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PRZEMYSŁAW OSTALSKI
Department of English Language
University of Łódź

RECEIVED PRONUNCIATION AND LINKING *R*. AN OPTIMALITY-THEORETIC ANALYSIS OF VARIABILITY[1]

Keywords: Phonology, RP, Optimality Theory, Non-rhoticity

The paper provides the description of two phonological systems, one with a categorical rule, the other with a free-variation pattern, both concerning the use of linking r. First, it shows that free variation may be captured by the Local Dynamic Reranking concept. The concept does not presume the existence of separate constraint rankings within a given accents, it merely recognizes locally fuzzy areas being determined by sociolinguistic and other factors.

Thus free variation (the existence of separate, apparently conflicting variants: rhoticity-nonrhoticity) may not only be described but also explained within a single theoretical framework. Obviously a lot remains to be done in the field of how statically undetermined (neutralized) rankings are dynamically ranked and what causes the fuzziness of local neutralized areas within constraint rankings.

Second aside from the explanation of the phenomenon of free variation, the present study attempts to avoid the arbitrariness of the choice of free variants. By combining constraints and underlying forms (floating nature) the paper shows that a given sound appears where it does but also why it is this particular sound that surfaces. It appears that with the amalgam of both markedness constraints and carefully justified possible underlying representations will one be able to come completely to terms with surface phonological variation which is so much a part of any linguistic interaction in any human language.

The following presents various non-rhotic patterns found in RP and subsequently offers a unified phonological description within the framework of Optimality Theory. The paper attempts to account for phonological variability which may be socially/stylistically conditioned.

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[1] This paper is primarily based on chapter 6 (the appendix) of *Ostalski* (2004), where both the formal mechanism of Optimality Theory and rhotic variations are discussed in greater detail.

1.1. The Data

We begin our investigation of non-rhoticity in Received Pronunciation, the accent which enjoys the highest overt prestige in England. Geographically, RP is associated with England, though not with any particular locality within England. It displays the linking-*r* pattern described in classic textbook accounts (Jones 1956; Gimson 1962). In this accent, we find *r*-zero alternations in morpheme-final positions, with the consonantal alternant appearing pre-vocalically. The overall distributional pattern may be illustrated as in (1)

(1)

_C(#)	*beard*	bɪəd
_#C	*clear the*	klɪə ðə
_#	*clear*	klɪə
_#V	*clear up*	klɪərʌp
_V	*clearing*	klɪərɪŋ

1.2. The Selection of Underlying Forms

Before we will attempt to describe this pattern in terms of Optimality Theory, we have to resolve the question of the structure of possible underlying forms (inputs). Given the nature of the alternations, we face the choice of input (underlying) form with *r* present or absent. (Let us note that the following discussion concerns domain-final environments, as there is no need to posit underlying rhoticity in other environments; all synchronic reflexes of diachronic sequences [VrC] and [VC] are categorically leveled (e.g. *thought* and *fort* both rhyme) and rhotic pronunciation never surfaces. If we select the underlyingly non-rhotic form, then the contrast between words with historical sequence [Vr#] and words with the sequence [V#] is lost, in other words the conditioning factor disappears. This situation may be dealt with under the criterion of surface (output) predictability. Given a set of morphemes which shows an alternation between segments X and Y and another set which only ever contains X (in our case, for example, *bar* ([r~ø]) and *ma* ([ø])), we assume that Y is underlyingly present in the alternating set. The X alternant in the latter set is then derived by process. If we were to choose X as underlying in the alternating cases, the process necessary to derive the Y alternant would be unable to distinguish between the alternating and non-alternating forms (loss of the conditioning factor).

Applying this criterion to the analysis of alternation found in RP, we can take *r* to be present in the input form. However, instead of assuming that *r* consonant in this context occupies any kind of syllabic position, we propose that domain-final *r* is lexically a 'floating' segment (cf. Harris 1994) with no syllabic position of its own, but with melodic specification. The surface appearance of *r* would then be envisaged as linking under specific circumstances (docking) of a floating (not linked) melodic

element to the syllabic skeleton. The advantages of this type of treatment of the underlying form of linking *r* are twofold:

- The 'floating' nature of domain final *r* means that the segment behaves in a dual manner: it is not visible syllabically (unless docked), while being visible melodically. Given such a representation, it is possible to assume that the floating segment can be **lexically** retained as a reflex of historical *r* in a non-rhotic system even after the constriction has been lost. This squares with the crucial fact that the linking *r* phenomenon is more influenced by the lexical specification (whether or not the letter *r* is in spelling; whether or not *r* is 'etymological') than by a general phonological rule. Thus the 'floating' *r* sidesteps the issue of whether linking *r* is a distributional constraint (*r* only before vowels), or whether it is the output of a dynamic derivational rule (be it r-deletion or r-insertion). The dependence of the r~ø alternations upon lexical specification (spelling) rather than upon the application of a specific phonological rule may be illustrated by the following excerpt (Wells 1982, pp. 114–5; bold mine):

  > But the speaker of a non-rhotic accent wishing to adopt a rhotic accent has more of a problem. He needs an [r]-insertion rule [...] to turn [fɑm] into [fɑrm] [...], yet the [r]-insertion rule will still yield hypercorrections if applied indiscriminately after the correct vowels. It will change not only *farm*, *banner*, *corn*, *beer*, but also *calm*, *Anna*, *dawn*, and *idea*, to the inappropriate [kɑrm, ˈænər], etc. [...]. In fact, knowledge of **spelling** helps: anyone who can spell correctly will be able to identify the words where change is appropriate by the *r* in the **orthographic** representation. Experience shows, however, that it is very difficult for a Londoner, for example, to avoid using absurd pronunciations like [dɔrn], [aɪˈdrər] when imitating an American or Scottish accent. When personally attempting this feat, I find that constant vigilance is called for (and I am fortunate enough to be a good **speller**).

The excerpt serves to illustrate several points, some of which will be taken up in due course. It should, however, be discernible that linking *r* is a victory of lexical specification over a generalized phonological rule. (Incidentally, the excerpt points to the possible routes of diachronic processes that led to the development of non-rhotic patterns [linking and intrusive *r*'s]. As linking *r* relies heavily upon the spelling, it is highly unlikely that the intrusive *r* pattern could have evolutionarily arisen from it. We would rather posit independent developments or the rise of linking *r* from the intrusive *r* pattern due to the influence of literacy [spelling]).

- The 'floating' *r* account does not postulate the existence of an underlying *r* in non-alternating forms (*north*, *corn*, *cart* etc.), whereas the traditional r-dropping account does (Gussmann 1980, Wells 1982). If *r* were assumed to be underlyingly present in such forms as *fort*, *farther*, then this would also have to be true of historically r-less forms, such as *thought*, *father*. Given the historical merger, the not-so-ideal speaker has no way of recovering (other than spelling) the original contrast between [Vr] and [V] in these contexts (*thought* and *fort* rhyme categorically).

One obvious consequence, which for some will unquestionably be recognized as a disadvantage, of adopting floating *r* as the underlying form is allowing two different

underlying forms for the same word in two different accents (e.g. *car* RP [kɑr̃], G(eneral)A(merican) [kɑr]; with [r̃] denoting a 'floating' sound), which may be seen as counter-intuitive at first glance, given the obvious historical relation that rhotic accents bear to non-rhotic varieties. This, however, does not necessarily have to be seen as a disadvantage as we are compelled to answer a methodologically primitive question of whether diachronic facts are to be attributed to the speaker's knowledge and consequently should a synchronic analysis really be a disguised version of the history of the language.

The answer adopted here is a committed no. The assumption that non-rhotic accents are underlyingly rhotic and that with speakers of, say RP, historical *r* is lexically recoverable in all contexts, for example through continued exposure to the original rhotic model may be shown to be false by the excerpt quoted from Wells or by observing the distributional patterns obtaining in accents with intrusive *r*, where the contrast between historical sequences [Vr] and [V] in domain-final positions has been completely obliterated and *r* is not at all recoverable.

1.3. OT Account

1.3.1. Preview of OT Constraints

Having established the tentative form of the input, we proceed to identifying crucial constraints involved. Two families of constraints are posited to comprehensively explain the data in RP and in languages in general: FAITH(FULNESS) and MARK(EDNESS). FAITH constraints monitor the phonetic realization of underlying featural, segmental, and suprasegmental material. In this capacity, they ban deletion or addition of non-underlying features, segments, and morae. In contrast, MARK constraints monitor macrosegmental details such as syllable and feature associations ranging across segments. It is understood that MARK constraints serve to make a sound sequence as unmarked as possible in that they favor the realization of natural linguistic processes (assimilations, reductions, etc.).

In (2), the primary constraints to be used in this study are summarized. Others will be introduced and discussed as the need arises. They are grouped by category: FAITH constraints are listed in (2a), and MARK constraints are listed in (2b).

(2) Principal constraints used in the study
a. FAITH category: underlying material is preserved
IdentSyll
Syllabic structure of the input is to be preserved in the output; Don't delete, don't insert.

To take a simple example: the syllabic structure O(nset)N(ucleus)C(oda) of the input does not violate IdentSyll iff the syllabic structure of the output is ONC.

IDENTMEL
Melodic content of a given input segment is to be preserved in the corresponding output segment. Don't assimilate, don't dissimilate

e.g.: the melodic sequence of the output [kʌm] does not violate IDENTMEL iff the melodic sequence of the input is [kʌm].

b. MARK category: minimize articulatory effort. We will also use provisionally the following MARKEDNESS constraints of:

NOCODA
Syllables do not have codas

e.g. the sequence [CV] will not violate the constraint, whereas [VC] will

NOCOMPLEXONSET
Onsets cannot be complex

e.g. the sequence [CV] will not violate the constraint, whereas [CCV] will.

FILL^{NUC}
Nucleus positions must be filled with segments

1.3.2. Categorical linking r in RP

In view of this distributional property observed in RP we propose a markedness constraint (after McCarthy 1991):

RONSET
[r] occurs only in onsets

e.g. [kɑ-rt] violates the constraint

The RONSET constraint will generally be ranked very low in most languages.

Before we proceed to illustrate OT account of r-ø alternation in RP, we need to note an interesting dual property of the 'floating' *r*. The 'floating' *r* is present as a melodic content not attached to any skeletal point, thus it will surface only if linked. Therefore, surface [r] will definitely violate IDENTSYLL, as a new skeletal point is created; while no surface *r* will mean the violation of IDENTMEL, there being no melodic content equivalent to [r] in the output.

We provide provisional tableaux for RP in 8 (a, b &c) with the following ranking: NOCOMONSET > > RONSET, FILL^{NUC} > > IDENTMEL > > IDENTSYLL

(8a) RP '*near*' [nɪə#]

INPUT [nɪə~r#]	NOCOM ONSET	RONSET	FILL^{NUC}	IDENTMEL	IDENTSYLL
[nɪə-r] *r* in the coda		* !			*
[nɪə<r>] *r* unparsed		* !			
[nɪə r-ø] *r* in the onset of an unfilled nucleus			* !		*
[nɪə-C] *C* in the coda				*	* !
[nɪə C-ø] *C* in the onset of an unfilled nucleus			*	*	* !
☞ [nɪə]				*	

(8b) RP '*near the*' [nɪə ðə]

INPUT [nɪə~r ðə]	NOCOM ONSET	RONSET	FILL^{NUC}	IDENTMEL	IDENTSYLL
[nɪə-r ðə] *r* in the coda		* !			*
[nɪə<r> ðə] *r* unparsed		* !			
[nɪə r-ðə] *r* in the onset	* !				*
☞ [nɪə ðə]				*	

(8c) RP '*near is*' [nɪər ɪz]

INPUT [nɪə~r ɪz]	NOCOM ONSET	RONSET	FILL^{NUC}	IDENTMEL	IDENTSYLL
[nɪə-r ɪz] *r* in the coda		* !			*
[nɪə<r> ɪz] *r* unparsed		* !			
☞ [nɪə r-ɪz] *r* in the onset					*
[nɪə ɪz]				* !	

1.3.3. Variable linking r in Adoptive-RP

In the above, we have provided an OT analysis of categorical alternations in RP, presently we will attempt to provide a similar analysis of variable alternations. Variability has traditionally been avoided in phonological analyses (this usually stems from a very careful selection of analyzed material, e.g. see Harris (1994) and his accounts of rhoticity where variable *r* phenomena are absent), whereas it has occupied a central position in sociolinguistics. Thus, whenever we encounter a variable phenomenon we possess plenty of descriptive material but very little in the way of explanatory theoretical accounts. The reason for this situation lies probably in the nature of the variable data which is not easily tackled in categorically binary (applies – does not apply) theoretical framework. Variability (or free[2] variation) features in any linguistic interaction and in all components of the language as frequently (if not more frequently) as categorical rules. Thus, ability to account for linguistic variation would constitute a considerable asset to any theoretical framework of linguistic description.

In this section, we will analyze the variation found in Adoptive RP (Wells, 1982: 283) i.e. that variety of RP spoken by adults who did not speak RP as children and adopted RP usually for social reasons the following excerpt illustrates the nature of the variation and provides the data (Wells, 1982, pp, 284–5):

> [...] Thus, one crucial characteristic of most speakers of adoptive RP is their lack of control over the informal and allegro characteristics of RP. [...] Perhaps the most striking example of this phenomenon concerns [r] sandhi. In native-speaker RP it is usual to use sandhi /r/ in the appropriate places, in the environments where it is 'intrusive' (unhistorical, not corresponding to the spelling) just as in those where it is not. But the speech-conscious tend to regard intrusive [r] as incorrect, and hence attempt to avoid it. [...] Thus we may expect to find sandhi [r] used freely in mainstream (native) RP, but sparsely in speech-conscious adoptive RP. [...]It should be understood that these are to be taken as tendencies, not as absolute differences.

The above excerpt mentions sandhi [r] which includes both linking and intrusive *r* phenomena. Intrusive *r*, however, will not be dealt with in the present section. Thus in adoptive RP the phrase *near is* would appear without any [r]. Therefore, it would seem to be appropriate to posit an r-less underlying form for the word *near* for example, in view of the fact that in this type of accent [nɪə] does not alternate with [nɪər]. Nonetheless, the appearance of non-rhotic forms is only a general tendency and rhotic pronunciations with linking *r* do appear, however less frequently. Consequently linking *r* is usually not categorical, typically it is sometimes applied, sometimes not, depending on speech rate, contextual style, and no doubt also random factors. We face, thus, a genuine case of free variation in adoptive RP. The variation in question is also occasionally found in RP itself, where less common alternative

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[2] Free of any phonological conditioning, governed by factors such as tempo, style etc.

possibilities aside from linking [r] would include [ʔ] or zero, e.g. *near is* [nɪəʔɪz] or [nɪə ɪz].

Presently we will analyze non-rhotic pronunciations like [nɪə ɪz]. It is evident that in order to account for this type of surface forms, derived from underlying rhotic forms, we need a different ranking of constraints than that used in, for example, 8a. The underlying form posited will be rhotic, as it sometimes surfaces and we have to be able to account for it – surface predictability. Additionally, making allowances for all the previous arguments we will use 'floating' *r* approach.

We provide provisional tableaux for Adoptive RP in 9 with the following ranking: NoComOnset > > ROnset, FILL^{NUC} > > IdentSyll > > IdentMel

(9a) Adoptive RP '*near is*' [nɪə ɪz]

Input [nɪə~r ɪz]	NoCom Onset	ROnset	FILL^{NUC}	IdentSyll	IdentMell
[nɪə-r ɪz] *r* in the coda		* !		*	
[nɪə<r> ɪz] *r* unparsed		* !			
[nɪə r-ɪz] *r* in the onset				* !	
☞ [nɪə ɪz]					*

It should also be equally evident that the ranking exactly as that used for 8 (a, b & c) is required to account for occasional linking *r*, thus:

(9b) Adoptive RP '*near is*' [nɪər ɪz]

Input [nɪə~r ɪz]	NoCom Onset	ROnset	FILL^{NUC}	IdentMel	IdentSyll
[nɪə-r ɪz] *r* in the coda		* !			*
[nɪə<r> ɪz] *r* unparsed		* !			
☞ [nɪə r-ɪz] *r* in the onset					*
[nɪə ɪz]				* !	

Careful observation shows that it is only in the ranking of two constraints in 9a and 9b – IdentMel and IdentSyll, that the two tableaux differ. To be able to account for both rhotic and non-rhotic pronunciation of for example the phrase *near is* in adoptive RP, both rankings (IdentMel > > IdentSyll – 9a, IdentSyll > > IdentMel – 9b) are required. Thus, we hypothesize the concept of **Local Dynamic Reranking**, where contiguous constraints form a cluster ranked externally but neutral internally.

Local Dynamic Reranking

Free variation results from dynamic neutralization of rankings of locally contiguous constraints.

Using our example of free variation between rhotic (linking *r*) and non-rhotic forms in adoptive RP the constraints IDENTMEL and IDENTSYLL form a local constraint cluster $\text{IDENT}^{\text{NEUT}}$; where ranking is statically neutralized – neither IDENTSYLL > > IDENTMEL, nor IDENTMEL > > IDENTSYLL, but dynamically determined (by extralinguistic factors – social class, tempo) as either IDENTSYLL > > IDENTMEL (non-rhotic [nɪə ɪz] or IDENTMEL > > IDENTSYLL (rhotic, linking *r* [nɪər ɪz]; the cluster being ranked in relation to the remaining constraints. In other words, the hypothesis of Local Dynamic Reranking accounts statically for both rankings $\mathbf{R}_{\text{RHOTIC}}$: **NOCOM > > ONSET > > RONSET > > FILL**$^{\text{NUC}}$ **> > IDENTMEL > > IDENTSYLL** ([nɪər ɪz]) and $\mathbf{R}_{\text{NONRHOTIC}}$: **NOCOM > > ONSET > > RONSET > > FILL**$^{\text{NUC}}$ **> > IDENTSYLL > > IDENTMEL** ([nɪə ɪz]) at the same time, while the ranking is dynamically determined as $\mathbf{R}_{\text{RHOTIC}}$ or $\mathbf{R}_{\text{NONRHOTIC}}$.

We might also envisage free variation as a ranking (R_x) being a function (f) of style, tempo or other factors (C): $R_x = f(C)$

We provide provisional tableaux for Adoptive RP in 10 (a, b &c) with the following ranking: NOCOMONSET > > RONSET, FILL^{NUC} > > $\text{IDENT}^{\text{NEUT}}$

(10a) Adoptive RP '*near*' [nɪə#]

INPUT [nɪə~r #]	NOCOM ONSET	RONSET	FILL^{NUC}	$\text{IDENT}^{\text{NEUT}}$ IDENTSYLL < > IDENTMEL
[nɪə-r] *r* in the coda		* !		*
[nɪə<r>] *r* unparsed		* !		
[nɪə r-ø] *r* in the onset of an unfilled nucleus			* !	*
[nɪə-C] *C* in the coda				* * !
[nɪə C-ø] *C* in the onset of an unfilled nucleus			* !	* *
☞ [nɪə]				*

(10b) Adoptive RP *'near the'* [nɪə ðə]

INPUT [nɪə~r ðə]	NOCOM ONSET	RONSET	FILL^{NUC}	IDENT^{NEUT} IDENTSYLL < > IDENTMEL
[nɪə-r ðə] *r* in the coda		* !		*
[nɪə<r> ðə] *r* unparsed		* !		
[nɪə r-ðə] *r* in the onset	* !			*
☞ [nɪə ðə]				*

(10c) Adoptive RP *'near is'* [nɪə ɪz] ~ [nɪər ɪz]

INPUT [nɪə~r ɪz]	NOCOM ONSET	RONSET	FILL^{NUC}	IDENT^{NEUT} IDENTSYLL < > IDENTMEL
[nɪə-r ɪz] *r* in the coda		* !		*
[nɪə<r> ɪz] *r* unparsed		* !		
☞ [nɪə r-ɪz] *r* in the onset				*
☞ [nɪə ɪz]				*

We have to note that the tableau 10c does not predict two winners, but that it merely identifies the fact that the winner may be **one** of the two.

Thus, we have showed that it is possible to account for free variation using the general OT framework with slight modification in the form of Local Dynamic Reranking (clusters of neutralized ranking). There remains, however, one more possible alternant aside from [r] and [ø], namely [ʔ]. Consequently our analysis will need to incorporate not only [nɪə] or [nɪər], but also [nɪəʔ] as possible variants (all in free variation) of *near* in the phrase *near is*.

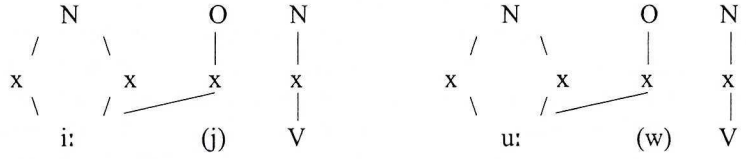
We now turn to a possible constraint relating to the presence of [ʔ]. In many languages, the direct juxtaposition of vowels across a word boundary tends to lead to the creation of an intervening segment, typically a glide or a glottal stop, as in *two* [w] *of*, *two*[ʔ] *of*. The excrescent segment can be viewed as a hiatus-breaker which fills the otherwise vacant onset between the two nuclei. The glide realizations, [w] and [j], only occur after a certain class of vowels, namely [i(:)], [ɪ] and [u(:)], [ʊ]. (see 11 for English and Polish examples):

(11)

he ought	hiːʲɔːt
my arms	maɪʲɑrmz
may ask	meɪʲæsk
beauty and	bjuːrɪʲænd
window open	wɪndoʊʷoʊpn̩
now and then	naʊʷənðen
you aren't	jʊʷɑrnt
kontynuować	kɔntɪnuʷɔvɑɕ
aktualny	ɑktuʷɑlnɪ

The backness of the glide is evidently determined by the nature of the preceding vowel – front [j] after a front vowel, back [w] after back. The hiatus glide can be straightforwardly explained as the spreading of an element from the first nucleus into the vacant onset, see 12:

(12)



[ʔ] serves regularly in many languages as a syllable boundary marker, when the initial sound of the second syllable is a vowel. Thus, a hiatus of vowels belonging to different syllables (especially when the second vowel is accented) may be separated by [ʔ] instead of being joined by a vocalic glide (see 13 for Polish and English examples).

(13)

cooperate	koʊˈʔɑpəreɪt
geometry	dʒiˈʔɑmətri
reaction	riˈʔækʃn̩
reanimacja	rɛʔɑɲiˈmɑtsjɑ
jubileusz	jubʲiˈlɛʔuʃ

Additionally, any initial accented vowel may be reinforced by a preceding glottal stop when particular emphasis is placed on the word, whatever the preceding sound, e.g. *It's* [ʔ] *empty*, *I haven't seen* [ʔ] *anybody*, *She's* [ʔ] *awfully good*; or any vowel, initial in an accented morpheme, may receive this glottal reinforcement, e.g. It' un [ʔ] eatable, such dis [ʔ] order. A glottal stop may, indeed, be even encountered in places where spread linking [ʲ] and [ʷ] are usually found. This is most common before a vowel beginning an accented syllable, e.g. very angry [veri ʔæŋgri]. The appearance of a glottal stop in [V#V] sequences has some physiological basis: enough

air pressure has to be built under the glottis for full vocal folds vibration of the morpheme-initial vowel to take place right from the moment the vibration accompanying the morpheme-final vowel has ceased. The momentary lack of voicing between the two vowel marks the syllable boundary (between two vowels not constituting a diphthong) or word boundary. It is worth stressing that it is perfectly possible to pronounce the two-vowel sequence with no glottal stop intervening, it is, however, more optimal to produce a glottal stop (air-pressure build-up) between two vowels than not.

In view of the fact that the insertion or appearance of a glottal stop in morpheme boundaries between different vocalic nuclei is quite a widespread and natural (unmarked) phenomenon we will need to devise a constraint regulating the issue. We might resort to a well-established constraint of Onset (Prince&Smolensky 1995), stating that syllables have onsets. Thus, the sequence [CVVC] would violate the constraint, or alternatively we might establish a constraint banning the two-nuclei cluster. Both constraints, however, would not be capable of explaining why it is a glottal stop that occurs in the environment in question. A more appealing alternative would be to posit a markedness constraint (with physiological conditioning behind it) of a default hiatus-breaker, but it would have to work more like a traditional rewrite rule (V#V → V#ʔV) than a true OT constraint rule.

This said, we opt for yet another possibility, which was seized upon before, namely the concept of floating sounds. It is precisely the same type of non categorical nature of both [r] in domain final environments and [ʔ] in domain-initial environments that forces the choice of floating approach. The appearance of [ʔ] is optional (although widespread), to begin with, and then it competes with the glides in certain environments. Because a glottal stop may be optionally used in all [V#V] environments and glides only when the first vowel has a specific quality, we elect to assign the glottal stop to domain-final environments which end with a vowel (on the surface) as a floating element, more like the 'floating' *r*. The problem of this approach is that it allows more than one floating element. The sensible question would then be: why? We, however, will not enter the issue here and simply switch the perspective and reformulate the question as: why not? Floating nature of any sound may be posited or inferred when a given sound ever surfaces. The interaction of floating [ʔ] and OT may be seen in tableaux 14.

(14) *I am* [aɪ æm] ~[aɪ ʔæm]

INPUT [aɪ ~ʔm]	NOCOM ONSET	NOCODA	FILL^{NUC}	IDENT^{NEUT} IDENTSYLL < > IDENTMEL
[aɪ-ʔ æm]				
ʔ in the coda		* !		*
[aɪ<ʔ> æm]				
r unparsed			* !	
☞ [aɪ ʔ-æm]				
r in the onset				*
☞ [aɪ æm]				*

The analysis seems to work well and it accounts for free variation [ø] ~ [ʔ] in intervocalic environments. The floating account and its stress on form-coding rather than constraint operation begins, however, to rear its ugly head, when we apply it to adoptive RP pattern of domain-final [ø] ~ [r] ~ [ʔ] alternation (see 15).

(15) *near is* [nɪər ɪz] ~ [nɪəʔ ɪz] ~ [nɪə ɪz]

INPUT [nɪə~(r, ʔ) ɪz]	IDENT^{NEUT} IDENTSYLL < > IDENTMEL
[nɪə-r ɪz] *r* in the coda	*
[nɪəʔ ɪz] *r* unparsed	*
[nɪə r-ɪz] *r* in the onset	*
[nɪə ɪz]	*

As it is discernible, the constraint cluster is not able to differentiate between possible linking sounds. Taking above into consideration and also the fact the dual floating sounds seem to be a little bit too much, we return to a possible constraint pertaining to the possibility of [ʔ] occurrence.

We have shown at some length the need to introduce a new constraint instead of burying the sound in the underlying form. We will term the markedness constraint:

Default Hiatus Breaker

Syllabic sequence of two adjacent nuclei is realized as melodic [VʔV].

Obviously, the constraint may be violated not only by linking or intrusive *r* but also by glide-spreading. We will have little to say about the latter case and will proceed to the full analysis of adoptive RP pattern (see 16). It is note worthy that DHB enters into ranking-neutralized cluster with IDENT^{NEUT}, NEUTR (IDENT^{NEUT} > > NEUTR; NEUTR > > IDENT^{NEUT}); the relative ranking of IDENTSYLL and IDENTMEL is immaterial with respect to DHB.

(16) *near is* [nɪər ɪz] ~ [nɪəʔ ɪz] ~ [nɪə ɪz]

INPUT [nɪə~r ɪz]	NOCODA	RONSET	NEUTR DHB	IDENT^{NEUT}
[nɪə-r ɪz] *r* in the coda	* !	*	*	*
[nɪə<r> ɪz] *r* unparsed		* !	*	
[nɪə r-ɪz] *r* in the onset			* !	*
[nɪə ɪz]			* !	*
[nɪə-ʔ ɪz/ ʔ in the coda	* !			* *
☞ [nɪə ʔ-ɪz] ʔ in the onset				* *

The second possible tableau (IDENT^{NEUT} > > DHB) will result in patterns described above. (r-present or absent). DHB seems to be a constraint tightly connected with style and/or tempo of speech in English. Thus, the dynamic reranking with respect to this constraint will be expected to be more likely in formal style and slower rate of speech.

1.4. Conclusion

On having completed the description of two phonological systems, one with a categorical rule, the other with free-variation pattern, we will pass on to some concluding remarks. First, it has been clearly shown that free variation may be captured by the Local Dynamic Reranking concept. The concept does not presume the existence of separate constraint rankings within a given accents, it merely recognizes locally fuzzy areas being determined by sociolinguistic and other factors. Thus free variation (the existence of separate, apparently conflicting variants: rhoticity-nonrhoticity) may not only be described but also0 explained within a single theoretical framework. Obviously a lot remains to be done in the field of how statically undetermined (neutralized) rankings are dynamically ranked and what causes the fuzziness of local neutralized areas within constraint rankings. Second aside from the explanation of the phenomenon of free variation, the present study attempted to avoid the arbitrariness of the choice of free variants. By combining constraints and underlying forms (floating nature) we have been able to show that a given sound appears where it does but also why it is this particular sound that surfaces. It appears that with the amalgam of both markedness constraints and carefully justified possible underlying representations will one be able to come completely to terms with surface phonologi-

cal variation which is so much a part of any linguistic interaction in any human language.

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