Output-to-Output Identity in Word-Level Phonology

Sharon Peperkamp

0. Introduction

Recent developments in optimality theory have led to a revision of the role of faithfulness. In particular, it is argued that output candidates can be compared not only with their underlying inputs by means of input-to-output constraints, but also with the surface form of paradigmatically related words by means of output-to-output constraints (Benua 1995; McCarthy 1995; McCarthy and Prince 1995; Kenstowicz 1996). Many phonological effects of under- or overapplication formerly attributed to the cycle or to level ordering receive a straightforward one-level analysis in this type of paradigmatic phonology. In this paper, I will consider several cases of under- and overapplication in word-level phonology. I will argue that analyses based on output-to-output faithfulness constraints lead to a variety of problems, which do not arise in accounts based on rule ordering and the definition of rule domains.

The paper is organized as follows. First, I will introduce output-to-output identity in section 1. I will then consider cases of phonological under- and overapplication with prefixation in Italian and Spanish in section 2 and 3. I will turn to suffixation in section 4, and discuss the phonological distinction between two types of suffixes in Dutch. Going beyond word-level phonology in section 5, I will examine the interaction of coda rules and enclisis in Catalan. The conclusion is drawn in section 6.

1. Output-to-output identity

In McCarthy and Prince (1995), a proposal is made in which faithfulness between input and output is related to other forms of faithfulness, such as between base and reduplicant in reduplicative morphology, or between base and derivative in derivational morphology. It is this latter extension with which I will be concerned. In the model of McCarthy and Prince, a family of identity constraints compares the phonological content of output forms to both the underlying input and the surface form of

---

1 I would like to thank an anonymous reviewer for comments, and Roos Vogel for practical assistance.
2 Paradigmatic phonology is not confined to optimality theory. Pre-optimality approaches in paradigmatic phonology can be found in, for instance, Chung (1983) and Bybee (1985).
3 I do not exclude that the latter accounts can be restated within a version of optimality theory that does not involve output-to-output constraints. This topic, however, is outside the scope of the present paper.
embedded words. If output-to-output identity constraints are ranked topmost, paradigmatic effects result.

Many effects of under- and overapplication formerly attributed to the cycle receive a straightforward explanation in paradigmatic phonology. Kenstowicz (1996) discusses the classic example of the near minimal pair in (1) (cf. also Burzio 1994).

\[(1)\] a compensation (< comp[ə]nsation) 
b condensation (< cond[ɛ]nsation)

The difference in quality of the unstressed medial vowel lies with the quality of that vowel in the embedded word. The cyclic account in SPE is as follows. On the first cycle, stresses are assigned to compensate and condense. On the second cycle, affixation takes place and stresses are added to the derived words, yielding compensation and condensation, respectively. The rule of vowel reduction then reduces all unstressed vowels to [ə]. It applies to the [ə] in compensation (1a), but is blocked with the [ɛ] in condensation (1b), since this vowel is still stressed. In fact, the clash resolving rule which removes it is ordered after vowel reduction.

In paradigmatic phonology, the unstressed vowel in the derived word condensation (1b) is said to resist reduction in order to maintain featural identity with the full, stressed vowel [ɛ] in the base condense. By contrast, the base compensate in (1a) has an unstressed vowel, which surfaces reduced to [ə]. As a consequence, nothing inhibits reduction of its corresponding vowel in the derived word compensation. In the model of McCarthy and Prince, three constraints are involved in this example. First, a phonological constraint, conveniently referred to as PHONO, bans unreduced unstressed vowels. Second, IDENT(F)\_1\_O, with F an arbitrary vowel feature, is an input-to-output identity constraint which requires the underlying vowel /e/ to surface as such in the output. PHONO must dominate IDENT(F)\_1\_O in order for vowel reduction to apply in underived words such as compensate. This is illustrated in (2). For completeness, underived condense, in which /e/ appears in a stressed syllable, is also included in the tableau. Both output candidates for the latter word satisfy PHONO, hence the candidate which remains faithful to the underlying input is selected.

\[(2)\]

<table>
<thead>
<tr>
<th></th>
<th>PHONO</th>
<th>IDENT(F)_1_O</th>
</tr>
</thead>
<tbody>
<tr>
<td>comp[ɛ]nsate</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>comp[ə]nsate</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>cond[ɛ]nse</td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>cond[ə]nse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The third constraint, then, is undominated $\text{IDENT(F)}_{0-o}$. This output-to-output identity constraint requires the output vowels to be identical to the surface form of their corresponding vowels in an embedded word. This constraint is vacuous for the words in (2) above, which do not contain an embedded word. Its ranking on top of the hierarchy, however, is crucial in determining the correct surface forms of the derived words, as illustrated below.

\[
\begin{array}{|l|c|c|}
\hline
\text{comp[ɛ]nsation} & *! & * \\
\hline
\text{comp[ø]nsation} & * & * \\
\hline
\text{cond[ɛ]nsation} & * & * \\
\hline
\text{cond[ø]nsation} & *! & * \\
\hline
\end{array}
\]

If $\text{PHONO}$ were undominated, the candidates with the reduced vowels would be selected; whereas if $\text{IDENT(F)}_{h-o}$ were ranked on top, the candidates with the full vowels would be defined optimal for both words. It is only with the top-ranking of $\text{IDENT(F)}_{0-o}$ that the two words surface with different vowels, due to the surface difference in the embedded words.

Crucial to this approach is the requirement that the embedded constituents are independent words, which is inherent to the output-to-output identity constraint. In fact, if the embedded constituents were not occurring words, they would not be available as separate output forms. Kenstowicz (1996) argues that this account is superior to one involving the phonological cycle, since cyclic effects are known to be word-based (Brame 1974). Thus, stem-based cyclic effects are automatically excluded, whereas in classic cyclic phonology this exemption must be stipulated.

In the remaining part of this paper, I will show that output-to-output identity is too restrictive in two ways. On the one hand, paradigmatic effects can arise in derived words the morphological base of which is not an occurring word. On the other hand, the distinction found within a single language between words that are subject to paradigmatic effects and those that do not cannot always be reduced to a distinction between stem-based and word-based morphology.

2. *Prefixation and intervocalic s-voicing in Italian*

Intervocalic s-voicing is an allophonic rule of the northern varieties of Italian. It applies within stems (4a), as well as between a stem and a suffix (4b). At prefix
boundaries, it applies if /s/ is part of the prefix (4c), whereas it fails to apply if /s/ is part of the stem (4d).

(4) a a[z]ola 'button hole'
b pae[z]+ino 'small village'
c di[z]+onesto 'dishonest'
d a+[s]ociale 'asocial'

On the basis of these data, Nespor and Vogel (1986) argue that the domain of intervocalic s-voicing is the prosodic word. This constituent is defined as a stem together with all suffixes and consonant-final prefixes. Vowel-final prefixes, by contrast, constitute independent prosodic words; hence the blocking of the rule in (4d).4

Alternatively, Kenstowicz (1996) argues that the difference in voicing between the prefixed words in (4c) and (4d) lies with the fact that in the former, /s/ is part of a bound prefix, whereas in the latter, it is part of an independently occurring base word. A constraint requiring output-to-output identity of the feature [voice] is ranked above the constraint prohibiting intervocalic [s].5 As a consequence, voicing applies in (4c), where the output-to-output constraint is vacuous, while voicing is inhibited in (4d), given the existence of /s/ociale as an independent word. Prosodic word constituency, then, is irrelevant to the process. The tableau in (5) illustrates the normal application of voicing in (4c) versus its underapplication in (4d).

(5)

<table>
<thead>
<tr>
<th></th>
<th>IDENT(VCE)₀-₀</th>
<th>*V[s]V</th>
<th>IDENT(VCE)₁-₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>di[s]onesto</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>❌</td>
<td>di[z]onesto</td>
<td></td>
<td>∗</td>
</tr>
<tr>
<td>❌</td>
<td>a[s]ociale</td>
<td></td>
<td>∗</td>
</tr>
<tr>
<td>❌</td>
<td>a[z]ociale</td>
<td>∗</td>
<td>∗</td>
</tr>
</tbody>
</table>

The problem with this alternative analysis is that the base word sociale is not a morphological constituent of asociale. In fact, given that inflection is peripheral with respect to derivation, prefixes attach to stems, which do not occur independently (Peperkamp 1995, to appear). Thus, the bracketing of asociale must be as in (6).

---

4 Nespor and Vogel conjecture that consonant-final prefixes cannot form prosodic words, since in Italian, words generally end in a vowel. See Peperkamp (1995, to appear) for criticism and an alternative account of s-voicing based on prosodic constituency.

5 Kenstowicz's definition of the output-to-output constraint is slightly different. For ease of exposition, I use McCarthy and Prince's (1995) identity constraints throughout this paper, since their model of output-to-output faithfulness is the most elaborate one. Nothing crucial hinges upon this choice.
The final, inflectional -e, then, is not part of the morphological constituent to which the prefix a- is attached. Consequently, the constraint requiring surface identity between base and derivative is vacuous, and the fact that voicing does not apply in asocial-e remains unexplained. For output-to-output identity to be in force, there should be an embedded constituent comprising the inflectional suffix to the exclusion of the prefix, i.e. sociale, but this is not a morphological constituent of asociale. In other words, output-to-output identity can only be invoked on the basis of prosodic constituency. Thus, asociale should be compared with the embedded prosodic word sociale, rather than with the embedded morphological constituent social-e. With this move, though, we lose the attractiveness of an analysis in paradigmatic phonology, which lies with the redundancy of a separate phonological constituent structure.  

3. Prefixation and s-aspiration in Spanish

A case of phonological overapplication in prefixed words is presented by Spanish. In many varieties of Spanish, /s/ is aspirated in the syllable coda (cf., among many others, Harris (1983)). S-aspiration is a late-lexical rule, as evidenced by the fact that it does not apply cyclically. This is illustrated in (7). In (7a), the final /s/ of mes is aspirated, while in (7b), this segment surfaces as an onset before the suffix and hence remains unaspirated. Relevant syllable boundaries are indicated by dots.

(7)  
\[
\begin{array}{c}
\text{/mes/} \\
\text{a mes} \\
\text{b mesada}
\end{array}
\]
\[
\begin{array}{c}
\text{me[h]} \\
\text{me[s]ada}
\end{array}
\]
\[
\begin{array}{c}
\text{‘month’} \\
\text{‘monthly stipend’}
\end{array}
\]

Kenstowicz (1996) argues that his analysis has a broader empirical coverage than the one by Nespor and Vogel (1986). In particular, the prediction is made that voicing fails to apply to a word-final /s/ before a vowel-initial suffix, /s/ being part of the independently occurring base word. According to Nespor and Vogel’s analysis, by contrast, voicing should apply, since suffixes are incorporated into the prosodic word to which they attach. Italian only has a few loans which end in /ls/, e.g. bus and rebus. Kenstowicz reports that voicing is inhibited before the vowel-initial diminutive suffix, yielding bu[s]ino and rebu[s]ino, respectively. According to my own data, however, /ls/-final loans undergo voicing before vowel-initial suffixes. See Peperkamp (to appear) for further discussion.
Consider now the following data concerning prefixed words. In (8a), aspiration regularly applies to the final /s/ of the prefix des- before a consonant-initial base. In (8b), the rule unexpectedly applies before a vowel-initial base as well; that is, /s/ is aspirated despite the fact that it surfaces in an onset position.

(8) /des-/  
   a descalzar de[h].calzar ‘to unshoe’  
   b desechar de[h].echar ‘to reject’

In order to account for the overapplication in the prefix, Kenstowicz (1996) defines a constraint UNIFORM EXPONENTENCE (henceforth UE), which requires the minimization of differences in the realization of a lexical item, in this case, of the prefix /des-/.

UE differs from other output-to-output constraints in that it does not require the output form to which candidates are compared to occur as an independent word. Given the normal application of s-aspiration in the prefix before the consonant-initial base in (8a), UE selects the output form with overapplication before the vowel-initial base in (8b). Thus, in order for the prefix /des-/ to have a single surface realization before all bases, /s/ is aspirated before vowel-initial bases despite its syllabification in an onset.

This analysis is problematic for two reasons. First, as observed by Kenstowicz, evaluation of UE lacks the directionality effect normally found with paradigmatic phonology. Thus, output-to-output identity always singles out the embedded word as the form to which derived words are adjusted, yielding phonological under- or overapplication in the latter. In the case at hand, by contrast, surface forms subject to comparison are not embedded. Consequently, there is no principled reason why the output candidates of /desechar/ should be compared to the surface form de[h]calzar, rather than vice versa. In fact, the pair {de[s]echar, de[s]calzar}, in which the output of the word with the vowel-initial base serves as the form to which the word with the consonant-initial base is adjusted, equally satisfies UE. That this pair is less well-formed than {de[h]echar, de[h]calzar} lies with the constraint which bans [s] in syllable codas. In fact, the latter pair obeys this constraint, while {de[s]echar, de[s]calzar} violates it once.

As a solution, output candidates for both words with a consonant-initial base and words with a vowel-initial base should be evaluated in parallel, as shown in (9).

(9)  

<table>
<thead>
<tr>
<th></th>
<th>UE/des-/</th>
<th>*[s]₀</th>
<th>IDENT(F)₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>{de[s]echar, de[h].calzar}</td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>{de[h]echar, de[s].calzar}</td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>{de[s]echar, de[s].calzar}</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✘ {de[h]echar, de[h].calzar}</td>
<td></td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>
For ease of exposition, I have omitted undominated ONSET, which guarantees that the prefix-final consonant surfaces as an onset before the vowel-initial base. The first two candidate pairs are ruled out, since they violate UE. Of the remaining two pairs, the one which has no [s] in a syllable coda is selected, despite its multiple violation of input-to-output identity. Although this solution seems to work, the price is high. In fact, the introduction of parallel evaluation of words which are not derived from one another considerably weakens the predictive power of the theory.

The second problem with a paradigmatic analysis of Spanish s-aspiration is the following. According to Kenstowicz, UE must be defined with respect to the prefix /des-/ only, since overapplication of s-aspiration is not otherwise found. For instance, it was shown in (7b) that the process does not apply with suffixation. However, Kenstowicz does not discuss phrasal data such as those below, showing normal application of s-aspiration word-finally before a consonant-initial word (10a), and overapplication before a vowel-initial word (10b) (cf. Harris 1983). These data thus exactly parallel the ones concerning prefixation in (8).

(10) /otros/
    a otros dados otro[h] dedo[h] ‘other fingers’
    b otros ojos otro[h] ojo[h] ‘other eyes’

In order to account for the data in (10) with UE, we would have to define this constraint not only with respect to the prefix /des-/ but also with respect to all s-final stems. Moreover, the distinction between the lexical and the post-lexical level should still be made, in order to rule out overapplication with suffixation.

Alternatively, I propose a uniform account of the overapplication both within prefixed words and between words as follows. First, the prosodic word is the domain of syllabification. This follows straightforwardly from the Strict Layer Hypothesis (Selkirk 1984; Nespor and Vogel 1986), according to which prosodic constituents must be properly nested; in particular, syllable boundaries must coincide with prosodic word boundaries. Second, prefixes are adjoined to the prosodic word to which they attach, while suffixes are incorporated into the prosodic word. As a result, prefixes, as opposed to suffixes, form independent syllabification domains. Third, s-aspiration applies late-lexically (Harris 1983). Finally, resyllabification applies postlexically across prosodic word boundaries.\(^7\)

The data in (7b), (8b) and (10b) are now derived as follows.

\(^7\) In Peperkamp (to appear), I defend the present analysis in more detail, taking other rules into account as well. The analysis of Harris (1993), based on cyclic syllabification, is also discussed and rejected. Limitations on the length of the present paper prevent me from going into Harris's account here.
The /s/ of *mesada* is followed by a suffix. It is thus medial in the prosodic word, and gets syllabified as an onset consonant; hence, the context for aspiration is never met. By contrast, the /s/ of *desechar*, being the final segment of the prefix, is immediately followed by a prosodic word bracket. It is therefore initially syllabified as a coda consonant and, consequently, it undergoes aspiration. Ultimately, it surfaces in an onset, due to postlexical resyllabification. Similarly, the /s/ of *otros* is final in the prosodic word; hence, it is syllabified as a coda consonant and undergoes aspiration before resyllabification applies.

4. Suffixation and final devoicing in Dutch

Dutch, a language in which derivational suffixes generally attach to bases which are themselves occurring words, shows an interesting interaction between suffixation and a rule of syllable-final devoicing. Consider the data in (12).

(12) /rod/
    a rood [rot] ‘red’
    b rodig [ro.dig] ‘reddish’
    c roodachtig [ro.dachtig] ‘redlike’

In (12a), the underlying /d/ of *rood* ‘red’ undergoes devoicing. In (12b), this segment is syllabified as an onset consonant before the vowel-initial suffix -ig, and devoicing is blocked. Before the suffix -achtig in (12c), by contrast, the underlying /d/ is syllabified as a coda consonant and regularly undergoes devoicing.

The examples in (12b) and (12c) illustrate a well-known dichotomy among the native suffixes of Dutch (cf., for instance, Booij 1995). Most suffixes behave like -ig; they are referred to as cohering, since they form a prosodic word together with the base to which they attach. By contrast, non-cohering suffixes such as -achtig in (12c) are argued to form independent prosodic words, since they are syllabified independently. Thus, the underlying /d/ in (12c) is syllabified as a coda consonant and, consequently, it undergoes devoicing. At the surface, it is still in a coda position, since resyllabification across prosodic words is not allowed in Dutch.

In terms of paradigmatic phonology, we would like to say that in (12c), the underlying /d/ resists resyllabification in order to maintain identity with the surface form of the base *rood* ‘red’. The question, then, is why this does not pertain to (12b); is it because output-to-output identity is irrelevant in this case, or is it because the con-
straint ranking for evaluation of words containing -ig is different from that for evaluation of words containing -achtig? I argue that neither of these answers is correct, and therefore, that a paradigmatic account has to be rejected.

Regarding the first option, a comparison with English might be useful. In this language, a similar distinction between two types of derivational affixes is attributed to the fact that one type of affixes (Class I) attaches to stems, while the other type (Class II) attaches to words (SPE; Siegel 1974; Selkirk 1982; Borowsky 1986). In paradigmatic phonology, output-to-output identity can be invoked in order to account for phonological differences between Class I and Class II affixes. For instance, Benua (1995) discusses New York-Philadelphia /æ/-tensing, which turns the low front vowel /æ/ into a diphthong beginning with a front vowel higher than /æ/ and ending in a centralized glide. The rule applies if /æ/ is in a closed syllable. Thus, it applies in *pass* in (13a), but it fails to apply in *passive* in (13b), due to the fact that /æ/ is no longer in a closed syllable. Crucially, the rule is shown to overapply in *passing* in (13c), in which /æ/ does not surface in a closed syllable either. In the examples, tensed /æ/ is transcribed [E].

(13) /paes/
    a pass [pEs] Class I
    b passive [pa:stv] Class II
c passing [pE:st] Class II

Benua (1995) argues that tensing overapplies in *passing*, which has a Class II suffix, in order to maintain surface identity with the base word *pass*. By contrast, output-to-output identity is vacuous in the case of *passive*, which has a Class I suffix, since the base of this word is a stem.

An account along these lines for the Dutch data in (12) is unavailable, since the distinction between cohering and non-cohering suffixes arguably does not coincide with the distinction between stems and words as the base of suffixation. In fact, cohering suffixes often occur outside non-cohering ones. In such cases then, the base of the cohering suffix must be a word rather than a stem. This is illustrated in (14), where two cohering suffixes, superlative -st and nominalizing -s, are attached outside non-cohering -achtig.

(14) a roodachtigst [rot.axtəxst] ‘most redlike’
b (iets) roodachtigs [rot.axtəxs] ‘(something) redlike’

Thus, the deviant phonological behavior of Dutch words containing a non-cohering suffix cannot be based upon a distinction between cohering and non-cohering suffixes in terms of morphological subcategorization. Rather, Booij (1995) shows that it is the phonological form of the suffix that determines whether a suffix is cohering or non-cohering. In particular, suffixes which satisfy the requirement that
prosodic words contain at least one full vowel are generally non-cohering, while suffixes which are not eligible for prosodic word status are cohering. Paradigmatic phonology has nothing to say about this distinction, since suffixes, whether cohering or non-cohering, do not occur as independent outputs. Thus, this rules out the possibility that output-to-output identity is uniformly high-ranked but irrelevant, i.e. vacuous, in the case of cohering suffixes.

Alternatively, a paradigmatic account could be proposed involving separate constraint hierarchies for the two types of suffixed words. For non-cohering suffixes, output-to-output identity would be ranked high, while for cohering suffixes it would be ranked low. This would be along the lines of Inkelas (to appear), who argues that languages can have various co-phonologies (i.e. subgrammars), each with its own constraint ranking. Such an account, however, appears to be ad hoc, in that contrary to Booij’s analysis in terms of prosodic constituency - it fails to provide insight into the question which suffixes are cohering and which are non-cohering.

5. Enclisis and final devoicing in Catalan

In this section, I will briefly look beyond the word-level and consider overapplication of phonological rules in certain phrasal configurations but not in others. In Catalan, obstruents are devoiced syllable-finally. The following data are from Harris (1993).

(15) /reb/
     a rep [rep] ‘receive’
     b rep això [re.pa.jo] ‘receive that’
     c rep-ho [re.hu] ‘receive it’

In (15a), final devoicing applies. Catalan allows for resyllabification across words, regardless of whether the second word is a full prosodic word, as in (15b), or an enclitic, as in (15c). The quality of the underlying /b/, however, differs in these examples. In (15b), devoicing applies despite the fact that the underlying /b/ surfaces in an onset; whereas in (15c), devoicing is blocked and another rule, spirantization, applies. If we invoke output-to-output identity in order to account for the overapplication of devoicing in (15b), we fail to explain why the same does not obtain in (15c). In fact, in both (15b) and (15c) does /reb/ occur as an independent word. Notice that we cannot claim that clitics attach lexically, thus behaving like affixes, since suffixed words are syllabified differently from sequences of host plus enclitic. This difference is illustrated in (16).

(16) a rebre [re.βre] ‘to receive’
     b rep-la [reb.la] ‘receive her’
     c sublim [su.βlim] ‘sublime’
In (16a), the stem-final /b/ syllabifies as an onset consonant before the inflectional morpheme -re. By contrast, in (16b), /b/ surfaces in coda position before the clitic la.

That /bl/ is a licit onset cluster is illustrated by monomorphic sublim in (16c). Hence, suffixation and cliticization are truly distinct.

In order to account for the data in (15) within paradigmatic phonology then, various co-phonologies would necessarily be invoked, each with its own constraint ranking. In the co-phonology which deals with sequences of word and enclitic, output-to-output identity would be ranked low, whereas in the co-phonology which deals with sequences of full prosodic words in phonological phrases, it would be ranked high. The problem of such an approach, though, is that it remains a mere coincidence that devoicing overapplies before a non-clitic word and not before a clitic, rather than the other way round.

More generally, Booij (1996) argues that phonological theories based on correspondence and separate co-phonologies are overly powerful, since they lack the generalization expressed by the derivational metaphor that certain levels take priority over others. For instance, the lexical level precedes the postlexical level. For the case at hand, Harris (1993) proposes that there be two postlexical strata; sequences of words and enclitics make a pass through both strata, whereas phrases without clitics only go through the second one. Final devoicing and spirantization apply in the second phrasal stratum only, while resyllabification is assigned at the end of both strata.

\[(17) \ \text{/reb \# u/} \quad \text{/reb \# a\dagger o/} \quad S1: \text{resyllabification} \quad S2: \text{final devoicing} \quad \text{spirantization} \quad \text{resyllabification}\]\n
In rep-ho, the stem-final consonant is removed out of the coda to fill the empty onset position in the clitic before final devoicing applies. In the phrase consisting of two full prosodic words rep això, by contrast, devoicing precedes resyllabification.

6. Conclusion

In this paper, I have examined various cases of under- and overapplication in word-level phonology. I have argued that a paradigmatic approach involving output-to-output identity constraints, which crucially relies on the occurrence of an embedded constituent as an independent word, is not always available. On the one hand,

\[8\] The final /b/ surfaces as a coda consonant, since - as in many languages - resyllabification only applies if the second word begins with a vowel. Also, /b/ resists devoicing at the surface, since consonants are voiced before a voiced consonant in Catalan.
paradigmatic effects can arise in morphemes which are not occurring words. This was shown to be the case in Italian and Spanish prefixation. On the other hand, the distinction found within a single language between paradigmatic and non-paradigmatic effects, as seen with suffixation in Dutch, cannot always be reduced to a parallel distinction between stem-based and word-based morphology. The difference in phonological behavior between clitics and full prosodic words in Catalan also falls into this class. Given that the cases presented in this paper are analyzed alternatively in terms of either different derivational strata or different prosodic domains, the latter theoretical tools should not be abandoned in favor of output-to-output constraints.

References


