Evidence from Modern Greek for Refinement of the OCP*

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1 Introduction

Modern Greek, like many languages, exhibits a phenomenon characterised by reference to the identity of adjacent elements. It is generally agreed that the Obligatory Contour Principle (OCP) (first proposed by Leben 1973, and first coined by Goldsmith 1976) is defined by identity and adjacency, and that these constraints are closely associated with the notion of the tier. The nature of this association, however, has received many various treatments.

In Modern Greek connected speech, one of two adjacent and identical vowels residing in different words is deleted. The problems presented by the data in section 2 to previous treatments of the OCP are threefold. First, adjacency is relevant within the moraic tier; previously, only non-prosodic tiers have been acknowledged as relevant to the OCP. Secondly, identity inheres in the place tier; that both the moraic and place tiers are scanned by the OCP is counter to proposals in which only a single tier is scanned. Thirdly, when words become connected, adjacent and identical vowels are not automatically fused. Vowel hiatus resolution operates in a stage after concatenation but before fusion in tier conflation, then, contrary to proposals that conflation is a single-phase process.

In this article, I propose that the tiers to be scanned by the OCP are specified by adjacency and identity functions resident in a language's grammar. The set of candidate tiers includes the moraic tier, and more than one tier may be relevant. Furthermore, when a language incorporates rules which resolve OCP violations in adjacency and identity, these rules preempt fusion during tier conflation.

1.1 The OCP Defined

The definition of the OCP has evolved since Leben's (1973) examination of tonal systems: "At the melodic level of the grammar, any two adjacent tonemes must be distinct." The principle's interaction in autosegmental phonology is more clearly recognised in Goldsmith's (1976) definition: "At the phonetic level, any contiguous identical (auto)segments must be collapsed into each other." This definition foreshadowed McCarthy's (1986:208) proposal for Tier Conflation across morpheme boundaries as one means for avoiding violations of the OCP. He defines the OCP: "At the melodic level, adjacent identical elements are prohibited." Further refinements have modifed reference to the "melodic level" and have constrained adjacency to within a tier: "Adjacent identical elements on the same tier are prohibited" (Selkirk 1988, and similar definitions in Borowsky 1987, Mester 1988, Hume 1992, and Archangeli and Pulleyblank 1995).

1.2 Tier-Adjacency

* I would like to thank Diana Archangeli for numerous discussions contributing to the arguments presented here. I am also grateful to Colleen Fitzgerald, Chip Gerfen, Andrea Heiberg, Sung-Hoon Hong, Sue Lorenson, Chang-kook Suh, and Keiichiro Suzuki for their comments and suggestions. This work was funded under NSF grant number BNS 9023323.

One consequence of the inclusion of the tier-adjacency constraint is that OCP effects have proven useful in arguments for specific feature geometries. Yip (1988:71) notes that constraining adjacency to a tier means that the OCP can refer only to constituents, and that "[o]nly constituents [nodes in the feature geometry] may constitute tiers."

The general argument is that when a language resolves an OCP violation, it is because the adjacent identical autosegments are on the same tier. It can be argued, for instance, that resolved violations in adjacent consonants and vowels provide evidence for a common set of features and their dominating nodes that are shared between consonants and vowels, since adjacency resides within the same tier (for example, see Hume 1992).

The number of tiers to which identity and adjacency refer varies according to different proposals. Hume (1992) argues that identity and adjacency are relevant within a single tier only. Yip (1988) allows identity and adjacency within multiple tiers at or below the segmental tier. Selkirk (1988) argues for identity within either adjacent roots or adjacent tiers below the root. Archangeli and Pulleyblank (1995), in arguments independent of OCP effects, motivate identity and adjacency in multiple tiers simultaneously, including root nodes and prosodic anchors. I show in section 3 that vowel hiatus resolution in Modern Greek, as motivated by the OCP, requires identity in one tier but adjacency in another.

If processes other than those motivated by the OCP are able to refer to adjacent constituents above the root node, the question that arises is whether OCP-motivated processes can do so, as well. If Yip's (1988:71) claim, that "superordinate nodes constitute tiers more often than the subordinate nodes...", is correct, then one prediction that can be made is that prosodic tiers should be primary candidates for scanning by the OCP. I argue in section 3 that the moraic tier must be scanned for adjacency in Modern Greek.

1.3 Tier Conflation

Tier-adjacency also requires that some type of tier conflation is operative after morphemes are concatenated (see, for example, McCarthy 1986 and Yip 1988). Assuming that tiers within one morpheme are distinct from those of another morpheme, then the tiers must be conflated after concatenation so that not only OCP effects, but also other processes like spreading may take place. There are, however, differing interpretations of conflation. McCarthy (1986) proposes tier conflation in a single phase, so that there are no derivational stages in which OCP violations exist. In his model, morphemes are on separate tiers after concatenation, but before conflation. During conflation, sequences of identical elements are automatically simplified.

Yip (1988), however, proposes a multiple-phase conflation: adjacency is created in one phase, and another phase results in automatic fusion. In her model, languages have the option of instantiating rules between phases. These rules, which must refer to adjacent elements in both morphemes, include such OCP effects as dissimilation across morpheme boundaries, and epenthesis into heteromorphemic, identical clusters. The analysis of Modern Greek vowel hiatus resolution in section 4 supports the multiple-phase interpretation of conflation.

1.4 Instantiation of the OCP

There are also opposing views of how the OCP is instantiated within a language. McCarthy (1986) claims that the OCP can act as either a morpheme structure constraint (MSC) or as an output filter during a derivation, with a blocking function on rule application. McCarthy (1986) provides examples in which syncope (in Afar) and metathesis (in Arabic) are blocked if they

would otherwise result in OCP violations. Yip (1988) argues that the OCP can also trigger rule application, and as a consequence, rules no longer need to be specified with identity conditions. By her account, any rule which involves removing identity or adjacency of a target and trigger pair is one triggered by the OCP. She cites a number of OCP-motivated processes in addition to syncope and metathesis: insertion (in Japanese Rendaku; Itô and Mester 1986), feature-changing (in English Spirantization; Borowsky 1986), degemination (in Seri Glottal Degemination), dissimilation (in Cantonese), and assimilation (in Berber). Modern Greek provides an example of vowel deletion triggered as a means of resolving OCP violations.

A number of accounts have been proposed which balance the universality of the OCP against language-particular effects. McCarthy (1986) states, for example, that MSCs prohibiting language-particular featural cooccurrence are motivated by the universal principle prohibiting adjacent identical elements. Odden (1986) argues against a universal principle in favor of language-specific rules on the grounds that there are ordering effects. He also claims that MSCs are not related to the OCP, but are language-particular cooccurrence constraints. Yip implicitly provides for parameterization of a universal principle in terms of which features or groups of features appear on a separate tier, and how OCP violations are alleviated (the latter through a combination of language-particular rules and multiple-phase conflation). Mester (1988) obtains language-particular effects via hierarchical tier orderings which vary between languages. In section 5, I propose instantiation of the universal OCP in terms of language-particular conditions, which specify what and how many tiers are relevant to identity and adjacency, and how OCP violations are to be alleviated.

2 Vowel Hiatus Resolution in Modern Greek

The vowels in the Modern Greek inventory are: [ɛ, i, a, ɔ, u]. A process labelled "Degemination" by Kaisse (1985) occurs when identical vowels in two different words become adjacent in connected (not necessarily casual or fast) speech. The first of the identical pair of vowels is at the end of the first word and the second begins the next word; the words in question may occur anywhere within a sentence (Kaisse 1985). One of the vowels is absent in connected speech where both are present when the words are spoken in isolation. Figure (1) illustrates.[1]

Assuming that the isolated word most closely corresponds to the underlying representation, the general process must be one of deletion. That it is deletion is clear when the alternative is considered: insertion of a final vowel in a set of arbitrary words in isolated speech. No patterns for the set of relevant words or for the various vowel qualities are discernible under the insertion alternative. Therefore, hiatus of identical vowels between words in Modern Greek must be resolved through deletion. The process is not true degemination; the vowels do not share the same root node since they reside in different words.

Three observations can be made from this data. First, regardless of which vowel is stressed in the isolated words, stress is preserved when a vowel is deleted in connected speech (1a - 1e). Either a consistent direction of rule application is preserved, and stress is transferred to the remaining vowel where necessary, or only the stressless vowel deletes. Neither of these analyses are favored by this data alone. Secondly, the consonant preceding a sequence of round vowels in

[1]Data was compiled from Eleftheriades (1985) and Kaisse (1985).

(1) Identical Vowel Elision

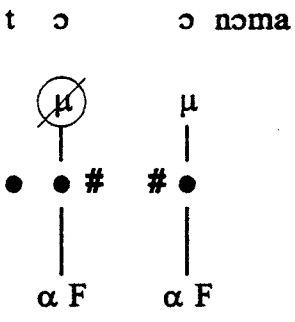
	Isolated Words	Connected Speech	Gloss
(a)	[sɛ́ ɛmɛna]	[sɛ́mɛna]	'to me'
	[θɛɔrítɛ́ ɛ́mpistɔs]	[θɛɔrítɛ́mpistɔs]	'he is considered trustworthy'
(b)	[tí inɛ]	[tínɛ]	'What is it?'
	[pósi ínɛ]	[pósínɛ]	'How many?'
(c)	[tá alla]	[tálla]	'the others'
	[ta álɔʏa]	[tálɔʏa]	'the horses'
(d)	[tɔ́ ɔnɔma]	[t^{w}ɔ́nɔma]	'the name'
	[tɔ ɔ́nirɔ]	[t^{w}ɔ́nirɔ]	'the dream'
(e)	[tú uranú]	[t^{w}úranú]	'of the sky'
	[mu úka]	[m^{w}úka]	'my figs'
(f)	[aʏóri ɛ́rχɛtɛ]	[aʏóri ɛ́rχɛtɛ]	'boy comes'
	[mɛʏálu ɛláfyu]	[mɛʏálu ɛláfyu]	'big deer (gen. sg.)'

the elision environment becomes rounded, as in (1d) and (1e). Lastly, nonidentical vowels do not necessarily elide, as shown in (1f) by the presence of adjacent vowels in connected speech.

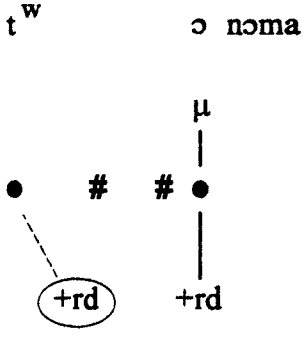
Because a vowel is deleted just in case it is identical to an adjacent vowel in another word, the process is likely motivated by the OCP. That consonants become rounded subsequent to deletion of round vowels will be crucial in arguments for identity and adjacency, and how these notions relate to the OCP. The processes of vowel deletion and consonant rounding are presented schematically in (2).[2]

(2) Schematics

(a) Delete vowel



(b) Link [+rd]



[2]I assume that the left-most vowel deletes; the assumption is not crucial to my arguments.

In the case of round vowels, [+rd] must remain available to the preceding consonant. The indication is that the mora is deleted, rather than the vowel's featural content. If only the features attached to the mora were deleted and the mora remained, either vowel lengthening or realization of the unspecified [ɛ] might be expected, but neither occurs (see Meador (1993) for arguments for vowels specifications in Modern Greek).

By virtue of the requirements of identity and adjacency, the OCP motivates the deletion rule. But therein lies the challenge to the OCP: the offending features are not removed. That is, identical and adjacent features remain after the rule has applied, a clear violation of the OCP if identity and adjacency inhere within a single tier.

3 The Single Tier vs. The Multiple Tier Hypotheses

A closer examination of the proposals for single- and multiple-tier adjacency is needed. The following questions become germane: Can adjacency and identity refer to more than one tier? In which tier(s) do adjacency and identity inhere? Should tiers above the root node be subject to the OCP?

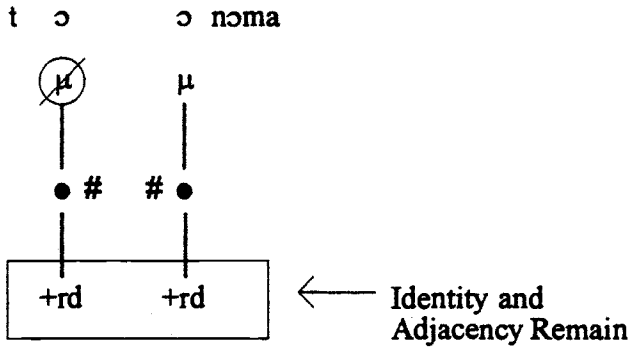
Hume (1992) maintains the strongest form of the single tier hypothesis in her argument that identity and adjacency inhere within one tier. The argument is based on her definition for adjacency, given in (3).

(3) Adjacency (Hume 1992:138)

> The elements x and y are adjacent on tier n iff no element z on tier n intervenes.

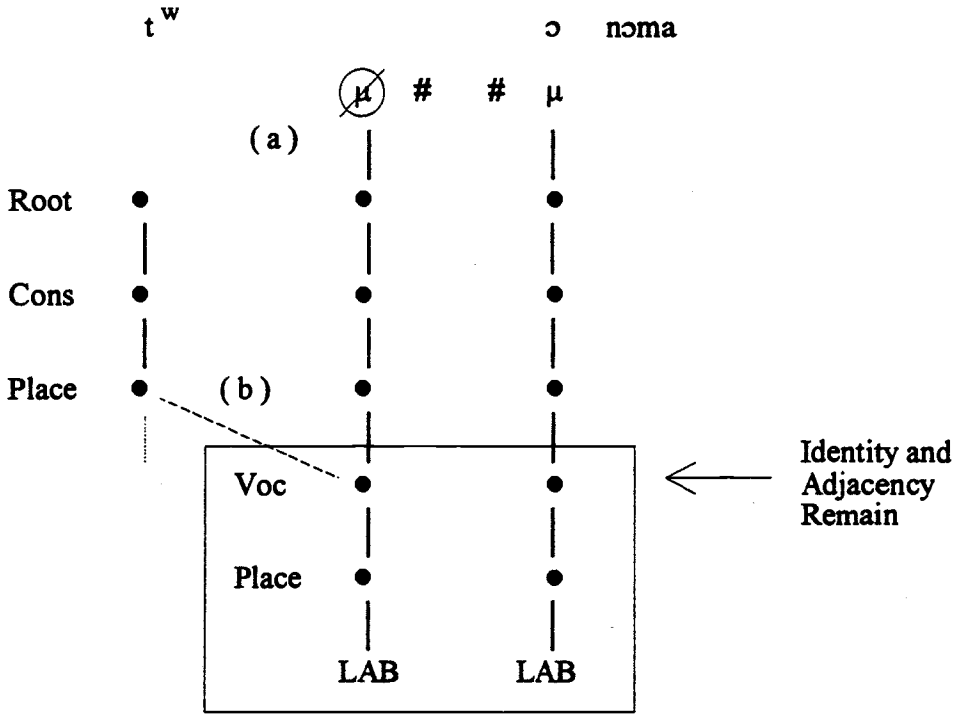
The OCP, according to this view, scans a tier for identical and adjacent elements. The implicit assumption is that the tiers to be scanned are below the root node. In Modern Greek, however, the OCP would not provide a motivation for vowel deletion, since adjacent identical elements remain on any of these tiers. One hypothesis might be that featural identity of adjacent vowels is the violating factor in Modern Greek. If so, then the OCP should scan the featural tier. After mora deletion, the features remain in violation, so this hypothesis is rejected. Figure (4) illustrates this.

(4) Identity in the Feature Tier



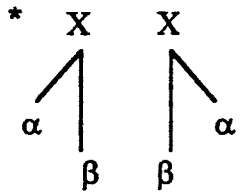
Assuming Hume's (1992) feature geometry, another hypothesis would require the OCP to scan the vocoid (VOC) tier. In her model, the VOC node, dominating [LAB], would spread from the vowel to the preceding consonant subsequent to the mora deletion posited here.[3] Mora deletion is shown in (5a), and consonant rounding in (5b). This hypothesis must be rejected as well, since identity in adjacent VOC nodes remains after mora deletion.

(5) Identity in the VOC Tier



Yip (1988) proposes that adjacency can refer to multiple tiers. Implicit in her arguments is that these tiers are at or below the segmental (or C-V) tier. In her analysis of English epenthesis in the plural and past tense, for example, the OCP scans for adjacent, identical specifications for [continuant] and [strident], each of which resides on a different tier. The OCP violation incorporating a multiplicity of tiers is illustrated in the generic case in (6).

(6) Identity and Adjacency in Multiple Tiers



[3]Hume (1992) does not discuss elements above the root node.

Under this proposal, identity in Modern Greek might inhere in the segment tier, while adjacency refers to the vowel tier and all that it dominates: ROOT, PLACE, LABIAL, etc. In an examination of assimilation in Berber, Yip (1988) argues that one of two identical matrices is delinked, providing an empty slot as a target for spread. She recognizes the problem, similar to that in Modern Greek, of remaining identity and adjacency after delinking:

> It is possible that the spreading itself alleviates the OCP violation, but this is not obviously so, since the offending matrix would still be present, albeit delinked. For this reason I have assumed it is first deleted by the OCP-triggered rule, and this then leaves it empty and available for a spreading rule. [Yip 1988:78; fn. 13]

In Modern Greek, the matrix delinked from the deleted mora cannot itself be deleted in its entirety since its featural content must remain available for the consonant rounding rule.[4]

Selkirk (1988) also argues that adjacency refers to multiple tiers, but specifies these tiers in either roots or tiers below the root. Her definition for the tier is given in (7), followed by the definition for adjacency in (8).

(7) Tier (Selkirk 1988:6)

> Def.: Identical features define a tier iff they are dependent on identical features (i.e. have identical heads)

(8) Adjacency (Selkirk 1988:8)

> Two feature specifications are adjacent if they are either root-adjacent or tier-adjacent.
> a. Def. Two feature specifications are root-adjacent if they are dominated by adjacent root nodes.
> b. Def. Two feature specifications are tier-adjacent if they are adjacent on the same tier.

The hypothesis for identity and adjacency below the root was rejected on the basis of the argument that identity and adjacency of the offending features remain after mora deletion. The question of identity within adjacent roots raises two possibilities in Modern Greek: either the root which was dominated by the deleted mora remains, or it deletes as well. Assuming Selkirk's (1988) feature geometry and representations for primary and secondary articulations (the latter being in a dependency relation to the former), the first possibility is illustrated in (9). Mora deletion is shown in (9a), which should be motivated by identical features with adjacent roots in this model. If the root node does not delete, then the OCP violation remains. Figure (9b)

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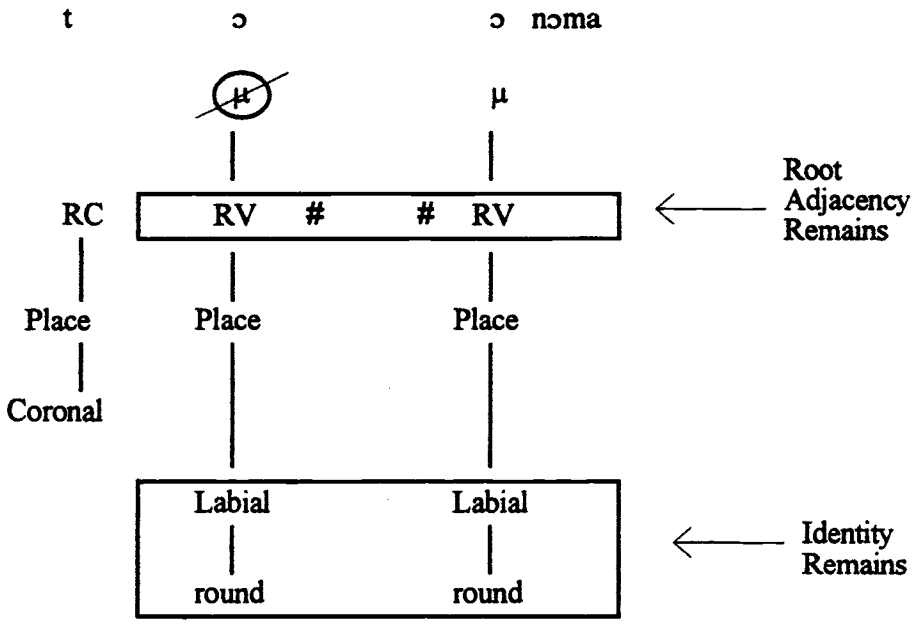
[4]It might then be argued that [+rd] spreads not from the delinked matrix, but from the remaining matrix of the word-initial vowel, in which case deletion of the delinked matrix is an adequate solution. Other cases of vowel hiatus resolution in Modern Greek (those involving nonidentical vowels) indicate that the featural content of the first vowel must remain for consonant rounding. For example, [a!lɔøɔ ɛ!rχɛtɛ] ('horse comes') in isolated speech corresponds to [a!lɔø^{w} ɛ!rχɛtɛ] in connected speech (Kaisee 1985). The only source for rounding in this case is the featural content of the deleted word-final vowel.

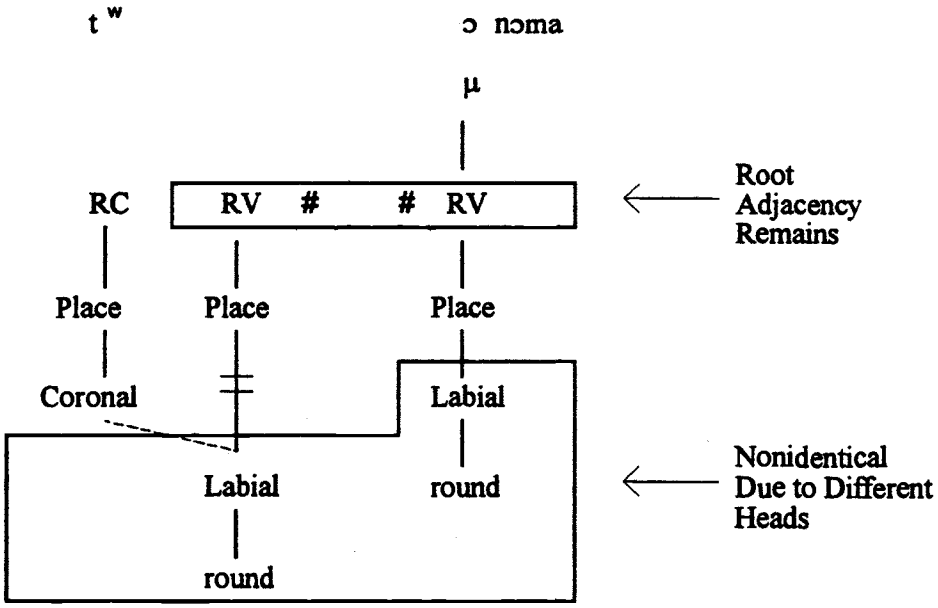
illustrates how subsequent consonant rounding, if any, alleviates the violation, since the instances of [round] have different heads. The result of mora deletion in the environment of non-round vowels is given in (9c), to show that when consonant rounding is not applicable, the violation remains.

(9) Root Remains

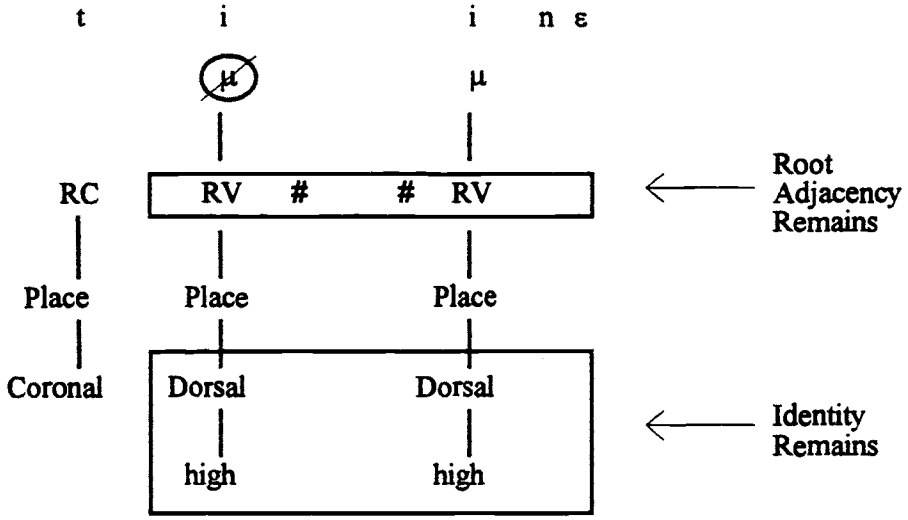
(a) Mora Deletion due to Root-Adjacency; Root Remains
("RC" = consonant root; "RV" = vowel root)



(b) Violation Alleviated through Labial Spread



(c) Violation Remains if Vowels are Nonround



Alternatively, extraneous structure, including both the root and place nodes, may be deleted after the dominating mora has been deleted. This alternative seems likely, since the mora, root, and place nodes are not subsequently filled (neither vowel lengthening or the default vowel [ε] appear). In this case, the root-adjacency violation would be alleviated, although identity and adjacency in the articulator tier would remain. If the head is indeed the root, this alternative would be a satisfatory solution; the root tier would be scanned by the OCP for adjacency while the articulator tier would be scanned for identity.

However, the model depends on specifying the root node as belonging to either a consonant or a vowel, which is informed, presumably, by the prosody. Furthermore, while deletion of the root to alleviate the adjacency violation would be motivated by the OCP, this account does not explain why it is the mora that deletes. These observations indicate that the mora, as the prosodic anchor, is the "head" instead. The implication is that the moraic tier is a candidate for scanning by the OCP in languages like Modern Greek. If so, then adjacency in the moraic tier should be relevant.

Archangeli and Pulleyblank (1995) argue for the relevance of moraic adjacency in processes independent of the OCP. For example, morae are often the prosodic anchors, or targets, in processes of vowel harmony. Any phonological process is, in their model, subject to the Locality Condition (Archangeli and Pulleyblank 1995:11), which states that "[p]honological relations respect Adjacency and Precedence." Adjacency is defined as in (10).

(10) Adjacency (Archangeli and Pulleyblank 1995:20)

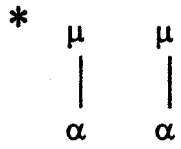
α is structurally adjacent to β iff:

(a) at least one of the two is unassociated, both are on the same tier, and no element intervenes between the two on that tier; or,

(b) both α and β are associated to the same anchor tier and no anchor intervenes on that tier between the anchors to which α and β are associated.

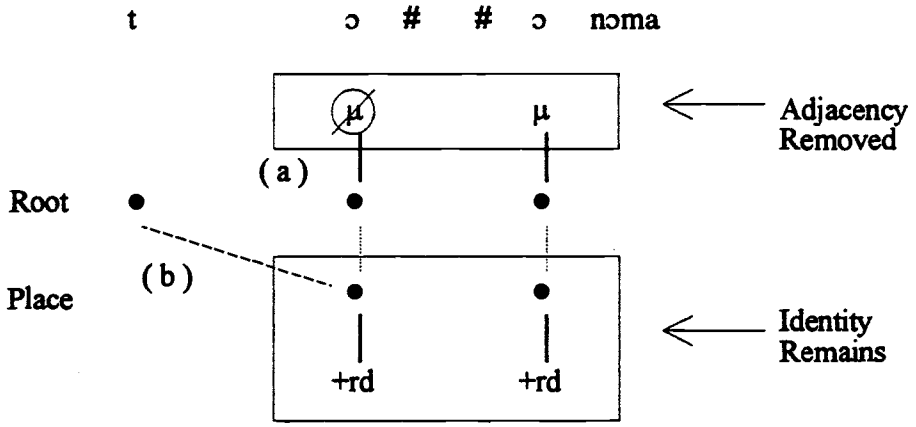
The argument for adjacency in the moraic tier in processes independent of the OCP can be extended to those which are motivated by the principle. For example, the configuration in (11) is ill-formed because "[t]wo identical autosegments are associated to adjacent prosodic anchors (Archangeli and Pulleyblank 1995:20)." Identity is relevant in the α tier, and adjacency is relevant in the moraic tier.

(11) Identity in one Tier, Adjacency in Another



This account differs from the single-tier hypothesis since more than one tier is scanned by the OCP. Unlike Yip's (1988) or Selkirk's (1988) model, violations may also occur on the moraic tier. Figure (12a) illustrates the alleviation of the OCP violation in Modern Greek through the removal of adjacency (morae are no longer adjacent when one is deleted), despite remaining identity in the place node and all that it dominates when [+rd] spreads (12b).

(12) Moraic Adjacency; Identity in Place



By this account, then, the OCP provides motivation for mora deletion. Adjacency and identity may refer to more than one tier, and the moraic tier should be included into the set of those scanned by the OCP.

4 Single- vs. Multiple-Phase Tier Conflation

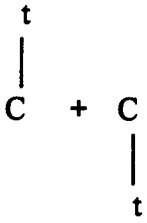
A problem remains concerning how two vowels become adjacent and create the environment for hiatus in Modern Greek, given that they reside in different words. In the definitions for adjacency given in (3), (8), and (10), no element may intervene between the two elements in question on a given tier. The vowels in hiatus are in different morphemes, but morphemes reside on distinct tiers (McCarthy 1986, Yip 1988). Therefore, the vowels cannot be adjacent unless a mechanism exists to align the tiers between morphemes.

McCarthy (1986) proposes a process of Tier Conflation to align the tiers. The single-phase process he describes, however, results in adjacency only of nonidentical elements. This proposal is problematic since vowel hiatus resolution in Modern Greek is motivated by adjacent identical elements. Modern Greek provides support for Yip's (1988) argument for a multiple-phase solution, in which adjacency of identical elements is possible in an intermediate stage. These proposals are examined below.

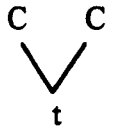
McCarthy (1986) argues that there is no derivational stage during conflation at which an OCP violation exists. After concatenation of two morphemes, but before conflation, the morphemic content resides on different tiers, as in (13a). Two identical elements are automatically fused during conflation in order to avoid an OCP violation, as in (13b).

(13) Single-Phase Tier Conflation (McCarthy 1986)

(a) After Concatenation



(b) During Conflation

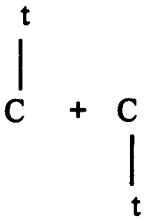


Because identical elements are never adjacent on the same tier, conflation does not cause OCP violations in this model. The prediction is that there should exist no rules motivated by the OCP, then, that are applicable when two morphemes or words become adjacent. For Modern Greek in particular, vowel lengthening would be expected instead of vowel deletion. Because vowel deletion is motivated by the OCP in the hiatus environment in connected speech, an alternative solution is required.

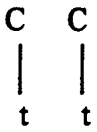
Yip (1988) proposes an alternative in which tier conflation has two stages, one at which adjacency is created. If a language has a specific rule to remove an OCP violation, that rule applies at this stage. If not, then fusion takes place. Figure (14) illustrates.

(14) Multiple-Phase Tier Conflation (Yip 1988)

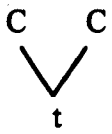
(a) After concatenation



(b) First stage



(c) Second stage

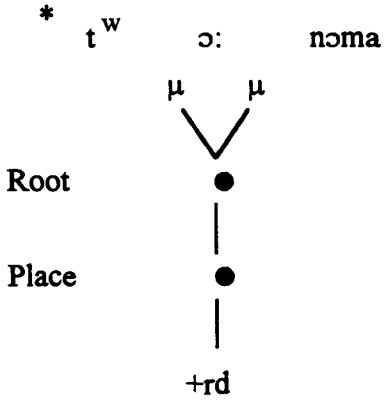


In her motivation for the first stage, Yip states that:

> since heteromorphemic melodic elements can only be adjacent after Tier Conflation, any rule that needs access to both elements, and in which they are clearly distinct, is evidence against ... automatic fusion ... [1988:69].

She provides several examples, including dissimilation across morpheme boundaries and epenthesis into heteromorphemic identical clusters. As another example of dissimilation, vowel hiatus resolution in Modern Greek offers further support for multiple-phase tier conflation. It cannot be the case that vowels are fused, as in the proscribed case in (15), since vowels do not lengthen in connected speech.

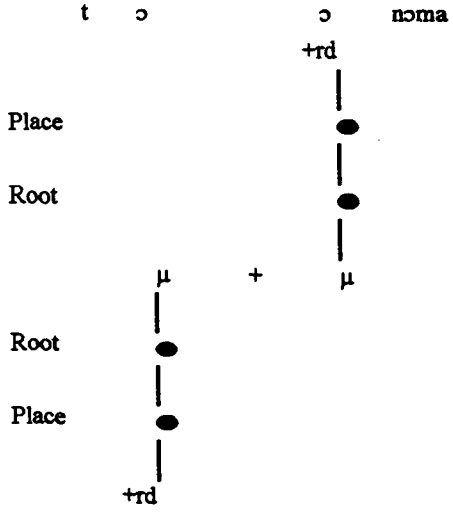
(15) Vowel Lengthening Proscribed



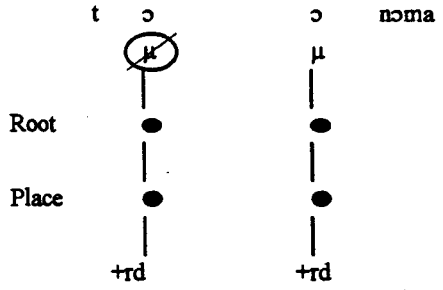
Given that mora deletion in Modern Greek is motivated by the OCP, adjacency must be introduced after words are concatenated in connected speech. Since fusion is preempted, hiatus resolution must take place in the first stage, as shown in (16).

(16) First Stage Hiatus Resolution

(a) Concatenation



(b) First Stage



5 Parameterization of a Universal Principle

The most prevalent assumption implicit to OCP arguments is that it is a universal principle, given the abundance of rules across languages which remove adjacency of identical elements.[5] Yet configurations involving adjacent identical elements that are well-formed in one language may be ill-formed in another. Languages may differ according to which tiers are relevant for identity and adjacency, and whether or not only a single tier is scanned. For example, adjacent identical specifications for place and manner in English are ill-formed (Borowsky 1987); in Berber, adjacent coronals are prohibited (Yip 1988); Cantonese prohibits adjacent labials (Yip 1988, Hume 1992); root-adjacent labials in Berber are ill-formed (Selkirk 1988); and adjacent identical elements on the segment tier are prohibited in Semitic languages (McCarthy 1986).

Languages may also differ according to whether they provide rules alleviating OCP violations after concatentation of morphemes, or whether the violations are alleviated through fusion during conflation. The mora deletion rule in Modern Greek provides an example of the former, whereas the Semitic languages appear to employ fusion (McCarthy 1986).

Finally, the grammar of a language may include either constraints preventing OCP violations, such as the MSC in Cantonese prohibiting two labials within a single morpheme (Yip 1988, Hume 1992), or rules which alleviate violations arising through concatenation, as in Modern Greek. Of the languages which employ rules motivated by the OCP, some may utilise epenthesis, as in English past tense formation (Borowsky 1987), and others may incorporate deletion, as in Modern Greek.

Each of these language particular effects share a commonality: identity and adjacency. I propose, then, that the OCP is a parameterised universal. I follow Yip (1988), who implicitly provides for parameterization in terms of which tiers are scanned, and how OCP violations are resolved (whether through MSCs, or through language-particular rules, and therefore two-stage conflation, or both). If the values for these parameters are specified for a language, then the conditions for identity and adjacency need not be specified for the rules themselves (cf. Yip 1988, who argues that identity need not be specified in rules).

Along these lines, Hong (in preparation) has proposed that (for harmony systems at least) identity is a function taking as its arguments the trigger and target of a rule over a specific tier. For example, the Identity Condition on Yawelmani round spread is specified as:

(17) Identity Condition (Hong in preparation)

Identical (Argument, Target) <HIGH>

That is, [round] spreads from an argument (or trigger) to a target identical in height. This function is independent of the rule of round spread itself, since the rule does not specify height identity. Alpha notation (representing element identity) is therefore no longer necessary in rule formalizations.

The identity function, motivated independent of OCP effects, should also be available for reference by the OCP if it is stated in a language's grammar. The condition governing mora deletion in Modern Greek specifies identity in the place tier and all that it dominates. Since vowel

[5]See Odden (1986), however, for arguments that OCP effects are simply language-particular rules.

hiatus resolution in Modern Greek is an OCP effect, a value must also be set for an adjacency parameter. I propose that another function exists in Modern Greek which allows scanning of a tier other than that to which identity refers. The Adjacency Condition in Modern Greek, therefore, specifies the moraic tier. The conditions proposed for Modern Greek with their parameter values are shown in (18).[6]

(18) Modern Greek Identity and Adjacency Conditions

Identical (Argument, Target) <PLACE>
Adjacent (Argument, Target) <MORA>

Consequently, the rule which specifies only the deletion of a mora in a left-to-right direction of application (omitting alpha notation) will be applicable only if adjacent morae are specified with identical places of articulation.

6 Conclusions

Modern Greek offers several implications for the OCP. One is that distinct tiers may be available for adjacency and identity, which is counter to the single-tier hypothesis. Since mora deletion adheres to conditions of identity and adjacency, the prosodic tier must be a candidate for scanning by the OCP, in addition to tiers at the segmental tier or below. Because vowels in hiatus are not realized as one long vowel, they are not fused, which refutes the hypothesis that conflation is a single-phase process. Finally, if the condition of identity is specified for a language, but not within its rules, then the condition of adjacency should also hold for the language as a whole when more than one tier is relevant.

[6]The definition and role of arguments (or triggers) and targets is not entirely clear in deletion rules, and is left as a problem beyond the scope of this article.

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