixes in other languages (see e.g. Anderson 2005: ch. 8).

Enclitic *=ho* bleeds word-level laryngeal neutralization

§28 Catalan has a regular phonological process of laryngeal neutralization that targets coda obstruents. It applies at the word level, since it is counterbled by phrase-level resyllabification:

/ʎo**b**-/ 'wolf'	[ʎo.**β**ə]	'she-wolf'
	[ʎo**P̥**]	'wolf'
	[ʎo**P̥**.trisT̥]	'sad wolf'
	[ʎo**P̥**.ʎiw.ɾə]	'free wolf'
	[ʎo.**P̥**a.miK̥]	'friendly wolf' ☜**cyclic overapplication**
/re**b**-/ 'receive'	[rɛ.**β**ɾə]	'to receive'
	[rɛ**P̥**]	'receive!'
	[rɛ.**P̥**ə.ʃɔ]	'receive that!' ☜**cyclic overapplication**

	rebre	*rep*	*rep això*
Domain structure	[PL [WL rɛb-ɾə]]	[PL [WL rɛb]]	[PL [WL rɛb][WL əʃɔ]]
WL (neutralization)	rɛ.bɾə	rɛP	rɛP
PL (resyllabification)	rɛ.βɾə	rɛP̥	rɛ.P̥ə.ʃɔ

§29 The encliticization of *=ho* bleeds word-level laryngeal neutralization:

*rep***=*ho*** [rɛ.**β**u] 'receive=3SG.NEUT.ACC'

Accordingly, enclitic *=ho* forms a word-level phonological domain with its host; <u>*=ho* encliticization cannot be postlexical</u>.

	✓	×
Domain structure	[PL [WL rɛb=u]]	[PL [WL rɛb] u]
Word Level (neutralization)	rɛ.bu	rɛP
Phrase Level (resyllabification)	rɛ.βu	*rɛ.P̥ə.ʃɔ

§30 The fact that *=ho* is prosodified as an <u>internal clitic</u> (§24) does not suffice to explain the interaction between *=ho* encliticization and word-level laryngeal neutralization, for, in Catalan, <u>phrase-level resyllabification freely crosses lexical ω-boundaries</u>: cf. *rep això* [rɛ.**P̥**ə.ʃɔ].

Harris (1993) attempts to restore the postlexical status of *=ho* encliticization by postulating two postlexical levels and resorting to extrinsic rule ordering within levels. These *ad hoc* manoeuvres are impossible in Stratal OT.

IMPLICATIONS

Word-level clitics in Stratal OT

§31 The example of enclitic *=ho* in Catalan shows that special clitics must be free to define a word-level or phrase-level phonological domain with their hosts.

Under the basic principles of Stratal OT, however, a host-clitic combination that creates a word-level phonological domain must constitute a grammatical category of the same sort as a stem-affix combination at some level of analysis.

§32 *Lexicalist approach*

Phonologically word-level host-clitic combinations are generated in the lexicon. They are lexical items in the same sense as ordinary inflected words.

See e.g. Booij & Rubach (1984), Condoravdi & Kiparsky (2002), Miller (1991), Miller & Sag (1997), Monachesi (1999).

§33 *Nonlexicalist approach*

Assume that morphology, including both lexical morphology (affixes) and phrasal morphology (clitics), constitutes a level of representation mediating between syntax and phonology. Then, host-clitic combinations can constitute a single morphological word even when they consist of more than one syntactic terminal.

E.g.
- noninteractionist stratal phonology: Halle & Vergnaud (1987)
- Distributed Morphology (Halle & Marantz 1993)
- Autolexical Syntax (Sadock 1991)

Are there clitics?

§34 The above indicates that special clitics interact phonologically with their hosts in the same way as affixes. Accordingly, *if* the distinction between affixation ('the morphology of words') and special cliticization ('the morphonology of phrases') can be maintained at all, it will depend solely on syntactic criteria, not on morphophonological ones.

§35 However, Bermúdez-Otero & Payne (in preparation) argue that Anderson's (2005) syntactic criteria for distinguishing between affixation and special cliticization are untenable: once the syntax is given enough power to handle phenomena such as Suffixaufnahme (Plank 1995) and long-distance agreement (e.g. Polinsky & Potsdam 2001), most of Anderson's special clitics can be reanalysed as affixes.

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CONTACT DETAILS

Ricardo Bermúdez-Otero
Linguistics and English Language
University of Manchester
Manchester M13 9PL
United Kingdom

r.bermudez-otero@manchester.ac.uk
www.bermudez-otero.com